In 2011, the university community came together to draft an ambitious ten-year strategic plan to transform Stevens: The Future. Ours to Create. Looking back, I am extremely proud of the profound and positive changes we have accomplished over the last four years.

Yet our work is far from done. The successes of the recent past form the foundation to achieve our aspirations for the future, “to become a premier, student-centric research university.”

Strategic priorities — students, excellence, technology and collaborative impact — guide our journey. These priorities permeate our work, our culture and our expectations of ourselves. We hold ourselves accountable to specific and measurable goals, and we have made remarkable progress.

A sharply increased demand for our undergraduate and graduate programs coincides with an unprecedented increase in the academic profile of our student body.

Graduation and retention rates are higher than ever before, and graduates are achieving extraordinary career outcomes: 95 percent secure a job or enter graduate school within six months of graduation. In 2015, Stevens ranked #3 in the nation by PayScale for return on investment among more than 1,200 colleges and universities nationwide.

The size and quality of our faculty body is at its highest in our history, and we are recruiting new faculty from prestigious institutions such as MIT, Princeton, Caltech and the University of Michigan.

The number and size of research awards — as well as the impact of those grants — have grown significantly, enabling new achievements and important breakthroughs in fields as diverse as personalized cancer treatment, cybersecurity, coastal resiliency and financial systems.

Pioneering new programs in emerging fields such as quantitative finance and business intelligence and analytics are distinguishing Stevens as a university that prepares graduates to harness technology for immediate and long-term success.

Diverse new programs offered by our School of Business and by our College of Arts and Letters are attracting the attention of prospective students, employers and the media.

Alumni have become re-engaged in record numbers: in campus events, in philanthropy and in volunteer activities. Fiscal year 2015 broke all previous fundraising records, with $28.6 million in gifts and pledges, up 508 percent since FY11. Two recent $10 million gifts — from Susan and Greg Gianforte ’83 and from Chairman Emeritus of the Board of Trustees Larry Babbio ’66 — have propelled our progress.

What will it take to maintain this steep, upward trajectory?

In short, it will take focus. It will take discipline. It will take determination. And, it will take the collective energy of the entire Stevens community. Through Collaboration, Impact.

Stevens Institute of Technology is entering a new era. We are a university on the rise, and our future is gleaming.

I invite you to join us on this journey. The future is ours to create.

Per aspera ad astra,
With renewed energy, focused determination and a powerful and impassioned community of faculty and staff, alumni, friends and advocates, Stevens has made significant and measurable progress toward transforming itself into the university envisioned in its ten-year strategic plan: a premier, student-centric, technological research university.
In 2013, the Stevens-led Systems Engineering Research Center (SERC) received a five-year, $60 million contract from the U.S. Department of Defense.

- Undergraduate applications have increased 116 percent since 2010, in parallel with 80- and 60-point increases in the 25th and 75th percentile SAT scores, respectively, over the same period.
- Graduate applications have risen 79 percent between 2010 and 2015, concurrent with increased selectivity.
- Research awards—focused on complex problems with great potential for improvement in the human condition and profound societal significance—have increased 41 percent since 2010.
- Campus, classroom, laboratory, library and technology infrastructure enhancements have improved and modernized our academic environment and our work.
- A resurgence in alumni engagement and philanthropic support has confirmed a renewed pride in Stevens: alumni giving has increased 508 percent since 2010.
- Discipline, sound management and progress on a steady growth trajectory have put Stevens in its most stable financial position in recent memory.

This President’s Report 2016 reviews and highlights examples of the incredible progress taking place throughout the university.

Graduate applications have increased 79 percent between 2010 and 2015.

Philanthropic support to Stevens increased five-fold, from $4.69 million in FY11 to $28.56 million in FY15.

First-year student retention rate

Stevens undergraduate applications have more than doubled (116%) in the past five years.
A Competitive Edge

Molding Raw Talent into Sheer Power Through Academics

The outcomes confirm the value of a Stevens education: 95 percent of graduates secure jobs in their field or enter graduate school within six months of graduation, many with multiple job offers. A Stevens education prepares them for rapid career advancement, affirmed by the university’s PayScale rankings: #3 in the nation for ROI and #10 for mid-career salaries.

What Differentiates the Stevens Education?

For generations, Stevens was known for its rigorous, broad-based engineering curriculum—preparing graduates for career success in technical fields and as business leaders and entrepreneurs. The Stevens of today is no longer just an exceptional engineering school—it is a technology university.

With programs across all engineering and science disciplines, as well as a newly-accredited School of Business and a College of Arts and Letters, the Stevens of today is a more diversified university that has distilled and institutionalized many of the features that defined our successful graduates: innovation, entrepreneurship, research opportunities and real-world experience.

These attributes, combined with the intense and intentional integration of technology throughout all aspects of the curriculum, define the Stevens of today.

Today’s graduates still earn one of the most technically challenging engineering degrees in the nation. Undergraduate and graduate science students pursue cutting-edge research with faculty mentors. Business and College of Arts and Letters students stand out from other graduates by focusing on real-world problems with tremendous societal impact.

Our faculty continues to innovate and improve the Stevens of today—across all curricula and programs. And, our graduates’ success is a testament to their work.
Winner of the 2015 Solar Decathlon

Inspired to respond to the destruction wrought by Hurricane Sandy on communities throughout New Jersey, a Stevens team of 60 students and faculty from 11 disciplines across the university came together to design and create a net-zero energy home resilient enough to withstand hurricane-force winds and flooding. The Stevens team won top honors at the 2015 U.S. Department of Energy Solar Decathlon at Orange County Great Park, California, in October 2015.

The SU+RE HOUSE team was recognized by a panel of judges for the design, construction and sustainable operation of a structure conceived of as the “Coastal Home of the Future.”

The entry achieved a total score of 950.685 and outshone 16 other teams from universities around the world, ranking highest in architecture, market appeal, communications, appliances, engineering, commuting and home life. SU+RE HOUSE marks Stevens’ third consecutive entry in the prestigious competition since 2011.

“This competition challenges the best and brightest minds from around the world to create innovative, highly energy-efficient homes that will change how we build. These homes will become the new standard in blending affordability, consumer appeal and design with optimal energy production and maximum efficiency.”

— Ernest Moniz
U.S. Energy Secretary

SU+RE HOUSE

[Sustainable + Resilient]

Overall winner, garnering the highest score in competition history and the most first-place wins

28 months from start to finish

11 academic disciplines represented

60 graduate and undergraduate students involved

SU+RE House ranked the highest in 7 categories (100 points available in each category).
The robust and well-established cooperative education program (co-op) at Stevens continues to generate success for students and employers alike. Co-op is a five-year educational program where students alternate between semesters of full-time work and full-time study in areas related to students’ academic major and career interests. The co-op program provides experiences that prepare students to connect their academic studies with the world of work, explore career interests and clarify their ambitions. 

Case in point: Sylvana Azana graduated in 2014 with a B.E. in civil engineering and is now working for ExxonMobil Corporation, her co-op employer in summer 2013. Working for ExxonMobil, Azana says, was the “co-op experience of a lifetime.”

So impressive was Azana’s performance that at the end of her co-op, her supervisor extended an offer of full-time employment, along with an award as a 2013 ExxonMobil Technical Scholar, which honors outstanding student performance in school and in a co-op.

Prior to ExxonMobil, Azana completed co-ops with Granite Construction, where she developed real-world construction management skills on significant infrastructure projects, including the Queens Bored Tunnels and Structures, and Tishman Construction, where she worked on the project management team for the expansion of New York Penn Station.

According to Azana, both experiences helped her to succeed at ExxonMobil, where she had to hit the ground running from the moment she began.

“I was confident that my knowledge of construction and project management obtained from these past co-ops would help me excel, but I was eager to begin my co-op with ExxonMobil, where I would manage a project all on my own,” said Azana.

Knowing full well what the job entailed and having relished her co-op experience, Azana says accepting the offer was an easy decision. She adds that going into her senior year at Stevens with a job secured was a tremendous burden lifted from her shoulders, and gave her parents peace of mind.
Innovating a Finance Education for a Changing Industry

“We were able to design a more innovative curriculum that combined technological rigor and deep knowledge of the complex relationship between models and reality. In addition, thanks to internships and co-ops, Stevens graduates, whether in quantitative finance, mathematics, computer science, engineering or another discipline, have the experience to really contribute to and, indeed, lead the changes in the new financial services industry.”

Dr. George Calhoun
Distinguished Service Professor, School of Business
Director, Quantitative Finance Program

Starting Outside the Box

“Introduction to Entrepreneurial Thinking,” taught by innovation expert Dr. Peter Koen and ten faculty, challenges freshman engineering students to think outside the box. It’s one of only two such undergraduate courses in the nation.

The goal, explains Koen, an associate professor in the School of Business, is not necessarily for his students to become entrepreneurs. “An increasing volume of research shows that entrepreneurial thinking, even within large organizations, can and does transform those organizations’ strategies and success in innovating new ideas and products.”

The course emphasizes market research, customer needs and students’ presentation skills, which are tested in one-minute videos posted to social media. Later, each team in every section of the 500-student class presents a three-minute video describing a new product idea for evaluation by faculty and fellow students.

During the 2014 launch of the course, 20 percent of students enrolled were accepted on Kickstarter, the world’s largest funding platform for creative projects, an impressive statistic for the initial year of this effort.

Hanlon Financial Systems Center

The heart of the Financial Systems Center is the state-of-the-art Hanlon Financial Systems Lab. This lab came into being as a result of a generous gift by Stevens trustee and alumnus, Sean Hanlon, and his wife, Cathy. The lab integrates the latest hardware and software technologies, accessing real-time data, as well as historical time-series data, to support innovative research into the most common and urgent problems in contemporary finance. In October 2015, Hanlon and his family announced another generous donation that will include funding for a new research and teaching lab to expand the opportunities available to students who study finance at Stevens. The new lab, scheduled to open in fall 2016, will emphasize data visualization technologies as they apply to finance. Designed to inspire greater collaboration, the lab will be laid out as a series of trading desks, adding to the Wall Street feel of the center.

“My wife, Cathy, and I have made gifts and participated in the design and building of the first Hanlon Financial Systems Laboratory and are doing the same for the second Hanlon Financial Systems Laboratory. The Hanlon Financial Systems Center supports many aspects of Stevens’ quantitative finance, financial engineering and cybersecurity curricula and research.”

Sean Hanlon ’80, Stevens Trustee
Setting the Pace

Focusing on Tremendous Potential Through High-Impact Research

During the strategic planning process, more than 300 members of the Stevens community determined that Stevens should pursue an aggressive — but focused — research agenda. Building on core strengths, with laser focus, discipline and strategic investments in faculty, the university is making a name for itself across a few research domains with tremendous potential for significant impact:

- Healthcare and medicine
- Sustainable energy
- Financial systems
- Defense and security
- Coastal resiliency and sustainability
- Science, technology, engineering and mathematics (STEM) education

Better Data, Better Forecasts, Stronger Infrastructure

In 2014, the Port Authority of New York & New Jersey awarded Stevens $6.6 million to develop an innovative observation and forecast system that provides information on the potential risk and magnitude of overland flooding prior to and during significant storms.

Hurricane Sandy was a painful reminder that coastal storms are among the world’s most costly and deadly disasters, capable of causing tens to hundreds of billions of dollars in damages and destroying entire neighborhoods and critical infrastructure. To provide the most reliable forecasts of storm surge and overland flooding in the coastal and urban waters of the world during an extreme event, an ensemble-based methodology is being developed using the Stevens version of the well-established Princeton Ocean Model.

The contract includes the purchase of a Hewlett-Packard scalable supercomputer that is being named Pharos — the Greek word for lighthouse. The contract will also support the purchase and installation of 26 new sensors to be deployed in New York Harbor to measure water levels, temperature and salinity every six minutes and transmit that data in real time to the Stevens supercomputer.
A new series of financial research projects may reshape the way federal regulators prepare for electronic trading events and spot illegal trades.

Sponsored by the Chicago Mercantile Exchange (CME) Group Foundation, this research is focusing on four areas:

- Applying quantum computing to complex financial problems
- Creating the world’s first high-frequency finance journal, which will be based at Stevens
- Supporting the university’s annual October high-frequency finance conference, the largest such conference in the world
- Developing sHiFT, a new simulation platform for today’s markets

One of the most exciting components of the Stevens-CME collaboration, sHiFT is an ambitious effort to build a new simulation platform that will run real-time market data and introduce actual high-speed trading scenarios into the market flow to test global markets and exchanges for weaknesses and vulnerabilities.

In addition to stress-testing financial markets, sHiFT will also be useful in testing the impact of new or proposed electronic-trading regulations — in any nation or jurisdiction — simply by implementing these rules in the sHiFT system and observing the resulting impact.

The first commercial version of sHiFT is expected to become available by mid-2016.
When Small Is Transformative: Opportunities in Nanomaterials

Nanotechnology involves materials so small they are described as one- or two-dimensional. Technically, that's 1 to 100 nanometers. How big is a nanometer, though? A single-walled carbon nanotube is one nanometer wide. If you magnified it 100,000 times, you'd have something the width of a human hair. Research at that scale, let alone manufacturing, is especially difficult.

Yet the potential applications are enticing. Improved fabrication could lead to transparent, flexible sheets that function as solar panels. To make that possible, Dr. E.H. Yang, professor of mechanical engineering, and his team are working to understand the basic principles of nanomaterials, such as graphene or conjugated polymers. When these are tuned to interact with the environment in a particular way, the smart materials can remove bacteria or oil from water, for example, or be used directly in a semiconductor, reducing size and increasing speed.

Brain Research at Stevens: Improving Lives

Deep in the brain, a kind of “brain pacemaker” can disrupt the firing of neurons. That disruption actually produces almost immediate therapeutic benefit in patients with Parkinson’s disease and eventual benefit in severe obsessive compulsive disorder. Although the technique is FDA-approved, the exact mechanism is not well understood. Enter Dr. George McConnell, assistant professor of biomedical engineering, who has received a NARSAD Young Investigator Grant from the Brain & Behavior Research Foundation to elucidate those mechanisms and improve therapies. Considering himself a neural engineer, McConnell is part of the growing cohort of Stevens faculty working in the life sciences. “The brain fascinates me,” says McConnell, “and the potential for my lab’s research to improve so many lives is a strong motivating force. I’m grateful to the Brain & Behavior Research Foundation for their funding support early in my career here at Stevens.”

STEM Education Innovations

In September 2015, Stevens was awarded a five-year, $2.8 million grant by the National Science Foundation’s (NSF) Improving Undergraduate STEM Education program to help faculty learn to adapt their teaching of science, technology, engineering and mathematics (STEM) topics — particularly introductory courses in core topics such as mathematics, science and engineering taken during the freshman and sophomore years — to more active, student-centered approaches that research shows can lead to deeper, more transferable learning.

“Imagine every windshield or every piece of glass in a skyscraper becoming an invisible power source. The potential for these materials can only be realized if we can develop methods to fabricate large volumes.”

Dr. E.H. Yang
Professor of Mechanical Engineering

Sponsored Research
41% increase in dollars awarded
FY15 vs. FY14 (shown in millions of dollars)

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Bionic Systems Could Transform Healthcare

Imagine a tooth with its own sensor that could help detect decay or disease and warn dentists and doctors. Imagine a replacement ear, formed on a 3D printer and grown in a lab, with built-in electronics that capture sound and carry it to the brain.

While they once might have been construed as something out of a science fiction novel, these advancements are now moving closer to reality in the laboratory of Dr. Manu Mannoor, an assistant professor of mechanical engineering at Stevens.

Mannoor, with a background in mechanical engineering, biomedical engineering and electronics, and communications engineering, combines the three fields in innovative research toward what he calls “bionic systems”—engineered devices designed to mimic or enhance human organs, tissues and functions.

He believes the research could lead to custom-formed replacement body parts for those who have been injured or disfigured by accidents, and could also lead to the development of organs that one day allow us to exceed normal human capabilities.

“My research is an effort to integrate all three of these disciplines, and the way I do it is through materials science,” Mannoor says.

Mannoor’s ultimate goal is to create devices that are fully integrated with the body. Like a tattoo, his bionic tooth is fashioned from graphene, pliable enough to mold to the contours of a tooth and bond with natural enamel. The sensor is formed on a thin layer of silk, which dissolves once the sensor is applied.

To build his bionic ear, Mannoor three-dimensionally prints silver particles that will form a coil antenna with a scaffold composed of a mixture of cartilage cells and other biological materials. The framework of the ear is printed layer by layer, then nurtured in a bath of nutrients to help it grow to form the cartilage tissue. This printing technique allows the ear to be built gradually, with all electronic components completely integrated.

Mannoor hopes the techniques he is developing will also one day be used to create other body parts, such as replacement joints that physicians can then monitor to prevent similar injuries from recurring.

Solving the Challenge of Multiple Myeloma

Dr. Wenting Zhang took an idea for an exciting new cancer research method all the way to the final round of Google’s Solve for X regional innovation competition in February 2015, while she was still a Ph.D. candidate at Stevens. The new method incorporates genetic profiles and tumor microenvironments of individual patients within novel, highly realistic models of the bone tissues where tumors can grow. Zhang developed the idea in collaboration with Dr. Woo Lee, professor of materials engineering.

The method promises to improve treatment of multiple myeloma (MM), an incurable but treatable blood cancer that affects more than 25,000 new patients in the U.S. annually. The new method is useful because MM cells had never previously been successfully cultivated outside the body, which makes testing therapies much more difficult. In addition, the choice of therapeutic medications is especially important when dealing with multiple myeloma.

“The right medication can extend life and quality of life for five years or even, in some cases, ten years or more,” Zhang says. “But an incorrect therapy can be disastrous, and when the patient relapses, the cancer will be extremely drug-resistant. And not only is each patient different—each stage of MM in an individual patient is different in terms of the most effective therapies.”

Zhang’s platform for building individual, patient-specific models uses Stevens-developed microfluidic devices to simulate the microenvironment in which tumors typically grow. The methodology was developed in collaboration with Hackensack University Medical Center (HUMC), a leading U.S. center for MM research, under the close guidance of Dr. Lee. The National Institutes of Health (NIH) provided support.
Accelerating Entrepreneurship

For 2015: 11 New Companies | 8 Patents Issued | 19 Patent Applications

These are some of the initial successes of the holistic approach to an “innovation ecosystem” that Stevens is creating for students and for faculty.

From a required freshman course in entrepreneurial thinking to the creation of sophomore- and junior-level “innovation design labs” to a full-year senior course in innovation culminating in a significant group project displayed at the Innovation Expo, Stevens undergraduates get intense and frequent doses of innovation and entrepreneurship throughout their education. Graduate students benefit from entrepreneurial innovation courses, as well.

Extracurricular programs such as “I&E” summer scholarships, monthly meetings of the NJ Tech Meetup, and the Thomas H. Scholl Lecture Series by Visiting Entrepreneurs, which has featured internationally recognized luminaries such as Dr. Jeong Kim, provide numerous opportunities for students to hone their entrepreneurial skills well before graduation.

Faculty launch business ventures derived from their research, with support from the Office of Innovation and Entrepreneurship, in areas ranging from attracting venture funding to filing for patents to developing licensing agreements.

These nascent efforts are bearing fruit already, and the potential is enormous.
Dr. K.P. Subbalakshmi, a professor of electrical and computer engineering and a 2016 Jefferson Science Fellow, has performed groundbreaking research in the areas of cognitive radio networking and security, cognitive mobile cloud offloading, and Internet and social media data analytics and security.

Her own work in networks, security and social media analysis continues to produce commercial applications in two primary areas.

Subbalakshmi’s groundbreaking work in cognitive radio networks resolves much of the bandwidth problems in overloaded networks that compromise connectivity. The cognitive radio networks Subbalakshmi has explored and built are able to scan and adjust for traffic on the fly, managing interference, latency and congestion. This patented technology is being commercialized with funding from an NSF Small Business Innovation Research/Small Business Technology Transfer (SBIR/STRTR) Phase II grant.

Current iterations of the cloud-based technology can combine available WiFi networks for greater bandwidth, for example, or provide a real-time network map. In use by police departments and other critical-event users, these cognitive radio networks integrate with existing hardware, add a layer of security, and, most importantly, keep communication flowing. This is critical during emergencies such as blackouts, natural disasters and terrorist incidents. The same technology is also being tested in Africa to aid developing nations lacking basic IT infrastructure. The technology has attracted national media attention, with Voice of America and Fox News covering the R&D as well as the potential applications.

Another commercial venture that has grown out of Subbalakshmi’s research is in the area of deception detection in online environments. Working through hundreds of thousands of posts from social media and sell/buy listings, Subbalakshmi’s lab has mapped deceptive language patterns and developed algorithms to detect text-based deception with 99 percent accuracy, even across languages and cultures. The algorithm can detect intentional deception and actual gender (89 percent accuracy) in a text sample as short as 140 characters. The commercial software detects both lies and spin, giving the tested text a truth score that can guide better decisions. The software is currently being used by more than 15 countries and is rapidly expanding.

Although the initial focus was on cybersecurity, the technology is being repurposed based on increasing interest from the financial industry. A patent was recently issued for the technology to target the growing global need in fintech security.

“Effective learning of calculus, and integration of this learning with engineering science, leads directly to a better understanding of engineering principles,” says Dr. Alexei Miasnikov, director of the Department of Mathematical Sciences at Stevens.

But about seven years ago, faculty noticed that significant numbers of incoming freshmen simply weren’t successful in calculus.

Dr. Miasnikov, Dr. Keith Sheppard, interim dean of the Schaefer School of Engineering and Science, and an interdisciplinary team of mathematicians, computer scientists and educators assembled to study the issue in-depth and brainstorm creative solutions.

Fast-forward to 2014, when Stevens unveiled Gradarius, a revolutionary software program that acts as an “intelligent tutor.” The software program has revolutionized learning outcomes in calculus for students who participate. “Student persistence in the courses and their knowledge retention have both soared, while the academic standards of the courses have remained rigorous,” says Miasnikov.

The program uses analytics on student learning to diagnose students’ learning challenges and provides customized, individualized feedback to help students master calculus concepts. The program also manages homework assignments, administers and grades quizzes, and monitors students’ self-study.

With more than three million students enrolling in college-level calculus each year in the United States alone, the market potential for Gradarius is quite significant. Applications for other courses are also planned.

“Gradarius is an educational tool that guides students to a deeper understanding of and success with calculus, and universities are already contacting us because they want this same success for their students, as well,” says Miasnikov.

Calculus Innovation Inspires Start-up with Enormous Potential

Born out of a vexing educational challenge faced by Stevens and engineering programs nationwide, Gradarius, a start-up venture formed by two Stevens mathematics faculty, has the potential to revolutionize how students learn — and succeed — in calculus.

Dr. K.P. (Suba) Subbalakshmi, professor of electrical and computer engineering, has a long history with technology commercialization at Stevens. “The entrepreneurship and innovation environment is very active,” she says. “Teaching entrepreneurial skills has gone way up and companies have more help getting off the ground.”
It’s a ritual of spring at Stevens: Senior Design Projects on full display at the Innovation Expo. The projects span disciplines, fine-tune teamwork skills and launch some teams into a commercialization trajectory for their projects.

Dr. Victor Lawrence is both a member of the National Academy of Engineering and the National Inventors Hall of Fame, joining the ranks of Edison, Tesla and Marconi.

Fellows of the National Academy of Inventors among Stevens faculty

Innovation & Entrepreneurship Fellowships per year for students

From Innovation Expo to Start-Ups, Student Entrepreneurship Flourishes
Good Vibrations Keep Bridges Safe

Almost 150,000 bridges in the U.S. are considered deficient or obsolete by the American Society of Civil Engineers (ASCE). In addition, a 2013 ASCE study called more than 18,000 U.S. bridges “fracture critical,” where the failure of one element of the structure could cause an entire bridge to collapse. Overall, the nation received a grade of D+ for its infrastructure.

As the 2007 Minneapolis bridge collapse showed, an inspection every two years does not adequately predict devastating failure. Passive monitoring, called “structural health monitoring instrumentation,” has begun to be implemented, but has limitations based on power needs.

During the 2013–2014 academic year, a multidisciplinary senior design team consisting of six Stevens students created VEHSHI, a wireless device that harnesses electrical energy from structural vibrations caused by car and truck traffic on a bridge. That team won the 2014 Stevens Innovation Expo Project Plan Pitch competition and inspired another team to pick up where VEHSHI left off.

VEHSHI 2, which consisted of 11 Stevens students, coupled the vibrational energy harvesting device with existing structural health monitoring instrumentation and an expanded network of sensors to create a real system for continuous structural health monitoring. At the 2015 Innovation Expo, VEHSHI 2 won second place in the Project Plan Pitch, and the audience named it their favorite project.

Both design teams worked with faculty advisors and an external sponsor, M+P International, manufacturers of the existing structural health monitoring instrumentation VEHSHI used in its design. The VEHSHI team is now in the process of acquiring a patent and will be testing this coming spring on a small bridge in Morris County, New Jersey.

Entrepreneurial Bubble

Hailing from Little Silver, New Jersey, Kevin Barresi ’15 attended a biotech high school, but focused on the computer and hardware side. Stevens was a natural choice for him. In his first year, he ran cross-country and joined the cybersecurity club.

Although he didn’t see himself as entrepreneurial, he always had creative energy to spare. He started building apps, including a custom radio frequency identification (RFID) lock for his room.

That’s nifty, but you should set your sights higher.” That’s the message Barresi received from Dr. Mukund lyengar, assistant professor and entrepreneur in residence, Department of Electrical and Computer Engineering.

“I wanted to keep developing the technology and incorporate some of the machine-learning work I’ve been doing. That’s how iUbble, the company, began,” says Barresi.

After graduating in December 2015, Barresi has rebranded the software company to focus on enterprise systems. The new venture, Apollo by iUbble, targets buy-side and sell-side brokers and analysts within the finance industry. Barresi expects the first licensing deal with a small to mid-sized hedge fund in 2016.

Student-Built Software Could Revolutionize Diabetes Care

One of 2015’s most successful student projects — picked up by a nationally known incubator and attracting Silicon Valley venture capital — came from a team that formed in the fall of 2014 and succeeded thanks to hard work and a community of mentors.

Bryan Bonnet ’15 and Nishant Panchal ’15 met senior year and began developing the idea of a chronic health condition monitor. The two computer engineering majors looped in Justin Williams ’15, an electrical engineering major, and the trio began to work all hours. They pushed each other constantly, always asking, “How can we make this better, more impactful for healthcare providers and patients?”

The final product is a cognitive diabetes decision-management platform that runs on tablets, computers and smartphones for patients and delivers data to providers through an electronic medical record. The platform collects metrics about sleeping, mood, meals and activity levels and recommends changes, such as a more optimal meal schedule or a better exercise routine. Although the first version of the platform is tuned for diabetes, it can be adapted in the future to other chronic conditions, such as congestive heart failure. The data can drive better decisions by patients, providers and payers, improving millions of lives.

The Stevens I&E ecosystem provided exactly the kinds of technical support and guidance that this high-potential technology start-up, Data Minded Solutions, needed. Support ranged from advice for meeting with potential investors, partners, physicians and patients about their technology and how it fits in the current medical care landscape to assistance with marketing materials and documents of incorporation, to successful introductions to venture capital firms and healthcare providers. The company was invited to be a part of the Iron Yard Venture accelerator in Spartanburg, South Carolina, and has recently relocated back to Hoboken with high hopes for the future and their Stevens-spawned start-up company.
Remarkable Students

Stevens students take one of the most rigorous course loads in the country. Yet they find significant time to volunteer, excel in athletics, serve in student government, write for *The Stute*, launch new businesses, participate in cooperative education programs, join one of more than 100 campus clubs, participate in musical recitals and dramatic performances, partake of the vast cultural and intellectual resources available to them in Manhattan—and much more. These experiences contribute to developing the students who go on to incredible personal and career success.

One example of the power of these extracurricular activities is our students’ engagement in Hoboken life, culture and service. Stevens students become a part of the Hoboken community from the time they set foot onto campus to the time they graduate and beyond. (Today, more than 650 Stevens alumni call Hoboken home.) New students get their first taste of community service during orientation week, which regularly features programs ranging from park cleanups, to assisting at pet adoptions, to tutoring. Fraternities faithfully volunteer at Hoboken’s annual fall and spring arts and music festivals, and athletes adopt schools through their “Ducklings” tutoring program. And, the impact of Stevens volunteers on Hoboken during Hurricane Sandy was memorialized by a proclamation by the city recognizing the 2,000 volunteer hours logged by more than 300 students.

Our students are, in a word, remarkable.
A Community of Choice

A shared history inextricably links Stevens and Hoboken. But the physical compactness of the “mile square city” has also created an interdependence that extends campus life beyond Castle Point and into the bustling and vibrant city of Hoboken.

From freshman orientation to graduation and beyond, Stevens students engage with Hoboken. They babysit, start businesses, enjoy local restaurants and serve their community in many ways.

“Just before Christmas, Stevens students helped us deliver over 70 bags of groceries to St. Matthew Trinity Lunchtime Ministry,” says Monsignor Robert Meyer. “[They] bring a great, positive energy that truly makes a difference to those that we serve.”

Stevens students also spend time mentoring and tutoring Hoboken youth. During “STEM-a-thon,” student volunteers swarmed Stevens’ Canavan Arena to guide 300 sixth-graders through engineering design activities and encourage their interest in science, technology, engineering and math.

Towards the Pinnacle

The Pinnacle Scholars Program is an invitation-only program for stellar undergraduate students who want to push the boundaries of their education even further. Students are identified and selected during the undergraduate admissions process. Participants benefit from programs such as a leadership course that focuses on technology and society taught by President Farvardin, specialized research seminars, an annual cultural passport for Broadway plays and museum memberships, and study-abroad experiences.

#1

The Stevens men’s volleyball team won the NCAA Division III national title in 2015.

Amy Regan ’16 epitomizes the Stevens ideal of the scholar-athlete. Along with her 3.8 GPA, Regan finished first place in the NCAA Division III Cross Country National Championship in 2014.

The enduring relationship between the Stevens community and the city of Hoboken was best exemplified by the post-Hurricane Sandy volunteer efforts of Stevens students. In the days after Hurricane Sandy, which left the city flooded and without power for many of its residents, Stevens students were on the front lines helping to evacuate residents, identify victims who needed emergency attention and deliver essential supplies.
Perhaps nowhere more than in the re-engagement of Stevens alumni—from participation in campus events to volunteering their time to mentor students to philanthropic support—is the momentum at Stevens so palpable.

Alumni once again speak with pride about their alma mater. They are asked to help. And they do, without hesitation.

From Wall Street to Asia, Stevens’ re-energized alumni network of nearly 40,000 is a powerful force that is propelling the university toward its ambitious goals.

And, the network is expanding beyond alumni. Friends and organizations, from the newly established President’s Leadership Council to partnerships with non-profits such as the Liberty Science Center in Jersey City, New Jersey, the New Jersey Technology Council, IEEE, and the Hoboken Historical Museum, are building a strong network to enhance and expand the university’s impact.

Partnership with the Liberty Science Center

A three-day exhibition at Liberty Science Center in Jersey City, New Jersey, in 2015 showcased five student projects created as part of the “senior design” experience and selected from more than 135 projects displayed at the annual spring Innovation Expo showcase of students’ capstone projects.

The projects displayed included an Ironman-like strength suit for soldiers; a four-footed robot capable of driving nimbly in any direction; and an open-source guitar: a conventional electric guitar with a built-in microcomputer and software that can reproduce pedals, plug-ins and other audio effects. Another project included a train system in which individual cars can break off and stop at local stations even as the main train continues on an express route.

This collaboration raised the visibility of Stevens statewide and regionally and has led to plans for a permanent Stevens exhibit starting in spring 2016 featuring robotics and other technology interactives that will appeal to the more than 200,000 Liberty Science Center visitors each year.
Alumni Team Up in Industry

ExxonMobil calls on its senior technical staff to recruit on university campuses. It’s a work culture, says Jim Szipszky, who holds a B.E. (1989) and an M.Eng. (1992) from Stevens, that doesn’t rely on a third party to screen and refer candidates. Engineers like Szipszky go out to schools across the country, including Stevens, and talk to engineering students looking for internships, co-ops or their first professional job. The recruiters are looking not only for technical skills but the kind of collaborative leaders who will match the company’s culture.

Jim Szipszky and Frank Roberto ’76 have been tag-teaming the recruiting process for the last three years, and working together on it for over a decade before. Both men have busy roles and have divvied up recruiting tasks as their schedules require. They also cultivate younger leaders as part of their recruitment collaboration.

“I continue to be inspired by Stevens,” Roberto says. “I see that the candidates are still strong and that admissions is growing.”

Both Roberto and Szipszky see similar qualities in the students they meet at Stevens — solid academics, leadership, initiative and experience. Roberto connects the Stevens brand of initiative with the broad education at Stevens: “Give them a fuzzy job and they’ll figure it out.”

“It’s energizing to meet with the students, to get to know them and their projects,” Szipszky says. “The more you know, the more you want to be involved.”

Giving Back

An Invested Alumnus Invests in Stevens’ Past, Present and Future

Frank Semcer, Sr., knows about change. Most of his career, he’s had his sleeves rolled up and has been elbows-deep in figuring out how to do things better. And that’s what he expects from and gives to all the Stevens students who have worked at his company, MICRO Stamping in Somerset, New Jersey: hands-on experience figuring out how to do things better.

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

When he enrolled at Stevens in 1961, Semcer wasn’t sure what work he would love. He pursued his Bachelor of Engineering degree and graduated from Stevens in 1965. Four years later, he joined MICRO, his father’s company, eager to apply his engineering principles to the family business. However, the business had been sold to a conglomerate that was unwilling to invest in innovation.

Eight years later, Semcer bought the company back and used his education and entrepreneurial mindset to take the company in new directions. He had discovered the work he loved: changing the business to adapt and prosper through changing markets and industries. Under his leadership MICRO has grown into an international organization with four divisions dedicated to the medical, aerospace and electronics industries.

Throughout the years, Semcer has remained engaged with his alma mater, serving on the Stevens Board of Trustees. In 2013, he even turned his birthday into an occasion to create positive change for Stevens, this time by reaching back into the history of the university and of Western culture.

“The Stevens archives are filled with wonderful historical items from the Stevens family and all around the world,” Semcer says. “As a birthday gift, my wife, Mary Jane, sponsored the restoration of ‘De Divina Proportione,’ an influential treatise on geometry, art and architecture written by the Renaissance scholar Luca Pacioli and illustrated by Leonardo da Vinci.”

In 2015, the Sencers gave $5 million to support the Center for Healthcare Innovation.

In Frank Semcer’s life and work with Stevens, the past and future come together powerfully. One of his most important gifts to the university, and the future, may well be the dozens of students who have begun their professional careers through a co-op or internship at MICRO. Yet, connecting with those students has also returned the favor.

“I feel the energy of these young engineers and the faculty,” he says. “When I’m on campus, the mood is positive and the outlook is great.”
Interactive Art Lights Up Hoboken Hotel

At the W Hotel on River Street in Hoboken, a lively screen of colorful butterflies reacts to the movements of passers-by. This interactive, crowd-driven display was created from a partnership between a multidisciplinary team of Stevens students and Bell Labs scientists. Bell Labs, the industrial research arm of Alcatel-Lucent, created the original Motion Engine source code that powers “Butterflies Alight.” Bell Labs provided this source code to the students and challenged them to make improvements to the code and enhance its artistic functionality. Students from computer science, visual arts and technology, and music and technology spent the summer of 2014 creating a 3D outdoor environment in which caterpillars populate the space, undergo metamorphosis into butterflies, and then fly around the space. Using a webcam, an audience’s motion can be tracked and interpreted inside the program, driving the storyline and affecting movements.

Corporate Partnerships Stretch from Hoboken to Antarctica

Stevens’ corporate partnerships bring leaders in industry together with expert faculty, pioneering research, and top engineering and technical talent. Stevens students and faculty aid in the development of innovative solutions to corporate challenges, while students gain hands-on experience and faculty identify real-world applications for their research. These partnerships across a wide variety of industries — telecommunications, publishing, energy, finance, technology and many others — demonstrate the value these relationships bring both to the corporations and to Stevens.

- **Research Expertise** Lockheed Martin, the Port Authority of New York & New Jersey, and Accenture have all turned to Stevens faculty expertise to meet complex challenges in areas of logistics modeling and optimization for a research project in Antarctica, coastal resilience in Hoboken and the New York metropolitan region, and financial services problems.

- **Knowledge Exchange** As a member of the Stevens Alliance for Technology Management, John Wiley & Sons, along with AT&T, Alcatel-Lucent and others, join together to exchange best practices and learn from Stevens researchers in the areas of data analytics, risk and innovation.

- **Philanthropic Support** The American Bureau of Shipping (ABS) is a significant donor in support of the expansion of the Stevens Davidson Lab, which will be renamed the ABS/Davidson Laboratory Complex upon completion.

- **The Future of STEM** Many corporate partners, including PSEG and ABS, provide funding for students to pursue undergraduate and graduate studies. PSEG, along with Wiley, also supports WaterBots®, an underwater robotics curriculum developed by the Stevens Center for Innovation in Engineering in Science Education (CIESE) for K–12 youth.

- **Talent Pipeline** In a relationship spanning more than 50 years, ExxonMobil returns to Stevens year after year to recruit our world-class students to join their workforce.

- **Student Research & Design** PSEG was a top donor in support of the SU+RE HOUSE, Stevens’ winning entry in the U.S. Department of Energy 2015 Solar Decathlon. Stryker, Iron Mountain and others sponsor capstone senior design projects across a variety of disciplines.

- **Corporate Education** NASA, Verizon and Pfizer partner with Stevens to train their next generation of corporate leaders in our cutting-edge programs on-site, online or on campus.
Alumni Engagement to Create a World-Class Environment

“To attract and inspire great people to do their best work at Stevens, we are creating a world-class environment that will allow our faculty to have state-of-the-art teaching and research laboratories, students to have a living-learning campus and a technology infrastructure that enables pioneering work across many domains.

“This will enable the university to recruit and nurture serious, high-potential students who can really benefit from Stevens and, in turn, go out into the world and make a significant difference. The campus environment, increased scholarships for capable students, skilled faculty, cutting-edge research—they all work together to create a great university.

“In everything we do, we need alumni engagement, advocacy and support. Alumni—more than ever before—are essential to the future of Stevens.”

Larry Babbio ’66
Chairman Emeritus of the Board of Trustees

Sharing Hoboken’s Past and Future

STEVENS AND THE HOOKEN HISTORICAL MUSEUM

The Extraordinary Stevens Family, A New Jersey Legacy: 1776–1911, an exhibit at the Hoboken Historical Museum, shined a light on Hoboken’s modern-day founders and the profound impact they had on the nation as America’s first family of inventors.

“We always wanted to do such an exhibit, but it needed certain permissions and a real will to do it on the part of Stevens,” says Robert Foster, executive director of the Hoboken Historical Museum.

Sharing Hoboken’s Past and Future

STEVENS AND THE HOOKEN HISTORICAL MUSEUM

That will and permission would come directly from President Nariman Farvardin and his wife Hoveida, who envisioned such an exhibit themselves. From January through July 2015, thousands of visitors learned about the incredible legacy of innovation of the Stevens family and their contributions to Hoboken and beyond. A highlight was a video, “Tales from Castle Stevens,” produced by alumnus John Dalton ’60 and narrated by author and historian Richard Reeves ’60 with additional support from the Class of ’60.

Alumni Rally for Attila

With plenty of help from Stevens alumni, Attila the Duck went on a 145-hour “swim”; the goal was to raise 145 gifts in 145 hours to commemorate Stevens’ 145th anniversary.

But alumni stepped up in a big way, exceeding the goal by 500 percent.

One of the most successful fundraising campaigns in Stevens’ history, “Attila’s Journey” concluded with 870 gifts for a total of $125,319.28. Each time they made a gift, donors gave Attila an hour and 45 minutes of virtual swim time in the Hudson River. With enough alumni in other time zones clicking the “give” button at the right time, Attila stayed afloat during the entire challenge, and made history for Stevens.

President’s Leadership Council

The President’s Leadership Council, a distinguished cadre of extremely accomplished thought leaders from academe, industry and the non-profit sector, has been established to complement and propel the momentum of the Stevens Board of Trustees. This Council will lend their varied perspectives and broad and deep expertise to provide guidance to the President and the Board as they navigate the abundant opportunities and ongoing challenges that lie ahead for the university:

Gina M. Addo ’86
Owner, ADCO Electrical Corp., GMA Electrical Corporation and Scholes Electric & Communications

David M. Bonificacic, Sr. ’86
Managing Principal, CEO and Co-founder, WB Engineers+Consultants

Michele Brown
President and CEO, Choose New Jersey, Inc.

Claude R. Canizares
Bruno Rossi Professor of Physics, Massachusetts Institute of Technology

Christopher J. Daggett
President and CEO, Geraldine R. Dodge Foundation

Frank M. Fawzi ’84 M.M.S. ’87
CEO, IntelePeer

Arthur H. Harper ’78
Co-Founder, GenNx360 Capital Partners

George Jenkins
President, Merritt Capital Corporation

Gustav H. Koven ’65
Co-Founder, Savano Capital Partners

Jack Lipinski ’72
President and CEO, CVR Energy, Inc

Simon Nynens
CEO, Wayside Technology Group, Inc.

John W. O’Donnell ’84 M.Eng. ’00
CEO, Zodiac Aerospace SA, Aerosafety Division

Winslow Lorenzo Sargeant
Managing Director, S&T, LLC

Albert Sisto ’71
Founder and General Partner, Sixth Bridge LP

Paul H. von Autenried ’83 M.S. ’86
Senior Vice President and CIO, Bristol-Myers Squibb

Maggie Wilderotter H.Eng. ’14
Executive Chairman, Frontier Communications
Infrastructural Developments

This 145-year-old campus is experiencing a rebirth. Stevens is making progress on a long list of overdue campus improvements.

- 24 classrooms and academic spaces renovated
- 2 energy-saving measures instituted in 2014
- 11 campus landscaping improvements completed since 2014
- Library study space increased
- Ruesterholz Admissions Center opened

With the recent zoning board approval of the Academic Gateway, a new 90,000-square-foot pair of four-story buildings (plus a basement) connected by a sky bridge at the eastern corners of Sixth and Hudson streets, Stevens expects to open its first new academic facility in more than a decade. Stevens is simultaneously making progress to complete the Babbio Parking Garage before the opening of the Gateway building in 2018–2019, and the university is looking ahead to other important campus infrastructure projects that are aligned with the Strategic Plan.

Sustainability

Recycling on campus has been greatly increased and includes single-stream recycling for glass, aluminum, plastic, paper and cardboard. Dining Services recycles all organic food waste on a weekly basis. And, electronic waste — bulbs, ballasts, TVs, computers, monitors, etc. — can be recycled through a work order.

The Adirondack chairs on the scenic Hoboken campus are a favorite spot for study and discussion.
Cloud-Based Virtual Learning Environment

The new Stevens Virtual Learning Environment (Stevens VLE), unveiled in August 2015 as fall semester classes kicked off across campus, has revolutionized the way Stevens students access software. Created with support from the State of New Jersey, the Stevens VLE stores more than 45 software applications and packages in a private cloud, updates them automatically and securely pushes them to students, faculty and staff instantly upon request.

“We are one of a very small number of higher ed institutions doing this,” says David Dodd, Stevens’ chief information officer and vice president for information technology. “We wanted this to be a system anyone can use, on any device, regardless of their technical background or budget.”

Students can now access a wide range of technical, graphics, computational and other programs without buying expensive licenses or purchasing full-feature laptops or personal computers. The VLE is always on and always available, on or off campus, and via cable, broadband, wireless or cellular networks.

The package of accessible software will continue to grow over time and will soon include specialized professional software used in music technology and biomedical engineering, among other disciplines.

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A Welcoming Environment for Prospective Students and Families

“As Kevin and I thought about giving back, we knew we wanted to help the university make a good first impression, something like mine was. We are so gratified that in the Ruesterholz Admissions Center [the former Colonial House], prospective students and their families can feel the warm and inviting atmosphere, and under that, a powerhouse of technology and innovation. That’s Stevens.”

Virginia Ruesterholz ’83
Chairman of the Board of Trustees
A number of generous donors, including Susan and Greg Gianforte ‘83, have helped make possible the future Academic Gateway project, a new home for leading-edge laboratories, programs and academic departments, as well as classroom and office space, all equipped with state-of-the-art technology. The facility, located at Hudson and Sixth streets, is expected to open for the 2018–2019 academic year.

Alumni Leadership through Investment in Academic Excellence

“A Stevens education prepares people uniquely for the work environment. Stevens is such a rigorous academic experience. Hard work in and of itself is inherently virtuous and worthwhile, and intrinsically satisfying as well. That’s an advantage Stevens graduates have. The Stevens education is very applied, which makes them more creative in the work environment. The Stevens honor system teaches you there are no shortcuts.

“By supporting a new home for academic excellence at Stevens, my wife Susan and I are thrilled to directly impact generations of students to come. We believe that Stevens is and has been a national treasure at the forefront of modern engineering.”

Greg Gianforte ’83, Electrical Engineering
Lead Donor, Academic Gateway Building
Smaller Footprint
A host of energy initiatives have been implemented to reduce Stevens’ carbon footprint, including replacing inefficient lamps and implementing occupancy sensors.

100% Update
A complete update of the Stevens Data Center, which hosts all on-campus academic, administrative and research systems, was completed in FY15, with new electrical service, uninterruptable power systems, water cooling and backup power generation to significantly increase capability, capacity and reliability.

On the Grid
Stevens is installing a Smart Grid, a collection of technologies that enable more efficient, reliable, secure and cost-effective power. The Smart Grid includes frequency regulation, an ancillary service where the ISO matches real-time changes in system generation and load to maintain system frequency.

6,754
In 2015 all students and faculty gained full access to Stevens’ virtualized learning environment.

fiber + copper
Since spring 2014, new fiber and copper network infrastructure has been installed.

250+1
Stevens has committed itself as an Energy Star Partner in higher education, joining the ranks of 250 other universities and university systems.

300+
Total number of high-speed wireless access points since spring 2014

A $3 million grant from the American Bureau of Shipping will support construction of the ABS Civil, Mechanical and Naval Engineering Laboratory Complex in the Davidson Laboratory.
PRIDE & PRESTIGE

Pride and Prestige on the Rise

From the first-place finish in the 2015 U.S. Department of Energy Solar Decathlon to the overwhelming success of “Attila’s Journey” (the campaign to increase alumni participation in philanthropy to Stevens), pride and prestige in Stevens is growing exponentially.

Stevens is making a bold statement: in the media; among influential organizations, locally and nationally; and through the company it keeps.

Stevens is entering a new era, one in which the perception of the university’s value catches up with the reality.
President’s Distinguished Lecture Series

The President’s Distinguished Lecture Series brings to Stevens the world’s most distinguished thought leaders in science and technology to create debate and spur discussion on the role of technology and its implications in 21st-century society. This series was launched by President Nariman Farvardin in 2012 with the support of Dr. William Destler, president of Rochester Institute of Technology. Summaries and videos of past lectures are available at Stevens.edu/lecture:

- **Michael Hayden** United States Air Force, Retired; Principal, The Chertoff Group; Former Director of the Central Intelligence Agency; Former Director of the National Security Agency: “Danger, Complexity and Immediacy: Today’s Security Challenges”
- **Harold Varmus** Nobel Laureate and Director of the National Cancer Institute: “Transitions in Cancer Research”
- **Craig Barrett** Retired CEO and Chairman of Intel: “Economic Competitiveness in the 21st Century”
- **John Deutch** Institute Professor at the Massachusetts Institute of Technology: “Challenges and Opportunities of Unconventional Oil and Gas Production”
- **John Holdren** Assistant to President Obama for Science and Technology: “Science and Technology Policy in the Obama Administration: A Progress Report”
- **Norman Augustine** Former Chairman & Chief Executive Officer of Lockheed Martin: “Emerging Technology and its Broad Implications”

Stevens Authors Showcase

Along with being accomplished engineers, scientists, entrepreneurs and educators, among many other professions, a number of Stevens alumni can also add “author” to their job title.

The Stevens Authors Showcase — an ongoing initiative to exhibit books written by Stevens alumni, faculty and staff — opened its book collection to all attendees during the 2015 Alumni Weekend.

Books across a wide range of disciplines have been collected and showcased in this effort launched by the President’s Office, in coordination with the S.C. Williams Library, the Stevens Alumni Association and the Office of the Provost.

Stevens Awards Gala at the Plaza Hotel

Technology trailblazers, business leaders, worldwide humanitarians, educators, literary lions — all are Stevens community members who have been honored at the university’s premier awards celebration, the Stevens Awards Gala.

Since its 2013 inaugural event, the Gala has recognized extraordinary professional achievement, humanitarian service or support of the university. It also has celebrated Stevens pride and reflected the great excitement surrounding the university’s progress, as event attendance has soared each year. In 2015, about 450 people — a record turnout — gathered for the third annual celebration at the Plaza Hotel in New York City.

Some of the outstanding awardees have included:

- **Richard Reeves ’60**, historian, teacher, journalist
- **Elizabeth Bailey M.S. ’66**, Wharton School professor emeritus, University of Pennsylvania
- **Mark Crispin ’77**, author of the Internet Message Access Protocol (IMAP), which made email accessible and efficient for users worldwide
- **Sang-Beom Han M.S. ’85 Ph.D. ’91**, chief executive officer and president, LG Display

Stevens Noted by National and International Media

- Associated Press
- BBC
- The Christian Science Monitor
- The Economist
- Forbes
- Fox News
- The Guardian
- The Hill
- The Huffington Post
- Money
- NBC
- NPR
- The New Yorker
- The New York Times
- Scientific American
- USA Today
- The Wall Street Journal
- The Washington Post
- The Weather Channel
Our Financial Progress

Measuring Stevens’ Financial Growth

*Turnaround* is not too strong of a word to apply to the financial progress that has taken place at Stevens over the last four and a half years. Fiscal discipline, an overarching emphasis on efficiency and effectiveness, planned and realized revenue growth and strategic investments directly aligned with institutional priorities, as articulated in the ten-year strategic plan, *The Future. Ours to Create.*, have enabled Stevens to achieve a healthy, stable and increasingly positive financial outlook. The university’s financial position has continued to strengthen, as evidenced by the summary balance sheet below.

<table>
<thead>
<tr>
<th>(DOLLAR AMOUNTS IN THOUSANDS)</th>
<th>FY 2012</th>
<th>FY 2013</th>
<th>FY 2014</th>
<th>FY 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Assets</td>
<td>$307,906</td>
<td>$334,217</td>
<td>$360,519</td>
<td>$381,926</td>
</tr>
<tr>
<td>Total Liabilities</td>
<td>130,570</td>
<td>123,675</td>
<td>118,177</td>
<td>118,203</td>
</tr>
<tr>
<td>Total Net Assets</td>
<td>177,336</td>
<td>210,542</td>
<td>242,342</td>
<td>263,723</td>
</tr>
<tr>
<td>Total Liabilities &amp; Net Assets</td>
<td>$307,906</td>
<td>$334,217</td>
<td>$360,519</td>
<td>$381,926</td>
</tr>
</tbody>
</table>
Operating Revenue
The net operating revenue ratio indicates whether the university is living within its means. Two percent is considered a reasonable amount for an institution to achieve on an annual basis. The historical June 30 balances for this metric are:

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Operating Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2012</td>
<td>0.93%</td>
</tr>
<tr>
<td>FY 2013</td>
<td>2.00%</td>
</tr>
<tr>
<td>FY 2014</td>
<td>4.98%</td>
</tr>
<tr>
<td>FY 2015</td>
<td>5.04%</td>
</tr>
</tbody>
</table>

Return on Net Assets
The return on net assets percentage indicates if the university is financially better off than the previous year. Four percent is considered a reasonable amount to achieve on an annual basis. This metric is influenced, in part, by the capital markets, and the historical June 30 balances for this metric are:

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Return on Net Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2012</td>
<td>0.20%</td>
</tr>
<tr>
<td>FY 2013</td>
<td>0.36%</td>
</tr>
<tr>
<td>FY 2014</td>
<td>0.55%</td>
</tr>
<tr>
<td>FY 2015</td>
<td>0.83%</td>
</tr>
</tbody>
</table>

Viability Ratio
The viability ratio measures the availability of the university’s expendable net assets to cover its long-term debt. The threshold value is to have 2.0 times its debt in its expendable net assets. The historical June 30 balances for this metric are:

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Viability Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2012</td>
<td>0.39</td>
</tr>
<tr>
<td>FY 2013</td>
<td>1.23</td>
</tr>
<tr>
<td>FY 2014</td>
<td>1.60</td>
</tr>
<tr>
<td>FY 2015</td>
<td>1.66</td>
</tr>
</tbody>
</table>

Primary Reserve Ratio
The primary reserve ratio measures whether the university has sufficient expendable net assets to cover a portion of its annual total operating expense. The threshold value is to be able to cover 0.4 of its annual total operating expense with existing expendable net assets. The historical June 30 balances for this metric are:

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Primary Reserve Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2012</td>
<td>0.17</td>
</tr>
<tr>
<td>FY 2013</td>
<td>0.51</td>
</tr>
<tr>
<td>FY 2014</td>
<td>0.63</td>
</tr>
<tr>
<td>FY 2015</td>
<td>0.56</td>
</tr>
</tbody>
</table>

Composite Index
The composite financial index is a weighted calculation of the first four metrics into a single measure of overall financial health. A threshold value of 3.0 is to be considered as the minimal acceptable financial health. The historical June 30 balances for this metric are:

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Composite Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2012</td>
<td>1.06</td>
</tr>
<tr>
<td>FY 2013</td>
<td>4.52</td>
</tr>
<tr>
<td>FY 2014</td>
<td>5.21</td>
</tr>
<tr>
<td>FY 2015</td>
<td>4.46</td>
</tr>
</tbody>
</table>

Liquidity
The Stevens strategic plan identifies liquidity as the primary measure of the university’s success in financial matters. The liquidity index measures whether the university has sufficient cash and liquid assets to cover a portion of its annual total operating expenses. A threshold value of 1.0 indicates that the university could cover approximately three months of its annual operating expenses. The historical June 30 balances for this metric are shown to the left.

Additional Indices Related to the University’s Financial Health
- Operating Revenue
- Return on Net Assets
- Viability Ratio
- Primary Reserve Ratio
- Composite Index

Over the past four years, Stevens has increased its total net assets by 49 percent.
2022 in Sight

A Dashboard for Our Rising Trajectory

Stevens’ trajectory has been carefully aimed at a set of strategic, measurable goals. This dashboard represents where those metrics will be in 2022 as we complete this cycle of innovation and forward momentum.

$60M

Stevens’ endowment for 2022 is projected to have grown by more than $60 million since FY 2012.
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Former Chairman and President, Rudolph Technologies (previously Rudolph Research)

Virginia P. Ruesterholz ’83 H.Eng. ’08
Chairman of the Board of Trustees
Former Executive Vice President and President, Verizon Services Operations
Stevens at a Glance

As of February 2016

- **Student:Faculty Ratio**: 10:1
- **Undergraduate Students**: 2,976
- **Graduate Students**: 3,383
- **National Centers of Excellence**: 3
- **Active Research Centers**: 15
- **Undergraduate Majors**: 34
- **Master’s Programs**: 40+
- **Ph.D. Programs**: 22
- **First-year retention rate**: 94%
- **Six-year graduation rate**: 82%
- **SAT scores, middle 50%**: 1240–1425

Ranked 9th Best College City, The Huffington Post

Hoboken waterfront