EXPERTS AT RENSSELAER ARE WORKING TO MAKE AN AGING ELECTRIC GRID MORE RESILIENT

MAINTAINING STABILITY

EXPERTS AT RENSSELAER ARE WORKING TO MAKE AN AGING ELECTRIC GRID MORE RESILIENT
ON THE COVER:
Power systems experts at Rensselaer are working to make an aging electric grid more resilient.

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TEAM MEETING
Biologist Brigitte Arduini (center) leads the New York state-funded Stem Cell Research Core Facility, within the Center for Biotechnology and Interdisciplinary Studies at Rensselaer. Established in 2012, the core provides comprehensive support for basic stem cell research with tissue engineering and regenerative medicine applications. Projects range from studies in spinal cord injury repair, to skin tissue fabrication, neural development, and musculoskeletal regeneration. Arduini’s work includes advising and training investigators in stem cell science and cell-based research strategies. Pictured with Arduini (l-r) are Carolina Motter Catarino (graduate student in chemical engineering) and Divya Shastry (postdoctoral research associate).
The Rensselaer Orchestra presented a semi-staged version of *Peer Gynt* at the 2017 President's Holiday Concert.

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Simulating Virtual Surgery

WHILE SIMULATION PLATFORMS HAVE BEEN USED TO train surgeons before they enter an actual operating room (OR), few studies have evaluated how well trainees transfer those skills from the simulator to the OR. Now, a study led by Rensselaer that used noninvasive brain imaging to evaluate brain activity has found that simulator-trained medical students successfully transferred those skills to operating on cadavers and were faster than peers who had no simulator training.

Arun Nemani, who earned his doctorate in biomedical engineering in 2017, is the first author on the study, led by Suvranu De, the J. Erik Jonsson ’22 Distinguished Professor of Engineering and head of the Department of Mechanical, Aerospace, and Nuclear Engineering; and Xavier Intes, professor in the Department of Biomedical Engineering. They evaluated the surgical proficiency of 19 medical students, six of whom practiced cutting tasks on a physical simulator, eight of whom practiced on a virtual simulator, and five of whom had no practice. Study results were presented at the American College of Surgeons Clinical Congress 2017.

The medical students who practiced on the physical simulator completed the task in an average of 7.9 minutes with a deviation of 3.3 minutes. Those who used the virtual simulator did the task in 13.05 minutes vs. an average of 15.5 minutes for the group that had no practice.

Brain imaging measured activity in the primary motor cortex, located in the frontal lobe. The researchers found that the simulator groups had significantly higher cortical activity than the group that had no training.

“By showing that trained subjects have increased activity in the primary motor cortex when performing surgical tasks when compared to untrained subjects, our noninvasive brain imaging approach can accurately determine surgical motor skill transfer from simulation to ex-vivo environments,” Nemani says.
Preparing for Our Third Century

Capital Campaign launched

Today, Rensselaer is thriving. Demand for a Rensselaer education has never been higher, and applications for admission to our freshman class numbered nearly 20,000 this year. Many of our programs are now top-ranked, and our overall U.S. News ranking once again reached one of its highest levels in the past 20 years.

We are strong because we have a strong vision for ourselves that inspires Rensselaer students, faculty, and staff alike. We operate within the paradigm of “The New Polytechnic,” in which we continue to educate students with deep foundational knowledge, while serving as a great crossroads for talented people across disciplines, sectors, geographies, and generations, who, together, address the greatest of challenges, using the most advanced tools and technologies.

We believe that Rensselaer is poised for even greater leadership in its third century, and will be even more transformative in the world at large.

To ready Rensselaer—the oldest technological research university in the nation—for global leadership in the 21st century, in October, we launched an ambitious capital campaign. Transformative: Campaign for Global Change has three essential pillars:

The first is increasing student financial aid and enhancing the student experience. The cost of the education we offer at Rensselaer—world-class, immersive, and experiential—has outstripped the financial means of many of our students. Our ability to offer financial aid must bridge this gap.

Because we understand that brilliance does not exclusively come in wealthy packages—because we intend to accept the very best students regardless of their socioeconomic background—and because we intend to honor the intensely democratic vision of Stephen Van Rensselaer, who founded this school to place knowledge “equally within the reach of all”—we must add to our endowment to better meet student financial need.

Our second pillar focuses on our faculty. We will use the resources unleashed by the campaign to create new endowed professorships that will allow us to attract and retain the very best academic talent from around the world. We will draw gifted teachers and researchers to The New Polytechnic to do world-changing work in their laboratories and classrooms—and to ensure that our students, working beside them on their investigations, learn at the leading edge of their fields.

Endowed chairs will allow us to expand our tenured and tenure-track faculty to 500, so that Rensselaer can achieve intellectual critical mass, and lead in all crucial areas of research and education that comport with our founding mission, “the application of science to the common purposes of life.”

Our third pillar focuses on our beautiful Troy campus. We must grow, modernize, and equip the campus for continued leadership in pedagogy, research, and student life.

Our goal for the campaign is to raise $1 billion in new resources. I am pleased to report that we are well on our way, with over $400 million already raised from our most generous individual and institutional donors.

At the gala launching the campaign, Trustee John E. Kelly III of the Rensselaer Classes of 1978 and 1980—and IBM senior vice president of cognitive solutions and IBM Research—announced a significant investment in Rensselaer on the part of IBM.

This investment is intended to move artificial intelligence and machine learning into a future in which intelligence will be distributed into almost every piece of technology (indeed everything) we encounter in our daily routines.

This agreement truly represents The New Polytechnic in action, as explorations in artificial intelligence will be conducted across sectors, across disciplines, across generations, and across the curriculum—transforming both the research and the education that takes place at Rensselaer—with the potential to improve the very business of living, around the globe.

Your participation in Transformative: Campaign for Global Change will make an immediate and tangible difference—for our students, for a great university, and for the world. This is a very exciting moment for the Institute—and I am so glad that we all are on this journey together.
Making Connections

If you’ve ever wondered whether the alums reading the magazine ever reach out to other alums, I…

Remembering RAMP

I was reading the fall issue and the article “Fast-Track to a Master’s Degree” by Pam Allen (Fall 2017). When the article said, “The accelerated master’s program has grown every year since its inception in 2008,” I figured I would write in. Back in 1972 I signed up for a program at RPI called the RAMP—Rensselaer Accelerated Master Program. The RAMP program back then allowed you to take up to 21 credit hours a semester. By doing this I was able to get both my B.S. and master’s in mechanical engineering in just four years.

I don’t know if/when the program was terminated. At the Hartford campus they had an accelerated night school MBA where you went every semester including summers and got the MBA in just two years. I think this program was changed.

Thanks for the nice articles. I also liked the “Don’t Fly in 10 Years” commentary. It reminded me how technology has changed since I was in school. Started with a slide rule, graduated with a calculator. The computer came in 1984. When I started they had just dropped drafting at RPI and now we have CAD. Go figure!

Rob Kolp ’76
Ivoryton, Connecticut

Man-Made Fatigue

Lawrence Stoker wrote a very good article on metal fatigue but he didn’t include man-made fatigue (“Don’t Fly in 10 Years,” Fall 2017). In about 1978, the vice president of maintenance for American Airlines developed a new process of removing the engines from the wing. The normal process was lifting the engine by chains attached to the ceiling. He developed a quicker way by tuning a fork lift.

The problem was, every time he used it, it weakened the attachment. The results: In 1979 an American DC-10 taking off from Chicago had an engine fall off and it killed 275 persons on board.

Larry Green ’46
Brooksville, Florida

Co-Terminal Program Valued

I enjoyed the article in the latest Rensselaer magazine about the co-terminal program (“Fast-Track to a Master’s Degree,” Fall 2017). I particularly found it interesting that it stated the program’s inception was in 2008 seeing as I graduated with both a B.S. and M.S. in computer science on the same day in 2000 after only eight semesters.

Mind you, I had 17 semester hours of AP credit when I arrived at RPI and I took a class over one summer, but my senior year was tough balancing my remaining undergrad courses with my master’s project on top of my Air Force ROTC commitments. I recall the program I was accepted to that allowed me to earn both degrees simultaneously being called the “professional student” plan, or something like that. Also note that I was required to take the GRE but was told that it was just a formality because of my undergrad GPA. Needless to say, I didn’t study very hard for it.

I challenge every student to consider the co-terminal program. The experience I gained has helped me tremendously during my career. More specifically it was instrumental in landing an assignment as a professor of computer science at the Air Force Academy just four years after I graduated.

Gordon MacMillan ’00
Stuttgart, Germany

We’d love to hear from you! To provide space for as many letters as possible, we often must edit them for length. Address correspondence to: Rensselaer Magazine, Strategic Communications and External Relations, Rensselaer Polytechnic Institute, Troy, NY 12180; email to alum.mag@rpi.edu; or call (518) 276-6531.
The School of Architecture has been ranked the 13th best undergraduate program in the nation by the architectural research organization DesignIntelligence. This is the highest ranking in the history of the School of Architecture. The DesignIntelligence Quarterly’s annual “America’s Best Architecture & Design Schools” edition is the most sought-after publication in the U.S. for design school ratings. For this year’s rankings, hiring professionals from nearly 2,000 firms were asked to identify programs that are best preparing students for success in the profession. They also were asked to consider 11 design education focus areas. Rensselaer was ranked 6th nationwide in “Engineering Fundamentals”; 9th in “Design Technologies,” “Construction Materials and Methods,” and “Interdisciplinary Studies”; and 10th in “Research.”

“It’s quite satisfying to know that the exceptional achievement of our students and faculty is being recognized nationally,” says Dean Evan Dougis. “I really believe we have one of the premier architecture programs today throughout the country. Given the pedagogical diversity of our faculty, our unique culture of interdisciplinary collaboration, our commitment to the study of architecture as the integration of art and science, our robust study abroad program providing our students with a life-changing cultural immersive experience, and our unwavering commitment to architecture as an important social project, the education of an architect here at Rensselaer is creatively and intellectually rigorous, experimental, comprehensive, and timely in response to a complex and changing world. I am confident we are preparing our students to become future leaders in the profession.”
Brandon Weller’s dream has been to find and hold a meteorite fragment. Weller, who is in his third year of the accelerated physician-scientist joint program with Rensselaer and Albany Medical Center, has been a lifelong rock collector and meteor enthusiast.

“I've been waiting for a big meteor fall for years,” he told Michigan Live. “I've had a hobby for rock collecting and meteorites for as long as I can remember.”

After hearing about a meteor that passed over Michigan on Jan. 16, the future medical-school student hopped in his car and drove 10 hours to the Hamburg Township in southeast Michigan.

Weller is not alone in his love of meteors. Avid seekers follow the American Meteor Society, a nonprofit scientific organization established to encourage and support the research activities of both amateur and professional astronomers who are interested in the field of meteor astronomy. Its affiliates observe, monitor, collect data on, study, and report on meteors, meteor showers, meteoric fireballs, and related meteoric phenomena.

Weller searched for a day and a half with no success. He was told there were other professional meteor hunters searching Strawberry Lake, so he turned his search to that location.

According to Michigan Live, “20 minutes later, Weller saw a black fragment sticking out of the ground and his dream finally came true. ‘It was the best feeling for me,’ he said. ‘I had been waiting to find a meteorite. I had dreams about it. It had been a goal for so long. To search the snow and see that thing sticking out was unreal.’”

The rock, which weighs approximately 60 grams, could be worth several thousand dollars. Weller, however, is not interested in selling. “I'm keeping this one until the day I die,” he says.

Once back on campus, Weller brought the meteorite to Bruce Watson, Institute Professor, and Morgan Schaller, assistant professor of earth and environmental sciences, who measured the composition of a piece of the rock using an electron probe microanalyzer. They determined that the meteorite belongs to a class of meteorites that are about 4.6 billion years old and contain some of the same elements found in the Earth’s molten core.

“I've had a hobby for rock collecting and meteorites for as long as I can remember.”
The Rensselaer campus was awash in red last fall. The typically vibrant colors of fall leaves were complemented by a sea of red banners, T-shirts, posters, and more as the Institute readied for the launch of a capital campaign designed to position Rensselaer for its third century of leadership in research and education.

On October 13, President Shirley Ann Jackson hosted alumni, guests, and campus members at a gala celebration to kick off “Transformative: Campaign for Global Change,” which seeks to raise $1 billion for student scholarships, faculty support, and campus enhancements (see, also, page 4).

At the event in the Curtis R. Priem Experimental Media and Performing Arts Center, President Jackson announced that the Institute has already raised $400 million through the support of alumni, corporations, and foundations.

“With the capital campaign we launch tonight, we are preparing Rensselaer to continue educating the most inventive young people on Earth, well into its third century,” said Paul Severino ’69 and his wife, Kathleen. “It was the Rensselaer culture that made me a good engineer. But more significantly, it was the Rensselaer culture that gave me the confidence needed to take the risks required to start my companies—and make them successful,” said Paul Severino.

The campaign will provide needed resources for Rensselaer to prepare students to address the critical issues of today and the emerging needs of tomorrow.

The campaign has three main pillars: To bridge the gap that exists between student need and available financial aid resources; to realize the Faculty 500, which will attract talented professors whose research and teaching will empower Rensselaer graduates and change the world; and to build out the campus by modernizing the academic, research, and student life facilities that enable the Institute to transform students into the next generation of resilient and inspired leaders.

During Reunion & Homecoming weekend, alumni got to see and hear firsthand how a Rensselaer education is helping to solve global challenges.

At RED Talks, researchers highlighted solutions to societally important challenges where Rensselaer is playing a leading role. RED (Research, Education, and Discovery) Talks topics included climate, AI, the arts, synthetic biology, and more.

During Passport to Rensselaer, alumni were guided through an immersive experience demonstrating The New Polytechnic—with seminars, tours, research presentations, and more showcasing how students and faculty collaborate across disciplines, across sectors, and across global regions to harness the power of advanced tools and technologies to address the complex global challenges and opportunities of today.

In “Impact on the Global Challenges: Rensselaer Alumnae in Position To Create Change,” President Jackson moderated a panel discussion with Rensselaer alumnae who are top executives in major businesses and industry. Participants talked about how they are positioning their companies to address the global challenges—including cybersecurity, data exploration and applications, technology, and advanced materials—and to change the world.
In addition to President Jackson, the panel included Rensselaer Trustee Wanda Denson-Low ’78, retired senior vice president, Office of Internal Governance, The Boeing Company; Rensselaer Trustee Linda Pitzi Jojo ’87, ’92G, United Airlines executive vice president, technology, and chief digital officer; former Rensselaer Trustee Linda Sanford ’75G, executive for The Carlyle Group and former IBM senior vice president, enterprise transformation; and Kristin Ann Seaver ’90, ’98 EMBA, United States Postal Service chief information officer and executive vice president.

“An investment in the Transformative Campaign is an investment in the future of humankind,” says Kobie Boykins ’96, section manager of payload and spacecraft mechanical engineering at NASA’s Jet Propulsion Laboratory. “And the return on that investment is the next disruptive technology or the next thing that creates a whole new market. It could be the capability to clean the air or desalinate water, or something truly science-fiction-y, like creating matter from energy or being able to travel faster than the speed of light. Those are the types of ideas—the types of possibilities—that Rensselaer and this campaign are about.”

“Access to clean fresh water is essential to industry, ecosystems, and life itself. But fresh water comprises less than 1 percent of the water on the planet,” says Rick Relyea, the David M. Darrin ’40 Senior Endowed Chair, director of the Margaret A. and David M. Darrin ’40 Fresh Water Institute, and director of the Jefferson Project at Lake George, a partnership among Rensselaer, IBM, and the FUND for Lake George. “The Jefferson Project is an unprecedented effort to use the most advanced technology to study human impacts on freshwater lakes in a way that has never been done before anywhere in the world.

“We couldn’t execute something as complex as the Jefferson Project without drawing on the interdisciplinary strengths of Rensselaer—the combination of everything from engineering to computer science to the arts,” Relyea says. “An investment in the Transformative Campaign is an investment in those strengths, and an advance on similarly ambitious and necessary projects.”

Investing in academic innovation, we will ensure our curriculum prepares our students for futures that we can only just begin to see. By investing in endowed faculty chairs and their cross-disciplinary research support, we will ensure our leadership in the discovery and application of the latest ideas in science and technology. By investing in campus resources, we will continue to eliminate barriers between people and disciplines, deep our collaborative culture, and make us the model for how intellectual inquiry, civic engagement, and our creative talent can be supported.”

“As we consider the world around us, the stakes are high. The opportunities are clear. The urgency is daunting,” said President Jackson. “It is within your power to set in motion transformative change—not merely in your own careers and lives—but on a larger scale, by joining with Rensselaer to ensure that the most inventive, ingenious, and dedicated young men and women on Earth emanate from our classrooms, laboratories, and makerspaces for generations to come.

“Together, we amplify our efforts to improve the world,” she said. “Together, we set off a cascade of virtuous effects and positive change that will have impacts around the globe. Together, we are transformative.”

In her address, President Jackson highlighted the three pillars of the campaign.

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Gamers of all ages can enjoy a new free app called My Molecularium, a fun, action-packed molecule-building game that challenges players to build a wide variety of fascinating molecules, from H₂O and vitamin C to caffeine and adrenalin.

The action-oriented app is played by launching atoms at target bond sites to assemble molecules of increasing complexity and difficulty. Players aim and launch their atoms by moving their device using innovative laser-guided gyroscopic technology. The object of the game is to create as many molecules as you can in the shortest period of time. Fun facts about each molecule are shared with players, along with an accuracy bonus for each completed molecule. A wide range of achievements can be earned as players advance through the different levels, each with their own challenges.

The app is the latest effort of the successful Molecularium® Project, spearheaded by faculty at Rensselaer and funded by the National Science Foundation and others to excite audiences of all ages to explore and understand the molecular nature of the world around them. “It’s a fun, challenging game for all ages. Everyone can have a great time learning about the structures of a variety of important molecules while they play,” says Richard W. Siegel, founding director of Rensselaer’s Nanotechnology Center and one of the innovators behind the Molecularium Project.

“This game app was the next logical step in continuing to expand our innovative educational productions that make learning about science great fun.”

In addition to the My Molecularium game app, the Molecularium Project’s educational media include: Molecules to the MAX!, originally made for IMAX and other giant-screen theaters, and now available on DVD and Blu-ray and soon to be streaming; NanoSpace®, winner of the Center for Digital Education 2013 Best of the Web award, an online educational amusement park, which includes more than 25 fun, interactive, and educational games, short animated films, and activities; and the digital-dome experience Molecularium-Riding Snowflakes, a 23-minute, award-winning show that introduced the characters Oxy, Carbón, Hydra, and Mel.

My Molecularium is available for free at the Apple App Store or Google Play or at www.molecularium.com/.

“...”
ENTREPRENEURSHIP

Global Serial Entrepreneur Honored

THE CO-FOUNDER and former CEO of digital video brand advertising company YuMe, Jayant Kadambi ’85, M.S. ’86, was selected as the 2017 William F. Glaser ’53 Rensselaer Entrepreneur of the Year. Established in 1990, the award brings the world of entrepreneurship and innovation into Rensselaer classrooms by recognizing successful entrepreneurs and role models who share their wisdom and experiences with students.

A serial global entrepreneur, technologist, and business leader, Kadambi co-founded and was the CEO of YuMe for 12 years. YuMe is a digital video advertising media and software technology company that Kadambi helped lead from inception to its current position as a leading global, publicly held company. He is an author and holds several domestic and international patents in the growing fields of video production, semiconductors, and advertising technology. Currently, Kadambi spends his time as an adviser, mentor, board member, and angel investor to entrepreneurs to help them build, grow, and scale their companies.

Kadambi has more than 20 years of experience in digital media technology, networking, hardware, architecture, and semiconductors. Previously, he worked as a member of the technical staff at AT&T Bell Labs and was vice president of engineering at Netopia. He holds a Bachelor of Science and a Master of Science in computer and systems engineering from Rensselaer.

“Being a proud Rensselaer alumnus, it is a great honor to be recognized by the university with this award,” says Kadambi. “The specific combination of a technical education and leadership skills imparted during my time spent at Rensselaer set the foundation for being able to build, scale, and operate a worldwide data science-based technology company. I hope others’ time at Rensselaer can inspire them to seek entrepreneurship and company building.”

BIOLOGICAL SCIENCES

Tracking the Circadian Clock

Biology dictates that DNA creates proteins that create—among other things—metabolites, the outputs of metabolism. In organisms from fungi to humans, the relationship between these players is heavily influenced by our internal circadian clock, and responds to environmental influences (such as a prolonged day) with implications for industry as well as human health.

“The complexity of this system is enormous; the interactions within a single cell could generate millions of data points,” says Hurley, Rensselaer lead on the project, which is supported by a $3.1 million grant from the National Institutes of Health. “The intricacy is unfathomable by the human mind alone, but computer modeling combined with experimentation can help us to understand this system.”

Hurley, an expert in circadian biology, has built massive data sets that track clock-controlled levels of RNA and protein in Neurospora, a fungus which produces cellulases, proteins useful to the biofuels industry because they break down cellulose in plants.

While the more profound impacts of the research may relate to human biology, the project also may make it possible to boost Neurospora’s production of cellulase, a benefit to the biofuels industry.

The research was funded by Rensselaer, the Jefferson Project at Lake George (a partnership of Rensselaer, IBM, and The Fund for Lake George), and a National Science Foundation Graduate Research Fellowship.
Providing Windows Into the Creative Process

The School of Humanities, Arts, and Social Sciences (HASS) has transformed two cinder-block hallways of the Sage Labs into the Corridor of Creativity, a place where visitors can view the latest student projects and catch a glimpse of innovation in action.

Posters, sketches, and other artwork now grace the walls on the first and second floors of Sage Labs. Sculptures occupy strategic spaces, and postings on the “Wall of Opportunity” invite students to collaborate on startups and other ventures. Once-solid walls now include large windows that compel passersby to pause to watch inventors, animators, and designers at work in studios, classrooms, and labs.

For HASS Dean Mary Simoni, one of the most important results of the redesigned space is the interaction it fosters among students from different disciplines.

“Any student can use any space—woodworking shop, 3-D printing lab, game development studios,” she says. “Now, students in science and technology are working side by side with students in sculpture, building a community around creation and discovery. That’s a beautiful thing.”

The Corridor of Creativity has become part of every admissions tour to introduce parents and prospective students to a lesser-known side of Rensselaer. October visitors—including those on campus for Reunion & Homecoming 2017—saw exhibits from classes including Basic Drawing, Intermediate Drawing, Typography, Visual Literacy, and Design for Global Society.

One poster promoted the Art_X Symposium of Music, Sound, and Mathematics at Rensselaer. Another poster presented “3-D Printing As Humanistic Inquiry,” research led by HASS Assistant Professor James Malazita and Associate Professor Dean Nieusma. The project is funded with a grant from the National Endowment for the Humanities. Still another exhibit paid tribute to the late Pauline Oliveros, distinguished research professor of music at Rensselaer and founder of the practice of “deep listening.”

The story behind the corridor is quintessentially Rensselaer. It begins with a student who came to Simoni concerned about the lack of space to display posters and other artwork to support the academic program. Simoni knew other students shared that concern. She also knew that there simply weren’t enough resources to provide separate space for every program.

She saw a chance not only to turn a problem into an opportunity but also to reinforce what she considers “a philosophical imperative.” Simoni was determined to find a place where students could showcase their accomplishments while benefiting from each other’s differing perspectives.

The solution came to her one morning, during her usual walk from West Lot to her office in Sage Labs. As she passed the cinder-block walls on the first and second floors, Simoni’s thoughts turned to the activity those walls were hiding. “There was so much going on behind them,” she says. “If we could blast through some of those walls and install glass, we could see into the studios.”

From that germ of an idea came a renovation that also provided exhibit space and—with a $500,000 grant from the Lemelson Foundation—established the state-of-the-art Burt Swersey Inventor’s Studio.

“It became a multiyear facilities renovation plan to update, repurpose where necessary, and create more interconnectivity in the entire corner of those two levels of the building,” Dean Nieusma says. “Behind all that cinder block, highly engaged, interactive design work was going on. We made that work visible.

“We took an underutilized space and revitalized it,” he adds. “Instead of plain cinder-block hallways, we have cinder-block halls punctuated with points of excitement, energy, and creativity.”
now grace the walls on the first and second floors

Photos by Mark McCarty
RensselaeR/spring 2018
Amir Hirsa, professor of mechanical, aerospace, and nuclear engineering, and a group of undergraduate and graduate students spent time last fall at Sanford International Airport in Florida—completing an experiment in zero gravity.

“I couldn’t have asked for better people—smarter, more talented, harder-working, or more creative to work with. The ones that weren’t flying were working on their aerodynamics homework in the aircraft hangar,” says Hirsa.

The trip featured the second parabolic flight campaign (the first was in February 2016) for the Rensselaer team, and was in support of an experiment created by the team that will be flown aboard the International Space Station (ISS) in 2019. The purpose of the ISS experiment (the hardware for which is called “Ring-Sheared Drop,” or RSD) is to study the process of proteins aggregating into amyloid fibrils, the same material that forms the waxy substance surrounding and eventually killing the neurons of those afflicted by Alzheimer’s disease.

The RSD gives a unique opportunity to study amyloidogenesis at fluid interfaces, mimicking certain aspects of the physiological scenario. Amyloid fibril formation in proteins is widely studied because of its role in diseases such as Alzheimer’s and Parkinson’s, as well as its promise for advanced materials. In addition to the intrinsically devastating effects of neurodegenerative diseases, these diseases also represent a huge monetary cost in the United States. In 2010, it was estimated that more than 14 percent of the elderly population suffers from dementia and that the cost of care was between $150 and $200 billion annually. The cost is projected to reach $400 billion by 2040.

Zero Gravity Corporation (ZERO-G), the parabolic flight provider for the November 2017 Research Campaign, uses G-FORCE ONE®, a specially modified Boeing 727 airplane. To create weightless environments, the ZERO-G pilots fly the plane in the trajectory of parabolas where in the top part of each arc scientists experience 25 to 30 seconds of weightlessness during which they perform their experiments.

The microgravity environment aboard the ISS is to be utilized to study the biophysics of protein amyloidogenesis. The absence of gravity allows surface tension to provide fluid containment so that protein does not interact with solid walls. Flow effects on protein fibrillation can therefore be studied at fluid interfaces similar to physiological processes. The goal is to advance mechanistic descriptions of fibrillation.

Microgravity is potentially a powerful tool for investigating processes that are sensitive to the presence of solid walls, since fluid containment can be achieved by surface tension. In addition to solid walls, experiments with gravity are also subject to influences from sedimentation of aggregates and buoyancy-driven convection.

The RSD project is in its fifth year; so far, the Rensselaer team has received commitments from NASA totaling nearly $1.5 million and the project has been approved for additional funding until September 2020. The hardware is expected to be on the ISS in early 2019.

In addition to Hirsa, the Rensselaer team included James Young ’12 (M.S., chemical engineering), ’13 (Ph.D., mechanical engineering), lecturer in mechanical, aerospace, and nuclear engineering; aerospace engineering juniors Sean Hurst, Leo Gallo de la Paz, and Patrick McMackin, and doctoral candidate Adi Raghunandan.
Rensselaer Dean Recognized as Steinway Artist

PRESIDENT SHIRLEY ANN JACKSON hosted a reception for Rensselaer alumni, parents, students, and friends at Steinway Hall in New York City on Nov. 15. The evening included a performance led by Mary Simoni, dean of the Rensselaer School of Humanities, Arts, and Social Sciences (HASS), and recognition of Simoni as a Steinway Artist.

According to Steinway, more than 90 percent of the world’s active concert pianists—over 1,600 artists—bear the title “Steinway Artist.” Each owns a Steinway. All prefer to perform on Steinway pianos. Simoni joins contemporary artists including Lang Lang, Diana Krall, and Billy Joel, as well as “Steinway immortals” such as Cole Porter, Sergei Rachmaninoff, and Arthur Rubinstein, in bearing the title of All-Steinway Artist.

In 2016, Rensselaer joined more than 180 institutions on five continents designated as All-Steinway Schools, dedicated to providing the best instruments possible for the study of music.

Rensselaer, the nation’s first technological research university, recently launched a new degree program, the Bachelor of Science in Music. The program will expose students to the art of music in a global context—a form of creative expression that is integrally tied to other arts and technology disciplines.

The new degree is part of a larger campuswide initiative, led by President Shirley Ann Jackson and supported by HASS Dean Mary Simoni, to use the arts to enhance students’ capacity in their chosen majors, from mathematics to biology to engineering.

The program, called Art_X at Rensselaer, infuses education with the arts—by offering more opportunities to study artistic disciplines, like music, while expanding pedagogy and research with arts-inspired approaches to conceptual thinking (read more, page 30).

Simoni’s music and multimedia works have been performed in Asia, Europe, and throughout the United States and have been recorded by Centaur Records, Leonardo Music Journal, published by MIT Press, and the International Computer Music Association. She is the recipient of the Prize in Composition by the ArtNET Virtual Museum and was named semi-finalist for the American Prize in Composition-Chamber Music.

Simoni was joined at Steinway Hall by Kimberley Dolanski Osburn (soprano), manager of operations and administrative services in HASS, and Rensselaer students Aidan Gorby ’19 (saxophones), a biology major preparing for a career in medicine; Alexander Shane Jones ’18 (upright bass), a senior majoring in applied mathematics, with a minor in finance; and Matthew Lamport ’19 (drums), a junior majoring in mechanical engineering.
FOUR YEARS AGO, RENSSELAER AND THE Icahn School of Medicine at Mount Sinai entered into a relationship to promote personalized medicine and medical care through collaborations in education, research, and development of new diagnostic tools and treatments. Several innovative projects on Alzheimer’s disease, cancer, diabetes, and osteoporosis have already emerged from this partnership.

As part of the relationship, the Icahn School recently hosted a health hackathon, supported in part by the Rensselaer Center for Biotechnology and Interdisciplinary Studies, to explore transformative ideas in several areas of healthcare delivery. The event included Rensselaer students, as well as students from Mount Sinai Medical Center, Columbia University, and CUNY, and hospital staff. Rensselaer students were part of all three finalist teams.

Computer science doctoral candidate Angela Su was one of a dozen undergraduate and graduate students who entered the Mount Sinai Health Hackathon. Her team, which also included biomedical engineering student Alagu Chidambaram, is one of three finalists. Finalists were awarded $2,500, and will participate in an innovation “Shark Tank-type” showcase in the spring, during which the finalists will present a five-minute pitch to a panel of entrepreneurs.

Su and her six-member team designed “On track,” a web-based school and socializing tool for pediatric cancer patients. The tool makes it possible for parents and teachers to keep kids connected with their classroom and peers as they undergo treatment.

LALLY SCHOOL OF MANAGEMENT

How Operational Risk Rocked the Financial Sector

How banks respond to regulations and manage risk isn’t always what it seems. Research by Brian Clark, assistant professor of banking and corporate finance at the Lally School of Management—“Risk Shifting and Regulatory Arbitrage: Evidence from Operational Risk” (2017) with Alireza Ebrahim of the Office of the Comptroller of the Currency—studied this concept closely.

The researchers examined the state of the banking industry leading up to and including the financial crisis of 2007-2009, using data collected by regulatory agencies on operational losses incurred by a sample of large U.S. banks. They attribute the drastically increased exposure of banks to operational risk in the years leading up to the crisis to a lack of prudent regulations during this time. This increased exposure then contributed to the severity of the crisis.

Generally, operational risk is seen as the risk of a loss resulting from the failure of a bank’s people or processes. It does not include credit or market risk. Credit risk arises when a bank makes bad loans and market risk arises when it makes poor investment decisions. Operational risk, however, refers to losses that may arise from the way a bank is managed, induced by poor systems and controls that leave it vulnerable to setbacks from activities such as fraud, legal exposure, and business disruptions caused by “acts of God.”

So how important are these losses in the big picture? One public study by the Boston Consulting Group (2017) estimates that approximately $321 billion in fines were paid by North American and European banks in the aftermath of the recent financial crisis. Moreover, authorities estimate that operational risk comprises roughly 25 percent of large U.S. banks’ risk profiles.

Clark and Ebrahim argue that banks amassed operational risk to get around regulations, exposure, a process known as regulatory arbitrage. The authors note that before the financial crisis, regulators considered operational risk benign, so they didn’t closely examine it in financial institutions. This opened the door for banks to increase their exposure over time without having to account for this risk on their books, ultimately allowing banks to become riskier without regulators knowing it.

“Our research explains that operational risk offered a way for banks to leverage themselves in the moment but not have to pay for the consequences until later. Typically, there is a delay between the time of the risk and the financial loss,” says Clark. “For example, banks can increase their exposure by not investing in or maintaining the latest information technology infrastructure or by cutting governance costs such as monitoring of employees. These actions can reduce costs or increase revenues in the short term, but in the long term they may lead to large losses from IT failures or misconduct by unmonitored employees.”

Ultimately, the study found that insufficient regulation prior to the financial crisis allowed banks to make risky operational decisions, which backfired on them during the crisis, thus exacerbating the severity of the crisis.
President Shirley Ann Jackson took part in the World Economic Forum’s Annual Meeting of the Global Future Councils, Nov. 11-12 in Dubai. The annual meeting brought together more than 700 members of the Network of Global Future Councils to shape a better future.

This year’s meeting was the second in the councils’ two-year term. It allowed members to jointly explore ways of facilitating systemic change in critical areas such as health, energy, and infrastructure through breakthrough technologies related to the Fourth Industrial Revolution.

“Scientific discovery and technological innovation are at the core of the solutions to many of the great challenges and opportunities of our time,” says President Jackson, co-chair of the Global Future Council on the Future of International Security. “Universities play a significant role in generating the ideas and sparking the innovations that drive the global economy and sustain our security. It is imperative that universities, business, and governments, along with NGOs, collaborate in charting a sustainable path forward. This gathering of world leaders offered an unparalleled opportunity to set the goals and enhance the interconnections that can help strengthen our institutions as we work to meet the challenges and tap the opportunities before us.”

Cynthia Collins, associate professor of chemical and biological engineering, also participated in the meeting. Collins is a member of the Global Future Council on the Future of Biotechnologies.

“The Global Future Councils provide a unique opportunity for experts from different sectors to step away from our silos and work together to develop and recommend innovative, cross-cutting solutions to global challenges,” says Collins. “In discussions ranging from healthy living and precision medicine to modern industrial biotechnology, the need for multidisciplinary teams and system-level approaches to achieve the desired changes in these critical areas was a recurring theme.”

While in Dubai, President Jackson also hosted a reception for Rensselaer alumni in the area, who are forming a new Rensselaer Alumni Association chapter.

GLOBAL RECOGNITION

WEF Annual Meeting Ponders a Challenging Future

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Rensselaer Ranked 42nd Among National Universities

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RENSSLEAER POLYTECHNIC INSTITUTE ranks among the best universities in the United States, according to the annual list of college rankings released by U.S. News & World Report last fall. The publication’s list ranks Rensselaer 42nd among 311 national research universities. With its overall composite score rising each year, Rensselaer has been ranked as one of the top 50 national universities by U.S. News for the past 18 years.

In addition to the university ranking, Rensselaer’s undergraduate engineering program was ranked 30th in the nation by U.S. News; and the mechanical engineering program was ranked 19th. In the “Great School at a Great Price” category, Rensselaer ranked 31st, continuing a steady rise in that category over the last five years.

Factors contributing to Rensselaer’s top ranking include a student-to-faculty ratio of 13-to-one; 97 percent of faculty who are full-time; strong academic reputation; and high school counselor’s rank.

Underscoring Rensselaer’s long-held reputation as one of the nation’s top universities, the Institute received a record number of applications for the current Class of 2021, including the most ever from females, underrepresented minorities, and international students. The Class represents one of the strongest academically, and most diverse ethnically and geographically, in the history of Rensselaer.

“For nearly 200 years, Rensselaer has provided a radically active form of teaching and learning to students who have gone on to push the frontiers of technology and truly change the world,” says Rensselaer President Shirley Ann Jackson. “Our continued high standing in the U.S. News rankings reflects our dedication to providing an unparalleled educational experience to an accomplished and increasingly diverse student body.”
As the world has grown louder, research scientists have gained extensive knowledge of how to improve the acoustics of interior spaces and block out the noise that hampers workplace productivity, patient care, and learning. Rensselaer has made a significant contribution, with a world-renowned graduate program in architectural acoustics that teaches practitioners and scholars to design spaces with optimal sound quality. Established nearly 20 years ago in the School of Architecture, the program is among the most comprehensive in North America, at a time when boosting sound quality is becoming urgent.

“The need to understand acoustics is more profound than ever,” says Ning Xiang, the program’s director. “As we have more sound and understand how to control and improve the sound, we are making a real difference in society.”

A researcher, educator, and inventor, Xiang is one of just 16 individuals worldwide to win the Wallace Clement Sabine Medal, the field’s top honor. Now, he has edited Architectural Acoustics Handbook (504 pages, J. Ross Publishing), which culls the theory and applications from some of the leading minds in architectural acoustics. The handbook, which includes information not found elsewhere, is geared for use in research, undergraduate and graduate study, and application by acoustics consultants, industry engineers, and recording professionals.

“This reference will play a fundamental role in the sustainable progress of architectural acoustics research and practical applications,” according to J. Ross Publishing. “World-renowned experts in the field from both the research and consulting communities contributed to the 15 chapters covering a wide range of sub-fields including computational modeling, noise, vibration controls, and environmental acoustics in the built environment and around buildings.”

The architectural acoustics program Xiang heads at Rensselaer has educated more than 130 specialists who collaborate on the world’s great concert halls, libraries, airports, corporate headquarters, and university venues. Graduates also help boost health care, education, and workplace productivity by assuring that people in these settings hear the critical information—and not the unwelcome, distracting noises.

Rensselaer students also learn psychoacoustics—how humans perceive sound. The program is currently using a National Science Foundation grant to research how the brain decodes sound.

“In architectural acoustics we are dealing with two sides: the beauty of the sound and the ugly of the sound,” notes Xiang. “Back in the 1960s, noise level averaged 60 or 70 decibels. Now one finds easily 90 or even 100. You have to get rid of the ugly side of the sound if you’re near a highway or an industrial operation, where a lot of activities are.”

“As we have more sound and understand how to control and improve the sound, we are making a real difference in society.”

— NING XIANG
THE ARTS

Holiday Concert Presents
Semi-Staged Version of Peer Gynt

The Rensselaer Orchestra, under the direction of Nicholas DeMaison, presented a semi-staged version of Peer Gynt—the 1867 play written by Norwegian dramatist Henrik Ibsen with music composed by Edvard Grieg—at the 2017 President’s Holiday Concert. The program included best-loved selections from the score Grieg composed to accompany Ibsen’s famous play, which tells the story of the downfall and subsequent redemption of a Norwegian peasant anti-hero.

The production drew on the style of semi-staged orchestral-dramatic performances developed by New York production group Giants Are Small, according to DeMaison, senior lecturer of music in the Department of the Arts.

“We crafted our own 80-minute version of the piece using selections from Grieg’s entire incidental music to Ibsen’s play, and selected scenes from the play that appropriately cut down the narrative while maintaining dramatic continuity,” he says.

The adaptation, which was created by DeMaison, music director; Assistant Professor of Arts Rebecca Rouse, director; and artist Jefferson Kielwagen, theatrical design, unfolded in two acts with an intermission.

During the performance, a narrator led the audience through the sometimes bizarre twists in Ibsen’s narrative, while six puppeteers, or “acting stage hands,” manipulated props and scenery, sometimes with live video projection, to bring to life the characters and situations in the play.

Joining the orchestra for the performance were the Rensselaer Concert Choir, members of the Instrumental Fellows ensemble, members of the student theater group the RPI Players, and soprano Kimberley Dolanski Osburn. The production featured the work of students in the Sculpture II class of Jefferson Kielwagen, who is a lecturer in the Department of the Arts.

“As the type of work pioneered by Giants Are Small is still relatively nascent in the broader artistic world, we see this production as a means to bring the most forward-thinking, technologically engaged concepts in musical-theatrical dramatic presentation to students at Rensselaer,” DeMaison says.

DeMaison is a composer and conductor who has led dozens of premieres of new operatic, instrumental, choral, and multimedia works, described as “consistently invigorating” (New York Times), “spine-tingling” (Feast of Music), and “enchanted” (Seen and Heard International). He joined the Rensselaer faculty in 2013.
A hypertonic grip expander for individuals with cerebral palsy and stroke patients, a chair for autistic students, and an independent lifting device for quadriplegic individuals were the winning designs created by teams of undergraduate students from colleges and universities in the Northeast during the inaugural Engineering Innovation for Society (EIS) student design competition held this winter at Rensselaer.

At Rensselaer, students take on design challenges for industry, service organizations, or entrepreneurs. Working in multidisciplinary teams, and coached by a professor and project engineers with extensive industrial experience, students formulate the problems and conceptualize designs. They work to build prototypes and test their solutions in a fabrication lab with state-of-the-art machining equipment, 3-D printers, and other devices.

With the launch of the annual Engineering Innovation for Society student design competition, undergraduate students from other universities had the opportunity to visit Rensselaer to experience the engineering workplace of the 21st century—and to help people along the way through their designs. This year’s inaugural competition included students from colleges and universities in the Northeast, including Columbia, George Washington University, Parsons School of Design, MIT, Stevens Institute of Technology, the United States Military Academy, University of Buffalo, University of Connecticut, University of Massachusetts-Amherst, University of New Hampshire, Worcester Polytechnic Institute, Yale, and York College of Pennsylvania.

From January 11 to 14, students were assigned to teams and worked on various design projects for individuals who have disabilities, provided by the Center for Disability Services of Albany, New York.

“We have long been recognized as a leader in design, producing the very best engineers for the current workplace,” says John Tichy, tribology expert and professor in the Department of Mechanical, Aerospace, and Nuclear Engineering. “Now we’re expanding our influence, in keeping with The New Polytechnic, to motivate and engage students to address grand challenges, enabling cross-fertilization in new disciplines and with the very best collaborating institutions. Based on our reputation, the undergraduate students from some of the very best schools in the Northeast region came to Rensselaer. We learned from them, they learned from us; and we all made contributions to aid people with disabilities.”

“Using a rapid design paradigm that has been seen in hackathons and makeathons, our primary goal in creating EIS is to bring inventive students to the Rensselaer campus, to introduce them to all aspects of design and prototyping, while also creating a space for them to use our facilities, and work with our faculty and staff in the School of Engineering, to develop engineering solutions to real-world practical problems,” he says.

Student projects—which were mechanical in nature—were evaluated both on conceptual design and prototyping. Prizes awarded included $10,000 to the winning team, $4,000 to the second-place team, and $2,000 to the third-place team.

“Based on our reputation, undergraduate students from some of the very best schools in the Northeast came to Rensselaer. We learned from them, they learned from us; and we all made contributions to aid people with disabilities.”
STEVEN CRAMER, a recognized global leader in chromatographic bioprocessing and the William Weightman Walker Professor of Polymer Engineering, has been named a fellow of the American Association for the Advancement of Science. Cramer was cited for “distinguished contributions to the field of chromatographic bioprocessing, achieved through combined experimental and computational approaches.”

RICHARD W. SIEGEL, the Robert W. Hunt Professor of Materials Science and Engineering and founding director of the Rensselaer Nanotechnology Center, has been elected a fellow of the National Academy of Inventors (NAI). Election to NAI fellow status is the highest professional distinction accorded solely to academic inventors who have demonstrated a prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on quality of life, economic development, and the welfare of society.

JEFFREY JOSEPH has been named commanding officer and professor of naval science for the Navy Reserve Officers’ Training Corps (NROTC) program. He is a submarine officer and joins Rensselaer after having command of the USS Nebraska and USS Memphis. In this role, Joseph will supervise the ethical, professional, and military development of NROTC students to ensure that they are prepared and qualified for commissioning as officers in the Navy and Marine Corps.

APARNA GUPTA, Lally School of Management associate professor of quantitative finance and risk management, has been invited, following a rigorous selection process, to join the U.S. Securities and Exchange Commission in its Division of Economic and Risk Analysis (DERA) as a visiting researcher. She will work on several projects, contributing to or leading the efforts of the Office of Research and Data Services’ Analytics group.

WILL FAHEY, manager of professional and organizational development in the Division of Human Resources, was named the 2017 Pillar of Rensselaer. The Pillar Award, the highest award bestowed by Rensselaer on a member of the staff, is presented annually to an individual who has demonstrated an understanding of Rensselaer’s mission and history, has served as a role model for other employees, shows concern for students and their welfare, and adds to the human dimension of Rensselaer.

JOE CHOW, power grid control expert and professor of electrical, computer, and systems engineering, has been named Institute Professor of Engineering, one of the highest and most prestigious honors bestowed upon a Rensselaer faculty member. Over the past three decades, Chow has been at the cutting edge of electric power systems engineering. His work in modeling and control of large-scale power systems has growing applications in development and maintenance of smart grids. He has published more than 250 papers in technical journals and conference proceedings.

SANDRA NIERZWICKI-BAUER, professor of biological sciences and associate director of the Darrin Fresh Water Institute, has been appointed to the Drinking Water Quality Council by New York State Governor Andrew M. Cuomo. The council will guide New York’s actions to ensure that all communities across the state have access to clean drinking water.

DAVID MENDONÇA, associate professor of industrial and systems engineering, has been elected to serve a three-year term on the Board of Governors of IEEE’s Systems, Man, and Cybernetics (SMC) Society. IEEE is the world’s largest technical professional organization dedicated to advancing technology for the benefit of humanity. IEEE’s SMC Society is a world-leading society for the advancement of theory and application in systems science and engineering, human-machine systems, and cybernetics.

LINDA PITZI JOJO ’87, ’92G, executive vice president, technology, and chief digital officer at United Continental Holdings, the parent company of United Airlines, and T.J. WOJNAR JR. ’80, vice president of corporate strategic planning at ExxonMobil, have joined the Rensselaer Board of Trustees. As chief digital officer at United Continental Holdings, Jojo is responsible for the airline’s digital and mobile presence, including United.com and mobile apps, as well as its technology systems, platforms, and infrastructure. Wojnar was appointed vice president at ExxonMobil in August 2017. Previously, he served as president of ExxonMobil Research and Engineering Company (EMRE), which engages in the research, exploration, and production of crude oil and natural gas. As president of EMRE, Wojnar oversaw more than 3,000 engineers and scientists.

MICHELL TOLLINCHI-MICHEL has been appointed assistant vice president for student transitions. She will collaborate with community partners to ensure high-quality programs and services that will contribute to the successful transition of students from pre-college through graduation. Prior to joining Rensselaer, Tollinchi-Michel was the associate dean for academic enrichment and community initiatives at Barnard College, Columbia University, where she was primarily responsible for the oversight of access and opportunity programs for a diverse student population.

RENSSELAER/Spring 2018
For the first time in Institute history, a Rensselaer graduate has been named head coach of a National Football League franchise. Matt Patricia ’96, defensive coordinator of the New England Patriots with whom he made six trips to the Super Bowl, was named head coach of the Detroit Lions.

In the lead-up to the announcement February 5 that Patricia would lead the Lions, a flurry of articles appeared examining his past accomplishments, upbringing, even his beard. Not one failed to mention that he is, truly, a rocket scientist.

In January, with the ink all but signed on the deal, two reporters from Sports Illustrated visited campus to experience exactly the kind of course Patricia would have taken as an undergraduate. They sat in on a Space Flight Mechanics class in DCC 330, taught by Kurt Anderson, professor and associate dean of mechanical, aerospace, and nuclear engineering.

“Patricia’s reputation as the only rocket scientist coaching in the NFL precedes him,” they wrote. “He graduated from RPI in 1996, earning his degree from the School of Engineering’s Mechanical, Aerospace, and Nuclear Engineering Department, while also suiting up as an undersized offensive lineman for a football team that then played its games on a tiny field a few steps from this classroom (capacity: 1,000).”

During a break in the two-hour class, the reporters spoke with Anderson.

“Engineers are taught to be logical, to look at data, and then find good solutions based on that data,” Anderson said, “and from what I’ve seen on a football field, that is largely what he’s doing, though his system is a little bit more chaotic than the ones I deal with.”

Patricia, who was featured in the fall 2016 issue of this magazine, discovered the
joy of coaching when he served as a graduate assistant to Rensselaer Coach Joe King while pursuing his MBA on campus.

“It was during that year I received my first taste of how thrilling it was to see a player you were helping coach make a fantastic play,” he said. “That feeling—focusing on the players and their potential, not just the plays and plans—never left me.”

He began his rise to coaching fame as a volunteer at Liverpool High School near Syracuse, New York, where he had accepted an engineering job at Hoffman Air and Filtration Systems. After two years at Hoffman, he was offered a position at almost double the salary at Westinghouse. At the same time he found an assistant coaching job—at a salary of $5,000—at Amherst College. After wrestling with both offers, football won out, and his path to the Lions got underway.

After two years as defensive line coach at Amherst, he spent three at Syracuse University as offensive graduate assistant. Next stop: the New England Patriots in Foxboro, Massachusetts.

Patricia had circulated his resume to several NFL teams, and in 2004, the Patriots offered him an entry-level job collecting and reviewing video, and only 24 hours to accept the offer. He did, and off he went to professional football.

Patricia joined the Patriots under head coach Bill Belichick as an offensive coaching assistant. In addition to collecting and reviewing video, he accepted numerous extra tasks and was promoted to linebackers coach in 2006. Six years later he was named defensive coordinator—one of the two highest coaching positions beneath the head coach on an NFL team.

Along the way to his current position, he retained the focus on hard work that began during his days in Troy.

“Many of the traits he displayed at Rensselaer stayed with him and helped make his way to Foxboro,” said his former teammate and past Rensselaer assistant football coach Ray Moran ’95. “Once he sets his mind on something, he stays on track until he succeeds. He was never the biggest of our offensive linemen, but he always found a way to execute plays so that he remained part of our starting lineup. No one could outwork Matthew then, and no one can now.”

Patricia fit in quickly with coach Belichick’s approach to the game. The son of a football coach at the U.S. Naval Academy, Belichick had over the years developed a technical, meticulous approach to designing intricate game plans—something he looked for in his coaching staff. Many of his assistants have gone on to head coaching jobs in the NFL and Division I football, spreading the Belichick coaching gene pool far and wide. Patricia is the latest success story.


A major part of his success, Patricia told Rensselaer magazine, is his family. His wife, Raina, and children Dominic, Dante, and Giamina form a life core that grounds him in what he feels is really important.

“My family has sacrificed so much for me to be able to coach at this level,” he said. “I could not have come this far without them.”

Former Rensselaer head coach Joe King, who led the team for 22 seasons before retiring in 2011, isn’t surprised by Patricia’s success or his approach.

“We saw it right away when he worked with us as a graduate assistant after receiving his degree. He was smart and he was great at absorbing and retaining information, but most of all he knew how to treat people right,” he said. “I am so proud of him and happy for him. And I do think he has what it takes to be a head coach some day.”

And so do the Detroit Lions. Congratulations, Matt Patricia!
Laying the Foundation for a Resilient Power Grid

Power systems experts at Rensselaer are working to make an aging electric grid more resilient. By Jodi Ackerman Frank
LAST SEPTEMBER, Hurricane Maria slammed into Puerto Rico with unrelenting wind and rain that decimated the island of 3.4 million people. The storm wreaked havoc on the entire power grid and left residents and businesses stranded in darkness, cutting them off from the rest of the world.

“The total effect on the economy as a result of this hurricane will still not be known for many months,” says Carlos Vazquez ’80, chief financial officer of Banco Popular, a leading banking institution that serves Puerto Rico and the U.S. mainland.

Vazquez and his wife were in New York when the hurricane hit, although their adult son was on the island staying at the family’s home. Their home was salvageable, but the event left an indelible mark on Vazquez’s conscience.

“We all underestimate the interconnectedness among all the different systems—the electric power system, the communications system, the food, water, and fuel distribution systems—all of these things are much more tightly connected than people think,” Vazquez says. “Invariably, when the power goes out, society stops working.”

The mainland had its own share of crippling power outages in 2017 from extreme weather phenomena—what scientists see as the growing threats of climate change. Hurricane Irma wreaked havoc in Florida, knocking out power for millions of Floridians and others in nearby states.

Unprecedented rain and flooding in Texas from Hurricane Harvey brought parts of that state to a halt. Climate conditions have also been blamed for the deadly California wildfires, which destroyed the cell-phone towers on which the state’s emergency service system depends.

In light of such catastrophic occurrences that have sent dire warnings of what might be yet to come, as well as the need to address pollution and an aging electric grid, there has been an intense focus in recent years, particularly in New York and California, on revitalizing our national power system to ensure sustainability and resiliency.

At Rensselaer, researchers in the School of Engineering are leading this charge in collaboration with a multitude of departments, facilities, and centers across the campus and beyond.

“Energy and sustainability are among the most critical challenges facing humanity,” Dean of Engineering Shekhar Garde says. “Rensselaer researchers are bringing together multidisciplinary perspectives from fundamental electrical engineering, modeling, simulations, and data analytics to networking and communications to help transform a tired and outdated electric grid into a modern, fully integrated smart grid.”

BUILDING A “TWO-WAY STREET”

The national electric grid system that powers the lower 48 states is a complex network divided into three major interconnections, parts of which are connected to the Canadian grid. The Eastern Interconnection serves the region east of the Rocky Mountains and a portion of the Texas panhandle. The Western Interconnection serves states west of the Rockies. Texas largely has its own system, the Electric Reliability Council of Texas. The three interconnections operate independently of one another.

Long-distance transmission lines connected to thousands of power plants carry high-voltage electricity to substations, where transformers lower the voltage for consumption. Renewable energy systems, such as solar panels and wind turbines, are linked to the grid through a network of sensors, smart meters, and other advanced hardware and software equipment.

Despite improvements over the last several years, our 100-year-old grid must be revitalized into a much more resilient system as it takes on the challenges of increasing energy demands and the push to integrate more renewables.

“We know the importance of addressing energy needs without heavy reliance on fossil fuels, with solar and wind power continuing to advance globally,” says Joe Chow, Institute Professor of Engineering, who has specialized in electric power control systems over the last 30 years. “Yet, the core issue of how to increase transmission capacity in a complex network with tens of thousands of transmission lines hasn’t been adequately addressed.”

The electric grid was built as a one-way system to provide electricity to our homes and businesses. But increasing use of solar panels allows consumers to sell excess power to the utilities. This extra electricity is carried back to the substation in the opposite direction, placing big strains on the grid that can halt renewable energy production altogether.

This is what has happened in Hawaii. A few years ago, with the rapid installations of solar panels, residents had to wait months, sometimes years, to have panels installed because the electric grid was simply too full. Now that the state offers incentives for energy storage, residents are encouraged to install energy storage systems as part of the photovoltaic system.

In addition, solar and wind are intermittent energy sources. This creates potential volatility in the power system because electricity generation must be equal to demand at all times.

Any unanticipated voltage fluctuations can lead to brownouts or blackouts. Chow is addressing these and other power system stability issues in collaboration with government, industry, and academia.

As the Rensselaer campus director of the Center for Ultra-Wide-Area Resilient Electric Energy Transmission Networks (CURENT), he is part of a team of researchers, industry
leaders, and national laboratories working toward developing a nationwide or continentwide transmission grid that is fully monitored and dynamically controlled in real time. Rensselaer is a key partner of CURENT, which is led by the University of Tennessee and supported by the National Science Foundation (NSF) and the U.S. Department of Energy.

“The need has never been more urgent to transform today’s grid into a smart grid that promises higher efficiency, greater reliability, and smooth transition of renewable energy sources into a resilient power transmission system,” Chow says.

In one project, Chow is using phasor measurement unit (PMU) data to determine grid performance in partnership with the New York Power Authority (NYPA), the New York Independent System Operator (which monitors the reliability of the state’s power system), and Sandia National Laboratories, with funding from the New York State Energy Research and Development Authority.

PMUs are sensors with special computational capabilities that are located in substations. Advancing and implementing this technology is essential to the foundation of any modern grid. They measure voltage and currents at different locations along the electric grid, using a common time source, such as GPS, to synchronize all the data in real time. This provides a comprehensive picture of an entire interconnection from, say, New York to Florida.

“We are using real-time PMU data supplied by NYPA to design software that will enhance control-system performance when disturbances come along,” says Chow, who developed computer tools for large power systems during his decade-long career at General Electric. “We want to monitor equipment performance continuously so that we can repair a piece of equipment before it completely breaks down.”
IT’S ALL ABOUT STABILITY

“It’s really all about maintaining stability. In the power grid, there are the wires and transformers that transfer power, but having this hardware is not enough. You have to establish stability at each point of the network at all times,” says Jian Sun, director of the Center for Future Energy Systems. CFES is the hub of energy research at Rensselaer with primary foci on renewable energy, energy storage, energy efficiency, and advanced grid control.

Sun is an international authority on power conversion and grid integration of renewable energy sources. About a decade ago, he began developing his Impedance-Based Stability Theory, a method that has laid a foundation for addressing system integration issues related to renewable energy and high-voltage direct current (HVDC) transmission, which include the challenges of harmonic resonance.

Resonance has always been a concern in power systems. However, the high-speed control of power electronics used in wind turbines, PV inverters, and HVDC converters creates a new class of resonance problems that is close to or above the normal electric grid frequency. This type of resonance can lead to extremely high voltage and current harmonics, causing wind turbines, PV inverters, and HVDC converters to disconnect or become damaged beyond repair.

This is exactly what happened in the German North Sea. In spring 2014, a major harmonic resonance between the wind farm and the HVDC converter station at one of Germany’s newly built offshore wind farms fried the filter capacitors of the HVDC converter, cutting off the wind farm for 10 months.

“What happened that year in Germany was a wake-up call to the industry for the new challenges such a system brings,” says Sun, noting that the high-frequency nature of this resonance requires new modeling, analysis, and mitigation methods.

Working with the transmission system operator TenneT and manufacturers, Sun applied his method to analyze the 400 MW system (which generates the equivalent of about $2.1 million in U.S. dollars’ worth of electricity every day when operating at full capacity), identified the root cause of the resonance problem, and recommended changes to the software that damped the resonance.

A year later, China had a similar problem, but the wind-farm installation was about 25 times bigger. While no equipment was damaged, the resonance caused several large generators in nearby thermal power plants to shut down. Again, Sun worked with China State Grid to find a solution, which this time involved wind turbine control.

The challenge is that the makeup of wind turbines and also photovoltaics, both of which consist of semiconductors for power conversion and control, is vastly different from traditional copper-and-iron-based power generators. More important, their controls are still evolving and not standardized.

“Companies want to have a unique product, but at some point, wind turbine and photovoltaic systems will need to be standardized so that utilities know exactly what they are buying beyond a few data sheets,” Sun says. “But right now, we’re not at that point—the technology still needs to evolve.”

In the meantime, Sun’s method addresses this issue by characterizing wind turbines and PV inverters at their grid-connecting terminals using a mathematical model called “small-signal sequence impedance.”
“This model allows companies to protect their intellectual property while enabling utilities and system developers to analyze system behavior, such as stability and resonance problems,” Sun says.

**PROVIDING REAL VALUE AND MAKING A DIFFERENCE**

Energy, Environment, and Smart Systems is one of the five signature thrusts of The Rensselaer Plan 2024 that addresses one of today’s most pressing global challenges—meeting the global population’s energy needs while addressing environmental sustainability.

Numerous centers, labs, and facilities across campus contribute to this research thrust, including the CFES, an Institute-wide center, which was first designated by New York state in 2005 as a Center for Advanced Technology focused on energy solutions. In 2015, it was re-designated for 10 more years. With funding from the state and industry, CFES helps develop energy systems that are sustainable, resilient, and economical.

Other Rensselaer centers also lead energy research in new directions, including LESA—an NSF-funded Center for Lighting Enabled Systems & Applications; the Baruch ‘60 Center for Biochemical Solar Energy Research; and the Center for Flow Physics and Control, to name a few.

A plethora of research leaders—from electrical engineering, computer science, and materials science to aerospace engineering, architecture, and biotechnology—are involved in exciting projects focused on solving specific global energy challenges.

This multidisciplinary, highly collaborative, and data-centric environment for energy research is what drew Luigi Vanfretti ’09 back to Rensselaer as a faculty member last summer from the KTH Royal Institute of Technology in Sweden. Vanfretti, who earned his doctoral degree in electric power engineering from Rensselaer and specializes in cyber-physical power system analysis, sees potential for making a real impact in this area at Rensselaer.

“My research not only requires an environment with ambition, but also talented students to do the research into practice,” says Vanfretti, associate professor of electrical, computer, and systems engineering. “Also, the state’s REV initiative provides so many potential opportunities to contribute to the evolution of our power grid in ways that were not available to me in Europe.”

REV, which stands for Reforming the Energy Vision, was initiated in the aftermath of Superstorm Sandy in 2012 that caused record destruction in New York City. The goal is to transform the way electricity is managed, distributed, and consumed through regulatory changes, incentives, and consumer choice to promote more efficient use of energy and deeper penetration of renewable energy resources.

Vanfretti previously served as special adviser for Statnett SF, the Norwegian electric power transmission system operator. During this time, he developed the Smart Grid Synchrophasor Software Development ToolKit. Archived at GitHub (https://github.com/alsetlab), the ToolKit is a collection of software for building new PMU-related software applications. GitHub is an open-source development platform for any company or researcher who wants to build software and manage projects.

Based on the idea that developers work with mobile operator system toolkits that Apple and Google (for Android) provide, Vanfretti’s repository aims to develop standard-based software for building smart-grid technologies.

At Rensselaer, Vanfretti is building the ALSETLab (Tesla spelled backward, it stands for the Analysis Laboratory for Synchrophasor and Electrical Energy Technology), which uses a real-time hardware-in-the-loop (HIL) system supported by four 32-core computers capable of running several projects at the same time. This way, HIL can test and simulate complex systems based on realistic virtual stimuli using a limited amount of real power network equipment. Vanfretti sees this as a cyber-physical system, which he believes every student in this field needs to learn about and contribute to.

“The physical engineer also has to be a cyber-physical engineer,” says Vanfretti, who emphasizes the importance of a digital curriculum for power-grid engineering to complement the basic principles of engineering with a toolbox of digital know-how.

With the influx of technological advances and expertise, government investment, and an increasing sense of urgency among the public at large, Vanfretti believes that a truly robust smart grid is within reach.

Such a smart grid, that is monitored fully and accurately in real time, will include a new generation of electric-power technologies that seamlessly integrate abundant renewable energy resources, smart metering, microgrids, energy storage, and even electric vehicles, for a much more robust and reliable power system. “There is a lot of excitement at Rensselaer, with new ideas and technologies taking the stage to address the critical state of our electric grid,” Carlos Vazquez says. “Thinking differently about how our grid can endure is a sure path to a more reliable and cleaner electric grid.”

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**WITH THE INFUX OF TECHNOLOGICAL ADVANCES AND EXPERTISE, GOVERNMENT INVESTMENT, AND AN INCREASING SENSE OF URGENCY AMONG THE PUBLIC ...A TRULY ROBUST SMART GRID IS WITHIN REACH.**

LUIGI VANFRETTI ’09

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RENSSELAER/Spring 2018 29
Art_X at Rensselaer encourages students and faculty to seek inspiration where art and science intersect.

By Elisa Gallaro

The university known worldwide for its connection to some of history’s most impressive bridges is building a different kind of bridge—between art and science.

With Art_X at Rensselaer, the Institute is encouraging students and faculty to join the likes of Michelangelo, Leonardo da Vinci, Benjamin Franklin, Albert Einstein, and Steve Jobs in seeking inspiration where art and science intersect.

A campuswide teaching and learning initiative, Art_X is designed to help students discover the art and science in technology, as well as the science and technology in art. The initiative emphasizes the importance of incorporating artistic concepts throughout the curriculum. Team-taught classes bring together artists, scientists, engineers, architects, and business experts to help accomplish this objective.

“The idea is for students to understand, very early in their academic career, that the questions we all need to be asking are complex and span multiple disciplines,” says Mary Simoni, dean of the School of Humanities, Arts, and Social Sciences (HASS). “Art_X creates a framework where it is OK—even desirable—to traverse boundaries to ask those questions.

“We prefer to think of it as ‘disruptive pedagogy,’” she adds. “We’re disrupting the way you think about how you learn. We’re going to do it early, in your first year, and we will do it over and over again.”

Simoni is an ideal champion for the program. Her research—into digital signal processing, sound synthesis, algorithmic composition, and the design and programming of new interfaces for musical performance—sits at the intersection of the performing arts, computer science, and engineering. She knows firsthand that “artists can learn how to advance their art by adopting some of the methodologies used in the sciences and vice versa.”

Exemplifying The New Polytechnic

The Institute is not alone in appreciating the essential connections between the arts and sciences. Other leading universities have introduced interdisciplinary programs that explore the intersections of what previously were considered disparate disciplines. What sets the Institute apart is an innovative, comprehensive approach that recognizes Art_X as fundamental to President Shirley Ann Jackson’s vision of Rensselaer as The New Polytechnic.

A new way of thinking, teaching, learning, researching, and doing, The New Polytechnic breaks down barriers and fosters unprecedented levels of collaboration across disciplines, institutions, and regions. Jackson introduced the construct in January 2013, when she delivered the ERA International
An early Art_X project featured a multimedia theater work, "Navigating and Negotiating Sound Architectures of the Night," which involved abstract architectural models placed on a glass interface table. The table enabled audience members to interact with the objects and become part of the performance.
Students need to acquire new skills for this digitally interconnected environment, including the ability to ‘translate’ between and among disciplines and sectors. They must learn to operate effectively and ethically in virtual communities, immersive environments, and in blended worlds.

— President Shirley Ann Jackson

Foundation Lecture at the Royal Academy of Engineering in London. She shared the concept with a larger audience the following year in an op-ed column, “The New Polytechnic: Preparing to Lead in the Digital Economy,” in U.S. News & World Report. In that column, she noted the obligation to “prepare the next generation to succeed and lead in this new world.

“Students need to acquire new skills for this digitally interconnected environment, including the ability to ‘translate’ between and among disciplines and sectors,” Jackson wrote. “They must learn to operate effectively and ethically in virtual communities, immersive environments, and in blended worlds.”

As an Institutewide “highest priority,” Art_X plays a vital role in fulfilling that obligation.

The initiative is spearheaded by a steering committee appointed by Provost Prabhat Hajela. Chaired by Curtis Bahn, professor and HASS associate dean for graduate studies and research, the committee includes representatives from each school and the Curtis R. Priem Experimental Media and Performing Arts Center (EMPAC). In addition to Bahn, members are Ashley Ferro-Murray, associate curator, EMPAC; Jeff Durgee, associate professor, Lally School of Management; Michael Oatman, associate professor, School of Architecture; Peter Persans, professor and associate head of the Department of Physics, Applied Physics, and Astronomy; and Ge Wang, John A. Clark and Edward T. Crossan Professor of Engineering.

Committee members serve as a combination of ambassadors, matchmakers, and mentors. They promote Art_X, help connect faculty from different disciplines, and model ways to incorporate Art_X into existing coursework. It’s a challenge made easier by the fact that Rensselaer is the ideal setting for an initiative of this nature and scope.

Few universities can match the combination of capabilities available through EMPAC and the Center for Biotechnology and Interdisciplinary Studies (CBIS). “EMPAC presents a unique opportunity and resource to explore the concepts of Art_X in a dynamic, living, artistic laboratory,” Bahn says.

Steering committee members also have the support of exceptional faculty. Many are researchers/artists, who personify the principles of Art_X. Some took to the stage in fall 2015 to help celebrate the launch of the initiative.

A Musical Introduction

HASS and CBIS co-sponsored the launch event, which consisted of two concerts, two weeks apart. Michael Century, a pianist, composer, and professor of new media and music in the Department of the Arts, organized and produced the concerts in collaboration with CBIS faculty. Each concert featured three performances. Each performance opened with a discussion exploring the link between music, science, and technology.

Steven Cramer, the William Weightman Walker Professor of Chemical and Biological Engineering, spoke about improvisation in music and science. Then the accomplished pianist drove the message home by performing jazz piano selections.

Sergei Nirenburg, professor and department head, Department of Cognitive Science and professor, Department of Computer Science, is an accordionist, composer, arranger, and singer. He routinely performs and records with the Golfstrom quartet. At an Art_X concert, Nirenburg discussed borders and transformation in music and language before performing with Golfstrom bandmate Bobby Kendall on bass. Rensselaer colleague Marjorie McShane, associate professor of cognitive science and computer science, accompanied them on French horn.

Other Rensselaer presenters and performers included Century; Rob Hamilton, composer, performer, researcher, software designer, and assistant professor of music and media in the Department of the Arts; Mattheos Koffas, the Dorothy and Fred Chau ’71 Career Development Constellation Professor in the Department of Chemical and Biological Engineering; and Zach Layton ’17, composer, curator, artist, and Ph.D. alumnus from the Department of the Arts.

Since the launch, Art_X has increasingly been incorporated into the curriculum, research projects, lectures, seminars,
EMPAC recently debuted “wavefield synthesis,” a unique new system that explores the relationship between sound and space. This type of innovation is an example of Art_X at Rensselaer.

Michael Century, pianist, composer, and professor of new media and music, organized and produced two concerts, in collaboration with CBIS faculty, to launch Art_X on campus.

Performances, and other presentations. The impact of the initiative has also extended beyond the campus, to the surrounding community.

Traditional courses—such as Physics I, Physics II, and Honors Physics—have introduced sound and music examples because of Art_X. A HASS inquiry course, Introduction to Music and Sound, examines the physics and acoustics of sound across cultures.

The Department of Chemistry and Chemical Biology has added an art forensics track, and the Department of Mathematical Sciences offers a seminar in the Art and Science of Mathematics. Earth and Sky, an elective in the Department of Physics, Applied Physics, and Astronomy, requires students to provide artistic interpretations of course material.

Special projects include a May 2016 collaboration of students from the schools of Architecture, HASS, Science, and Engineering. A multimedia, black box theater work performed in EMPAC Studio 1, “Navigating and Negotiating Sound Architectures of the Night” involved 92 abstract architectural models, placed on a glass interface table designed to produce computer-generated images and sound. The table enabled audience members to interact with the objects and become part of the performance. A technical system, built specifically for the project, tracked the location, orientation, and movement of the objects and used the data to create large-scale projections and musical scores.

The project was led by Ted Krueger, associate professor of architecture; Pauline Oliveros, distinguished research professor of music (now deceased); and guest artist William Seaman, professor of art, art history, and visual studies at Duke University. Consulting scientists were Jonas Braasch, architectural acoustician, associate professor of architecture, and director of the Center for Cognition, Communication, and Culture; and James Hendler, Tetherless World Professor of Computer, Web, and Cognitive Sciences, and director of the Rensselaer Institute for Data Exploration and Applications (IDEA). Funding was provided by the Chris ’49 and Marcia Paris Jaffe Program in Art, Music, and Architecture.

Expanded Efforts

Arts Ph.D. candidate Maria Michails brought Art_X to Albany’s South End neighborhood in April as part of a STEM outreach effort that used art and technology to engage children in environmental issues. Michails invited kids to build, decorate,
and drive remote-controlled toy rovers equipped with small, low-cost sensors to collect data on air quality in their community. Before building the rovers, the children heard from a New York State Department of Environmental Conservation scientist, who explained the difference between molecular sizes of air pollutants. The kids also deconstructed discarded toys to learn about the cradle-to-grave life cycle of electronics and their plastic shells.

“This knowledge all came together when the children made their air-quality sensing rovers,” Michails says. “The children took popular electronic toy trucks and gave them a much more useful function—that of sensing air pollution, temperature, and humidity.

“It wasn’t just about cool electronic boards and flashing lights,” she adds. “The children had to come up with creative solutions to problems, all the while thinking about how to do this aesthetically to draw others into the work emotively. The children understood why they were making the rovers and experienced the conflicting tension of having to use electronic technology—a contributor to the problem—to learn about their environment.”

Michails sees long-term value in this multidisciplinary approach, which encourages children to tap their analytic, creative, and tactile skills. They learn to “put their hands to work in many ways

**Few universities can match the combination of capabilities available through EMPAC and the Center for Biotechnology and Interdisciplinary Studies. “EMPAC presents a unique opportunity and resource to explore the concepts of Art_X in a dynamic, living, artistic laboratory.”**
— Curtis Bahn

and think more expansively about problem solving—to see the ‘why’ and the ‘how’ when making decisions,” she says.

For the spring 2017 semester, the Department of Chemical and Biological Engineering and the Department of the Arts partnered to produce artistic, digital images that captured the essence of chemical and biological engineering. Students from Associate Professor Kathleen Ruiz’s Intermediate Digital Imaging course created three canvases that were displayed on the walls of the Ricketts Building. At first glance, the images appeared to consist of circles representing several unrelated objects. When viewed via a smartphone, using the LayAR augmented reality app, the objects came to life, mimicking the act of cells merging into one.

In fall 2017, Rensselaer hosted its first major Art_X symposium, showcasing music, sound, and mathematics. Keynote speaker was internationally recognized composer and researcher Gareth Loy, whose address focused on “A Theory of Music Interest.” The daylong event also featured Rensselaer faculty from the Department of the Arts, EMPAC, the Department of Science and Technology Studies, and the School of Architecture. They presented research on topics including musical composition based on spectral analysis, the use of Markov chains for generative musical form, live computer coding for musical performance, and interactive music driven by the analysis of 3-D character physics in game-play.
A new bioarts lab, sponsored by CBIS and HASS, is among the most tangible examples of the concerted effort to bridge the arts and sciences. Located at CBIS and spearheaded by Arts Professor Kathy High, the new lab will support research conducted by faculty and graduate students. The lab also will be used by students enrolled in the Bioarts Academy, a course expected to be launched in 2018.

The Art_X Interdisciplinary Seminar (AXIS) series presents lectures and discussions examining the intersections of science, engineering, business, and art, as well as projects and initiatives of Art_X at Rensselaer. A joint effort of the Department of Science and Technology Studies, the Department of the Arts, the Center for Materials, Devices, and Integrated Systems (cMDIS), the Center for Deep Listening, and the Art_X Steering Committee, AXIS helps students and faculty recognize the connections between the arts and sciences and become more comfortable breaking down old barriers.

“We’ve had great success bringing together researchers in the arts and sciences whose work examines similar issues from different points of view,” Bahn says. “The synergies exemplifying Art_X emerge naturally in the discussions that follow.”

“Questioning, seeking, and critical reasoning all focus on obtaining the truth. They are the tools that carry civilization forward. We are training the leaders of tomorrow. We have a responsibility to equip them with these tools.”

— Mary Simoni

From Discomfort to Leadership

Without question, Art_X will support new discoveries in virtually every discipline. But perhaps the greatest discovery will be the importance of appreciating—and even embracing—differences. In Art_X courses, students who otherwise would have little reason to interact with classmates outside their major will learn side-by-side with peers from other departments and schools. That interaction will shape students long after they leave Rensselaer.

“Students learn from each other, and these classes are designed to take advantage of that,” Simoni says. “Students have enough interaction that they are learning from each other’s perspectives. More importantly, in this day and age, they are learning to value differences. They see others thinking differently and they realize it’s not right or wrong—it’s different and it has value.”

At first, many students will be uncomfortable. But over time, Simoni expects most students not only to adjust but also to appreciate the multidisciplinary experiences, find them intellectually, emotionally, and socially fulfilling, and recognize their role in strengthening and sustaining society.

“Questioning, seeking, and critical reasoning all focus on obtaining the truth. They are the tools that carry civilization forward,” Simoni says. “We are training the leaders of tomorrow. We have a responsibility to equip them with these tools.”
AN ECONOMICS LENS ON HEALTH CARE

NEW ECONOMICS PROFESSORS AT RENSSELAER ARE USING MATHEMATICAL AND STATISTICAL TOOLS TO STUDY TOPICAL ISSUES THAT REFLECT THE INSTITUTE'S EMERGING FOCUS ON HEALTH CARE AND BIG-DATA ANALYTICS.

BY JANE GOTTLIEB
JASON HUH, A YOUNG ECONOMIST RESEARCHING AMERICAN HEALTH CARE FOR HIS DISSERTATION, READ A GOOD DEAL ABOUT MEDICAID EXPANSION. He noticed that no one had yet examined whether the sweeping reform had influenced the location of new medical practices. It stood to reason that financial incentives would bring more care to high-poverty areas, but Huh wanted to see for himself. He focused on dental care because of its impact on overall health.

Huh’s research, which has been accepted for publication at the *Journal of Health Economics*, found that the number of dentists in poor counties rose 12 percent from 2006 to 2013—that’s three more for every 100,000 individuals. The shift, he noted, came mainly from recent dental school graduates, signaling, perhaps, an emerging pattern of care for underrepresented Americans.

“Coming up with the right health-care policy is really tough and I hope to contribute to making better policies,” says Huh, who recently earned his Ph.D. in economics from the University of Illinois. “I have the quantitative and programming skills and the background in health-care policy to provide rigorous evaluations of various policy interventions that people can use.”

Huh is one of four economists who joined the Rensselaer faculty recently to add a more multidisciplinary perspective and to collaborate with the engineering and science departments on campus. They are teaching a cluster of new courses that reflect the Institute’s emerging focus on health care and big-data analytics, and on building interdisciplinary areas such as behavioral economics and economic policy.

Housed in the School of Humanities, Arts, and Social Sciences, economics has been taught at Rensselaer for more than half a century. The program has built leaders in areas related to innovation, econometrics, and environmental economics. Faculty are widely published and are members of influential economics organizations. The program also has continuously evolved to address front-burner methodological and economic policy challenges.

Now, the department is introducing upper-level electives in health economics, behavioral economics, the
economics of government regulations, applied game theory, and the econometrics of big data. A focus on energy economics is being considered next.

“Economics is a social science that has always played an integral part in shaping policy,” says Chad Stecher, another new Rensselaer economics professor. “We are following in the footsteps of generations of economists who use mathematical and statistical tools to study topical issues.”

If a drug or screening is known to save lives, he and his colleagues ask, how can a medical practice get more patients to take their pills and get tested? What are the consequences, intended or not, of raising the minimum wage or enacting other laws to improve economic conditions? How can data be used to identify war veterans at highest risk for PTSD? At what point should your competitor’s prices influence yours? And, how have economic policies brought about the technology that has transformed society?

“We want to understand how the fundamentals of economics drive markets for technology, and the behavior of businesses, individuals, and governments,” explains Vivek Ghosal, who is the new head of Rensselaer’s economics department and the Virginia and Lloyd W. Rittenhouse ’35 Professor of Humanities and Social Sciences.

Ghosal came to Rensselaer in fall 2016 from the Georgia Institute of Technology to expand the program’s research agenda and refocus the curriculum so a broader spectrum of engineering and science students are trained in economics methodology and policy. He notes that the ramp-up is happening as Rensselaer emphasizes a new way of teaching, learning, and researching that crosses disciplines and academic programs.

“Rensselaer is talking about the ‘New Polytechnic’ being used to solve the big societal problems, health- and energy-related challenges, and our other national issues,” Ghosal says. “The economics department wants to be players in that game and we think that with our new faculty, research expertise, and our new courses, we will succeed.”

**IT WAS THE CALIFORNIA SMOG IN THE EARLY 1960S THAT HAS BROUGHT US, NEARLY FIVE DECADES LATER, THE TESLA, GHSAL SUGGESTS.**

It started as the build-up of automotive emissions in the Los Angeles Basin was making people sick. Businesses suffered. The socio-economic problem led to the California Clean Air Act, and later the U.S. Clean Air Act of 1970, which set limits on emissions. Now, automakers had to come up with a way to meet those standards. The result, after many efforts: the introduction of the catalytic converter in 1975.

“Fast forward: the catalytic converter improves and brings a lot more innovations. Emissions regulations get even stronger, not just in the U.S. but also in Europe. Carbon, sulfur, and nitrogen have to be controlled,” says Ghosal. “Then you get alternatives, the markets and technologies evolve, and then you get Tesla and its battery technologies, which provides a defining solution to many of the emissions problems. If you think of it, these technological breakthroughs were because of socio-economic problems and subsequent economic policy and regulation.”

From his childhood in India, Ghosal was fascinated by cars and eager to understand the development of various models and technologies, the companies that built them, and the market outcomes.

He made his fascination his career. Ghosal left India to study econometric modeling, data analytics, and firm strategy. He earned a Ph.D. from the University of Florida before teaching at several universities and working for the antitrust division of the U.S. Justice Department. He came to Rensselaer after teaching at Georgia Tech for 15 years.

An expert in the economics of regulation and antitrust, Ghosal has lectured at several dozen universities globally, and given executive education and training lectures throughout Europe, Asia, and South America. He has been an economic adviser for the Organization for Economic Cooperation and Development in Paris. His current interests include competition and innovation in automotive markets, aspects of health care and innovation related to the markets for pharmaceuticals and medical devices, and environment and energy. And he can give example after example of how his fields are central to manufacturing, government policy, health care, and business.
For Jianjing Lin, the field beckoned as she studied business in college at home in China. Studying pure finance was not as interesting as the broader roadmap laid out by economics.

“I remember the first concept I came across was about how human subjects make rational decisions and how to incentivize them,” says Lin, who joined the Rensselaer economics faculty in the fall, following postdoctoral work at Tulane. “It’s about resources, allocation, and how to maximize what we have. The logic is kind of beautiful.”

Lin earned her Ph.D. in economics at the University of Arizona, satisfying her academic interests and desire to come to the United States. She specialized in health-care economics and industrial organization. For her dissertation, she looked at the slow shift many hospitals are making from paper to digital record keeping—a perfect application, she believes, for Rensselaer students to explore.

Among other things, she identified a steep learning curve for older doctors, who become less efficient when they are not given proper training in the technology. Lin also found that while digitizing records can increase hospitals’ ability to share information with doctors and insurance providers, there is a potential downside: “If a hospital can exchange information, their patients can easily switch to other hospitals. And a hospital will lose patients,” notes Lin, who is teaching applied game theory and introduction to econometrics. “The most popular technology isn’t necessarily the one that’s best for a business. I hope that is something my students can apply.”

HEALTH CARE, A TOPIC WOVEN THROUGH RENSSELAER’S NEW FOCUS ON ECONOMICS, NOW REPRESENTS THE LARGEST ECONOMIC SECTOR IN THE UNITED STATES, Ghosal notes, accounting for 18 percent of the U.S. GDP.

Interest in the field has, of course, been fueled by the contentious partisan debates in Congress. But also, Ghosal points out, it is such a rich area of study because there is so much information and data that can be leveraged to improve health-care delivery and human health.

Twenty years ago, he says, the medicine was often there but not the data now available on an individual’s genetics, eating habits, the environment they live in, and lifestyle choices. So while people with diabetes were once all given similar drugs or diagnostic tests, today the details about a given patient can inform a far more personalized plan of care. Also, the data gives economists a lot more to work with to understand issues related to cost-effectiveness, insurance policies, treatment patterns, physician and patient networks, and policy effectiveness.

“If you’re very good at economic modeling and econometric analysis, you can take all this data and try to model and forecast...”

“We want to understand how the fundamentals of economics drive markets for technology, and the behavior of businesses, individuals, and governments.”

VIVEK GHOSAL
how health-care businesses and networks should be run better, or how two different individuals can be treated differently for the same disease,” says Ghosal.

With numerous academic programs and research partnerships across disciplines, Rensselaer has escalated its dedication to health care. A team of computer scientists is developing a system that would enable consumers to use computing to learn more about their own health. World-renowned lighting experts are exploring ways to use light to reduce stress, while biomedical research scientists develop a test to detect autism and predict diseases. Students are engaged in these efforts. And Rensselaer’s affiliations with Mount Sinai and Albany Medical College help students tie technology directly to medicine.

Ghosal is eager to integrate economics into these efforts. The growth of advanced technologies and availability of massive amounts of data, he notes, have also brought a rise in economics sub-specialties that are drawing young scholars eager to shape policy and practice.

The four new economics professors at Rensselaer have diverse research interests, but they share expertise in various aspects of health care. Their work ranges from research that looks broadly at health-care systems, to work that centers on patients, innovation and economic policy.

Chad Stecher, who earned his Ph.D. at UCLA, looks closely at people, including what makes us decide to take or not to take medicine that is known to save our lives.

The prominence of his field, behavioral economics, was made clear recently when Richard Thaler was awarded the Nobel Prize

“IT’S ABOUT RESOURCES, ALLOCATION, AND HOW TO MAXIMIZE WHAT WE HAVE. THE LOGIC IS KIND OF BEAUTIFUL.”

JIANG JING LIN
in economics for his work, which looks at human actions that fall outside economic theory. Among his many accomplishments, the American behavioral economist is credited with documenting the so-called endowment effect, whereby individuals value an item more once they physically possess the item.

“There are many situations where economic models describe behavior accurately,” explains Stecher, who draws from Thaler’s work in his teaching and his research. “But there are other cases where that is not true and we see people doing things economists call ‘irrational.’”

To research his Ph.D. on medication adherence behavior, Stecher traveled to Uganda and Tanzania, where AIDS is still an epidemic and adherence to treatment in many regions is low. Failure to take the medicine, he explains, allows the disease to mutate and grow still more difficult to treat.

Stecher and his co-author employed incentives to promote adherence. Specifically, all individuals who took the AIDS medicine were entered into a lottery that made them eligible for small prizes such as umbrellas or pens conditional on maintaining proper adherence to their medications. The prizes acted as both a reward and a monthly reminder to show up for treatment.

“We saw a 20 percent improvement that persisted six months, through the end of our intervention. We feel we built a habit that persisted,” says Stecher, who will return to those countries next year to introduce his technique to a larger population.

Stecher is hopeful that the approach has promise for people closer to home, who he believes are more likely to take medicines and undergo preventative screenings when they get phone calls and other reminders from their doctors’ offices.

His colleague, Jason Huh, also looks forward to continuing his research, on the impact of Medicaid expansion. Now that he has seen a growth of dental offices in poor areas, he would like to study the impact on the location of new physicians’ practices.

Like his colleagues, Huh chose economics because it allows him to apply data to humanity. After just a few weeks into teaching health economics and econometrics of big data, he was impressed by his students’ ability to grasp the concepts and apply it to their fields.

“The students are mainly engineering majors and when I explain economic concepts, it’s brand new for them,” Huh says. “Sometimes, I use terms without thinking about it that we economists use all the time, like ‘opportunity costs’ and ‘decreasing marginal utility.’ I’m learning that I have to rephrase it. And then they get it right away.

“There’s learning happening on both sides,” he says, “It’s been a lot of fun.”
Making an Impact for Rensselaer

The Rensselaer Alumni Association provides crucial support for the campaign

IN OCTOBER, THE OFFICIAL launch of Transformative: Campaign for Global Change was celebrated during Reunion & Homecoming weekend (see, also, page 8). Among the more than 800 stakeholders who gathered were members of the Rensselaer Alumni Association (RAA) Board of Trustees. The RAA is providing crucial support for this important campaign through its programs and initiatives.

Transformative: Campaign for Global Change will lead us to the 200th anniversary of the Institute’s founding, and position Rensselaer for its third century of leadership in education and research. The campaign emphasizes three pillars: Bridging the Gap between student need and available financial aid resources; The Faculty 500, which will attract and empower talented professors whose research and teaching will empower our graduates and change the world; and Building Out the Campus, by modernizing the academic, research, and student life facilities that enable us to transform students into the next generation of leaders.

The RAA has already undertaken significant work in support of the first pillar of the campaign—supporting student scholarship. In 2016, the RAA launched a student scholarship initiative through which alumni may directly assist today’s students. The endowed fund at Rensselaer, established with a gift of $250,000 from the RAA, is used to financially support scholarships for worthy and needy undergraduate students. The inaugural recipient of the RAA Scholarship was Jocelyn McConnell ’21, a mathematics major from St. Johnsbury, Vermont. The scholarship was announced in October 2017 at the RAA Awards dinner.

At the ceremony, RAA President Kareem Muhammad ’01 said, “This scholarship was established by the generosity of the RAA and our founding donors, and recognizes the need for technically educated people who will serve the betterment of mankind through the ‘application of science to the common purposes of life.’ The fund recognizes Rensselaer as a leader in providing an excellent and rigorous technological education—preparing its students to contribute to a better world.”

“Attending the RAA Awards dinner was my first introduction to the amazing network of alumni here at Rensselaer,” said McConnell. “I am proud to be a future alumna, and thankful for the support in accomplishing my goals from those who came before me.”

As Rensselaer moves toward its bicentennial in 2024, the RAA will continue to make an impact through financial support of important campus initiatives, a concern for and dedication to today’s students and campus life, and a commitment to improving and adding value to the alumni network. To learn more about the RAA’s programs and how you can get involved, visit alumni.rpi.edu/raa.

To learn more about Transformative: Campaign for Global Change, visit transformative.rpi.edu. If you have questions, contact raa@rpi.edu or call (518) 276-6205.

RAA Scholarship recipient Jocelyn McConnell ’21
NOMINATE A DESERVING VOLUNTEER FOR AN RAA AWARD
Do you know alumni or alumnae whose volunteer work for Rensselaer is worthy of recognition? Nominate them for one of the RAA’s annual awards! The program recognizes alumni contributions in every area of volunteer work. For criteria and information on how to submit a nomination, visit alumni.rpi.edu/RAAawards, or contact alumni@rpi.edu or (518) 276-6205. Nominations are due May 25.

DON’T MISS OUT ON ALUMNI PROGRAMS!
Most alumni programs and services are advertised via email and social media—including Reunion & Homecoming. Help us continue to “go green” and make sure you don’t miss out on any of the exciting events and benefits offered exclusively to Rensselaer alumni. Write to alumni_update@rpi.edu, or visit alumni.rpi.edu/ gogreen with your email, social media user name, and updated contact information.

WORLDWIDE TRAVEL PROGRAM
Visit exciting destinations with people who share your interest—fellow Rensselaer alumni. Upcoming programs include a Mississippi River cruise, a tour of the Amalfi Coast, and a luxury cruise to Greece. Go to alumni.rpi.edu/travel for a complete listing of upcoming trips, or contact program coordinator Michael Wellner ’64 at captmike46@aol.com or (212) 486-3064.

REGIONAL CHAPTERS WELCOME NEW STUDENTS
In the summer months, alumni chapters across the country will be welcoming our incoming class and their families to Rensselaer. Chapters host a wide range of programs, where new students meet alumni and current students, and have their last-minute questions answered before they travel to Troy. Visit alumni.rpi.edu/chaptersendoffs this summer to see what is planned in your area.

STAYINGCONNECTED

Save the Date!
Reunion & Homecoming: September 27-30
COMING BACK TO RENSSELAER FOR AN IMMERSIVE CAMPUS experience that will demonstrate the exciting paradigm of The New Polytechnic. Join with classmates, teammates, Greek brothers and sisters, family, and friends for what is sure to be an extraordinary weekend. Rensselaer is especially excited to welcome back the great Class of 1968, who will celebrate their 50th Reunion.

The weekend will feature academic and school-based programs such as seminars, tours, research presentations, and more, that will showcase how faculty and students collaborate to address the complex global challenges of today. You will also enjoy student performances and other special programs.

Reunion & Homecoming is for all alumni, but of special note are the classes ending in 3 or 8, who will celebrate milestone Reunions. Greeks can take advantage of the weekend to gather for dinners, barbecues, and to celebrate anniversaries. Many athletic teams will bring together former athletes for friendly competition and to meet and cheer on our current teams.

Visit the website at alumni.rpi.edu/reunion for a hotel listing, volunteer opportunities, preliminary schedule, and to tell your friends if you plan to be there!

Upcoming programs include a Mississippi River cruise, a tour of the Amalfi Coast, and a luxury cruise to Greece. Go to alumni.rpi.edu/travel for a complete listing of upcoming trips, or contact program coordinator Michael Wellner ’64 at captmike46@aol.com or (212) 486-3064.

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EVENT CALENDAR

2018

APRIL

12 Rensselaer Trustee John E. Kelly III ’78G, ’80Ph.D., will host a fireside chat featuring Rensselaer President Shirley Ann Jackson and MIT President L. Rafael Reif at the IBM Watson Health global headquarters in Cambridge, Mass. Contact alumni@rpi.edu or visit alumni.rpi.edu.

17 Rensselaer Global Game Changers Series: The New Polytechnic Takes on Global Challenges, Princeton, N.J. Join President Shirley Ann Jackson and distinguished thought leaders in the fields of earth sciences and energy for a fascinating panel discussion and networking. Contact alumni@rpi.edu or visit alumni.rpi.edu.

23 Rensselaer Global Game Changers Series: The New Polytechnic Takes on Global Challenges, Washington, D.C. Join President Shirley Ann Jackson and distinguished thought leaders in the field of cybersecurity for a fascinating panel discussion and networking. Contact alumni@rpi.edu or visit alumni.rpi.edu.

MAY

2 Inaugural West Coast Scholarship Gala. Half Moon Bay, Calif., at the Ritz-Carlton. Gather with members of the Rensselaer community to celebrate our commitment to student scholarship. Contact alumni@rpi.edu.

JUNE

4 Let’s Go Red! Golf Outing, Friends and fans of Rensselaer athletics are invited to the annual outing at The Country Club of Troy. Contact Sachi Vines at enas@rpi.edu or (518) 276-4855.
In the mathematical sense, Zero Input = Zero Output. Let us hear from you. —Herb Asbury ’45, asburyhi@aol.com

Fred Grob received a letter and a photo from George Johns. George's architectural practice grew to 50 architects in six offices plus five other successful companies (in interiors, development projects, etc.). Two of his standout projects include (1) winning the ASHRAE national competition for the most energy-efficient school in America, and (2) sharing a contract with Nigeria's largest architectural firm to design the country's first pentagon for the entire military, and a national education technology center that included all TV, radio, media, and a national library.

George also had a distinguished military career, serving in WWII and the Korean War. A USMC captain and fighter pilot, he flew over 250 combat missions in four combat tours and is the recipient of four Distinguished Flying Crosses and seven Air Medals. During the Korean War his plane crashed in the mountains and his squadron assumed he had perished. However, he was rescued, and spent four months in the hospital and was listed as missing in action. In 2003 he was recognized by the Naval Aviation Commandery with the John Hen-ry Towers award for "his courage and love of our country." He was the only USMC Reserve officer to have received this honor.

George was close friends with Bob Jaros, and they, along with their wives, enjoyed a dinner a few years ago where they shared many laughs reviewing past escapades. He sent a photo of four couples enjoying the graduation ball at the Crooked Lake Hotel, June 10, 1949.

If you would like to submit news for the class notes, send your submission to alumnimag@rpi.edu.

Bill Statesir (ChE) had a 35-year DuPont career with assignments in New Jersey and Texas. In 1985 he retired in Texas and worked in realty until 1991. He moved into a retirement complex in Portland near Corpus Christi with his wheelchair-bound wife, Helen, five years ago. He sent me this Hurricane Harvey report:

"Bob, thank you for thinking of us. We evacuated to San Antonio to our son’s home for five days. Then we came back to Portland and stayed with our daughter for four weeks when they got power. Our retirement home had quite a lot of water damage and a lot of the roof blown off. They installed a new roof on the whole place and installed a lot of new flooring and rugs. Also a lot of Sheetrock that had to be replaced. We have been back two weeks and had to put all the furniture back in place and put everything away that was piled in a heap in the middle of the floor while they painted the walls. No losses of anything, thank goodness. It was like moving into a new cottage. Our health seems to be about the same. Hope that you are fine. See you at the 70th Reunion!"

Bill’s reunion reference is to the October 2018 celebration of the 1948 charter of the Delta Phi Chapter of Alpha Chi Rho of which Bill was charter president. He and freshman Church II roommate Dick Moshier (ME) (d. 2016) were prime movers in the formation of a local fraternity, Phi Delta Rho, which went national with AXP. Starting in 1988, 10-year celebrations of the charter have been held with very high attendance from all years and especially by charter brothers. Out of 26 charter brothers, only five survive as of Oct. 2017.

The 1988 gathering resulted in the formation of what became known as The Vintage Crows, which included all brothers as of June 1953, totaling 50. Varying numbers from this group enjoyed intermediate reunions every two years at locations conducive to golf at first and history/culture later. The wives were included, of course, and many good friendships were established. Snail and email newsletters kept everyone up-to-date. Biographies were shared before the 1988 meeting and updated as a booklet in 2002.

This association has been especially rewarding to me as I have had the pleasure of visiting 24 of these brothers at their homes during my travels by car, my airplane, or RV. Many of these visits involved multiple days as well as multiple visits. They included meeting children, grandchildren, siblings, and friends. This activity encompassed 12 states or provinces from Nova Scotia to Florida, California, and Alaska. Eleven brothers, mostly with wives, have visited our home, some with overnight stays. Your contribution to this news is eagerly sought. Don’t procrastinate; my next deadline will be the month after you receive this issue. How are you? Do you get together with other classmates? Something beats nothing. —Robert L. Pfeiff ’50, vincnous@aol.com

Bob Pavan received the Albert Fox Demers Medal at the RAA Awards Dinner held during Reunion & Homecoming weekend in October. The Demers Medal is the second highest award bestowed by the alumni association.

His citation begins: "Robert J. Pavan understands firsthand the importance of providing Rensselaer students with the necessary resources, so they might have the same opportunities that a Rensselaer education afforded him. As a result, our students reap great benefits from his exceptional altruism."

Bob attended Rensselaer on a four-year alumni scholarship. He credits his Rensselaer experience as the dawning of his professional success. In 2002, in a remarkable act of giving back, he and his wife, Barbara, initiated a scholarship fund, which supports graduates of his alma mater, Brooklyn Technical High School.

Over the years, Bob has served Rensselaer in many capacities, including president of the Rensselaer Chapter of Long Island, board member of the RAA, and phonathon volunteer.
After earning two bachelor’s degrees and a master’s degree from Rensselaer, Bob later earned his doctorate at Harvard. He went on to serve on the faculty there. Now retired, his career path included work as a structural engineer, real estate entrepreneur, venture capitalist, and recipient of a Fulbright Research Fellowship.

Bob, congratulations on a much deserved honor.
—Fred Williamson ’51, fwill@comcast.net

—1952—

We celebrated our 65th Class Reunion on October 12-13, 2017, with the following 15 classmates attending: Howland (Bud) Adams, Charles Ammann, Frederick Beverlein, Reyman Branting, Alan Conners, John Crush, Harry (Bud) Hovey, Walter Johnson, Alfred Krause, William Lillis, Charles (C.J.) Nager, Arnold Silver, Paul Totta, Robert Sy, and John Winter, along with some wives and other guests.

Bill Lillis, who was co-captain of the lacrosse team, and Bud Adams, who was the equipment manager, sat at the same table and had a great time discussing their roles during RPI’s fantastic lacrosse years. At our class dinner, John Crush gave a tribute to our deceased classmates. Later, we all had an opportunity to discuss briefly (some less briefly than others) what we got out of RPI but the highlight of the evening was our guest speaker, Dr. Mary Simon, dean of the School of Humanities, Arts, and Social Sciences (HASS), Mary became an honorary member of the Great Class of 1952 when she donned one of our commemorative golf shirts. Our dinner closed with the singing of our alma mater along with the a capella group Duly Noted.

John Margenot phoned C.J. Nager after Reunion and said he has been mayor of Greenwich, Conn., for 10 years. John was the elected vice president of the Class of ’52.

If you have any news before the next issue—probably Fall 2018—please send it to me as soon as possible, but no later than May 1, 2018. —Harry (Bud) Hovey ’52, bud@ujb.com

Frank Cesare (B.S. Chem., Ph.D.) attended the weekend with me. He has six children, eight grandchildren, and while at Univeral for 40 years, accumulated 14 patents in organic chemistry. The evening included a beautiful dinner at the Curtis Priem ’82 (EMPAC) Experimental Media and Performing Arts Center and a concert by the RPI student orchestra.

Bill Glaser’s Entrepreneur of the Year award went to Jayant Kadambi ’89 ’86 (B.S., M.S.) as founder and former CEO of YUME Corp. It is a digital video advertising media and software technology company. The award is based at the Lilly School of Management.

One of the highlights of the weekend included the “Red” Talks. We listened to five short discussions on current technology such as “Listening to the Climate of the Earth,” “Architecture Acoustics and Music,” “Big Data Exploration,” “Synthetic Biology,” and “The State of AI and Cognitive Sciences.” Amazing and stimulating!

An excellent book that I recommend is Chief Engineer by Erica Wagner. It is the story of Washington Roebling (Class of 1857) and the family history. See page 71 in particular.

A poem by our poet laureate Michael Rose: “Why.”

The young ask “Why?” Why do nations fight for “face”? Risking our entire race? Why can’t people live in peace? Why can’t war and turmoil cease? Why do some get rich and some stay poor? Why do those who have fight for more?

Why do people hate their brother? Why not learn to trust each other? Why do we waste nature’s grants to improve our circumstances? Why do cities rot from blight? Why can’t mankind do it right? The young ask “Why?” Until they’re old…and die.

Remember the September 2018 alumni weekend celebrating our 65th Reunion. —Arthur Goldstein ’53, agaent@aoel.com

—1954—

Miki Fedun ’81 sent word that his father, Basil Fedun, passed away in August. Basil was a retired hydrodynamicist and torpedo control specialist who worked at Gould/Westinghouse/Northrop Grumman. Miki says his dad was an eternal optimist, always at the door with a smile, a warm embrace, and a Slavic kiss on the cheeks.—Bob Meyers ’54, bmeyers@aol.com

—1955—

Susan and Bill Barbash moved recently to a retirement home in New Palz, N.Y., and are enjoying their new lifestyle. “It reduces isolation.” Bill contribuu...
ues his longtime practice of taking courses at the Marist College Center for Lifetime Study. He also works at getting some regular physical exercise.

Bill Headden lives on two golf courses, one in Washington and one in Arizona. He usually plays regularly, often with his wife, but has lately been sidelined with a detached retina. “It’s like looking through a fish bowl. It pretty much guarantees that you won’t be doing much for six months.” Their life in the San Juan Islands is ideal for boating. Bill recently replaced his sailboat with a motor craft that sleeps two. “I’ve had a lot of boats.” He also keeps busy with gardening, yard work, and reading.

Berdj Kalustyan was a serial entrepreneur, founding half a dozen businesses in diagnostic management, computer leasing, chiropractic, hospital exercise equipment, and a computer maintenance company with offices in 50 states. He retired 10 years ago. “I’ve sold my businesses and downsized everything including my health. I’m just trying to stay alive. I’ve had 17 operations in 20 years.” He and Alice sold their house on the New Jersey shore and now divide their time between Palm Beach, Fla., and down-sized quarters in central NJ. Berdj keeps busy tracking investments. “I spend half the day in front of the computer and half the day doing whatever my wife tells me to do.”

John Lukacz no longer works as a starter at his golf course, but he still plays golf three or four times a week and works out at a health-care center. Except for visits to their son in San Diego and their daughter in Maryland, he and his wife no longer travel much. “I did my traveling in the Navy.” John and I reminisced about many of our classmates, and he hopes to attend our 65th Reunion in 2020.

Fred Musker has moved from Florida to North Carolina to be near his son and daughter. He stays active as a business broker, plays some golf, and enjoys reading history. Fred also paints in oil and watercolor and has exchanged works with another class painter, Willy Hick. Another activity is alternating running and walking. “I have trouble with my hip but I keep doing it anyway.” Fred and Becky have raised their grandson, Chase, acting as legal guardians until he turned 18 last fall.

After a Navy career that included service in the Vietnam War, Winslow Oakes and his wife worked for more than 30 years as independent distributors of Christian books along the West Coast and in Hawaii. “The business went by the wayside after the 2008 downturn decimated private Christian schools.” They continued to collect and distribute books on a volunteer basis. “It used to be a business ministry, but the back end has also been good.” Win also reworks jewelry into Christian forms and donates it. His wife, Fran, died three years ago, and he now lives with his daughter, son, and granddaughter. “I’m in fairly good health and taking care of myself. I am well cared for and well distracted.”

Irving Paris still works in his architectural practice—“whatever comes in the door.” He does mostly forensic work, which requires keeping up with many changes in building codes. Fortunately, these are listed on the internet. He also tends his two-acre lawn: “I try to sit on the mower.” He and Myrna were preparing for a Mediterranean cruise when we spoke last fall. They also enjoy reading. “We can buy used books for a dollar, read them, and pass them along to friends.”

I learned from his son that Bob Tewell died in February 2017 after bouts with leukemia and prostate cancer. Bob had taught courses in electrical engineering and control systems at RPI for eight years before a 32-year career at Lockheed Martin, where he worked with astronauts on the Gemini and Apollo programs.

After a career in the petroleum industry Charles Viens has lived in a retirement home in South Hadley, Mass., for 19 years, having moved there when his late wife suffered from ALS. He was an avid golfer until a bout of pneumonia in December 2016. “I’m still on oxygen; I don’t know if I’ll ever get off. My golfing buddies have gotten me to go out with them once a week, sitting in a cart, but not swinging a club. It’s certainly changed my lifestyle. I used to go to lots of concerts and activities.” He feels that entering the retirement home has been the right move for him. “I think a lot of people wait too long. They have been very helpful here in my rehab.”

Paul Vinett writes: “I played on the RPI baseball team, along with Frank Chiarelli and Abby Moore. I still enjoy telling people that I played with two All-Americans. After “Wow!” comments I tell them they were hockey All-Americans on the RPI NCAA ’54 championship team. Those hockey games were the greatest. I played the drum in the Pep Band, and we sat on the center line with our girlfriends (my wife).” In a 40-year career with Central Hudson Gas & Electric, Paul served in several management positions and on national committees dealing with power system protection. He has been battling melanoma since 2012. “Thank God I was able to get into a clinical trial at Sloan Kettering. They saved my life.”

De. Marvin Warshay died in July after battling pancreatic cancer and Parkinson’s disease. He had retired after 36 years with NASA in Cleveland, having served as chief of their Electrochemical Technology Branch, leading the development of phosphoric acid fuel cell power plants, and receiving their Exceptional Service Award. He then worked for 14 years as a consultant to the fuel cell industry. He authored/co-authored over 40 technical reports on advanced energy production and conversion.

—John Schmidt ’55, theschmidts2@hotmail.com

—1956—

Another six months have passed and I am still mobile but could use some new knees. I and my wife of 59 years spend six months in Vero Beach, Fla., where I am still trying to find my swing in golf. I added to the website information about Sam Heffner’s death and the memorial program held at RPI. Check it out at—isgriggs@wiscsite.com/rpi-class-of-1956.

If you are interested in old bridges and old bridge builders, you can Google Structure Magazine and click on “Archives” and type in “Griggs” in the search box and a long list of articles I wrote comes up. I have had articles in that journal on a semi-regular basis starting in 2004.

I started my passion for history when teaching at Union College in the early 1980s and in the restoration of a Whipple Bridge on campus. Squire Whipple was an 1830 graduate of Union. That got me interested in the history of Union. I determined I knew almost nothing of the history of RPI except that it was the oldest school of engineering in the English-speaking world. I also knew that a Roebling had built the Brooklyn Bridge. I then read up and wrote upon the history of RPI. My first article was titled “Amos Eaton was Right.” You may remember the chant that “RPI was RPI when Union was a pug.” Well, it turns out that Union was founded in 1795 almost 30 years earlier than RPI. Union also instituted a scientific curriculum in 1829, six years before RPI instituted a civil engineering program. So why the chant started I know not, but it doesn’t seem to be true.

Jerry Reinert, our class president, writes: “It’s been two years since our 60th Reunion. As our class president it was wonderful to welcome all of you who attended. In ‘only’ three we will celebrate our 65th, and I truly hope that we have as great a turnout to that one as we did to the last one.

“One of the most important alumni ever of ‘Old RPI,’ who was a trustee for 30 years and chairman of the RPI board for 15 of those years, is our classmate Sam Heffner, for whom the alumni building, which he donated and built, is named. Sam attended and spoke to us at our 60th Reunion. Unfortunately he passed away only a few months
after that great event; he is never to be forgotten.

“I would like to suggest again that the Class of 1956 purchase ... in October. 

CLASSNOTES
Rensselaer/spRing 2018  47

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vertical control for the many contractors that soon
plant. We kept very busy providing horizontal and
a sprawling addition to its aluminum production
Ed Woerner
engineer. Classmate
and career. He wrote: “My first job after graduation
finally got him to send me an email about his life
I talked with
Peter Wayner

I got a note from Ken Jordan telling me about
his 60th wedding anniversary. He married Pat
Michelle who was a neighbor and classmate of
my wife in Troy. He retired from Westinghouse in
1994 and lives in Richland, Ore.

Peter Wayner
sent me an email telling me he received an
Exceptional Technology Achievement Medal from NASA on August 3 at the Johnson
Space Center in Houston, Texas. The award was
for research done on the International Space Sta-
tion on a special heat pipe designed for micro-
gravity. The research contract, which ended at the end of
2016, was through the Chemical and Biological Engineering Department at Rensselaer. He told
me, “I am now officially retired.” He presented a
seminar titled “Using Interfacial Phenomena in Microgravity and Ig”

I got an email from Crispin Hall telling me he attended some of the 2017 Reunion activities. He
sat with Peter Wayner, John Hudson, and Bruce
Laumeister at the campaign launch dinner. John
Hudson was honored at Saturday’s luncheon for
his years of service to the Track & Field Team. Cris
told me that John had coached 23 All-Americans
and three NCAA champions over the years. John
and Cris were co-captains of the track team during
our senior year.

I got a call from Ed Woerner who told me he was
terrible at email. He still runs a company dealing
with spare parts for elevators and escalators and is
still an active handball player. In fact he won the
United States Handball Association doubles title,
still an active handball player. In fact he won the

Our 60th is over, but we’ve already started plan-
ing our 65th with our first committee conference
call on November 17. We had 62 classmaters and
40 wives and special others for ’57’s 60th events,
Thursday evening’s RAA Awards Dinner. Of spe-
cial note: Rex is the 8th member of the Class of ’57
to receive that meritorious alumni service award.

The highlight of the four days was the ’57 Class
Dinner at the Albany Marriott, Saturday night.
After opening remarks by Rex and Carl Thurnau
and a prayer by Bud Linder, Dave Brunell
gave a toast that was warm, insightful, and a great
reminder of what the four years at RPI represented
and how that has influenced our journeys of the past 60 years. Toward dinner’s end, Doug Hasbrouck
described our new Class of ’57 Spectrum Award,
and presented the inaugural certificate to our
first winner, Ryan Touzjian ’19, an Aero/ME
student (see photo). Ryan had received his check
for $2,500 at the end of the spring semester.

Our class again demonstrated its generous support
for RPI through both the Annual Fund, Spectrum,
and other special gifts. For the 16-month class gift
period that ended in October, 173 donors from our
class gave a total of $1,099,250. As of mid-Novem-
ber, the Spectrum fund stood at $184,150, with
72 donors. In November, the committee voted to
increase the target for Spectrum, setting the new
goal at $150,000 by Dec. 31, 2018. Your continued
support will be deeply appreciated by the commit-
tee, and by future student awardees.

The first of two special guests was Glenn Brown
’54, our 1953-54 Grand Marshal, who reminisced
about our class, reminding us of our antics at Fresh-
man Camp at Lake George in September of that
year. The second special guest was Dr. Shirley
Ann Jackson, Rensselaer’s president, who gave our
’57 gathering and its class a very warm welcome, noting
what we had accomplished since ’57. She
congratulated us on our 60th Reunion and on the
obvious pride we have shown as RPI alums. John
Fisher, on behalf of the class, then recognized Buzz
Campbell for his many years of writing the ’57 class
column, and Doug Hasbrouck for his very vigor-
ous and unstinting work in much of the organizing

Doug Hasbrouck ’57 presented the Class of ’57
Spectrum Award to the inaugural recipient of the
$2,500 scholarship, Ryan Touzjian ’19, a
mechanical and aeronautical engineering major,
at the class’s 60th Reunion dinner in October.

1957—

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for our 60th Reunion and for the many years of his efforts on behalf of our class and the Institute.

Our signature event was a “Conversation with RPI’s Student Pioneers About RPI & Tomorrow With ’57.” It was a panel of four student leaders from Red & White, the RPI student ambassadors group. The panel included Gavin Allcorn ’19, LaurenDean ’18, Hannah Dean ’18, and Ryan Kirk ’19, with the assistance of Killah Borchers, the R&W adviser, and Buzz Campbell, as moderator. All agreed that this event was an excellent exchange of student views on their RPI experiences, and from us as we looked back on our own RPI and life experiences. It also generated some lively ’57 advice as we looked back through our own “rearview mirrors.” At the end of the panel discussion, Laurel Dean presented a special plaque to Margie.

I received a sad note from Jeri Laskowski. Leo Las-
kowski, her husband and best friend of 50 years, passed away in July 2016. I had last heard from Leo in 2015, a few months after our 55th Class Reunion in 2014. Leo, an aeronautical engineering graduate, was a proud brother of Chi Phi, and member of the RPI Athletic Hall of Fame.

Leo had three careers—27 years at Xerox, 33 years in the U.S. Navy, retiring with the rank of captain, and 15 years as director of facilities with the Wemans Ladies PGA tournament.

In addition to Jeri, he was survived by two sons, two grandchildren, a sister, and a brother.—John Lindsay ’59; bntcards@gmail.com

Every once in a while my life as a correspondent takes a very interesting tack. I read in an article that one of our classmates, Richard Chutter, received a patent for an improvement in sailboat technology. A resident of Maine, he has been sailing from an early age. His innovation lifts boats above the water thus reducing the drag. A simple idea but a difficult one to implement.

After his days at Rensselaer, he served in the U.S. Navy and then worked at Texas Instruments, GE, and the U.S. Department of Transportation. An interesting and rewarding career.

Sadly, after I wrote this, I learned that Richard passed away in August after a long illness.

After reading Richard’s achievements, I am reminded of how many of us served in the military after our college days. Now, of course, it is very different. I wonder if our country is better off with our volunteer service members or whether we college guys balanced the career guys. If you have an idea or a story, please write.

Stay well, old friends.—Bill Blanchfield ’60; bblanchfield@hsettlement.com

In January 2017 Chico Christopher ’70, a member of PiKA, died. He had worked with Troy Architecture Practice (TAP) for 46 years and was loved for his appreciation of the importance of urban agriculture, sustainable landscape, and the urban tree canopy. In essence he was a master gardener for the environment of Troy. He championed an arboretum project at RPI that funded and planted seven trees along Fifth Street that came to be known as the PiKA Arboretum because each tree honored a different class of fraternity brothers. With Chico’s too-early death, a group raised some funds and with RPI’s permission placed a plaque and tree in front of the Green Building on the knoll overlooking the old football field in early November.

Dennis Fitzgerald represented the Class of 1961.—Brian McManus ’61; brianh44@yahoo.com

Ben Kroup sent the following lyrics to a ditty that he and others in Phi Kappa sang during keg parties to the tune of “From the Halls of Montezuma.”

“Ben Kroup...sent the following lyrics to a ditty that he and others in Phi Kappa sang during keg parties to the tune of “From the Halls of Montezuma.”

“It’s time to fill my inbox with updates. Please send me a note so that I can share your news in the next issue.—Jack Titley ’63; rpe63@specialops.com

Jack Piela wrote in to say that he recently got back from a European vacation that included a riverboat cruise from Budapest, up the Danube to Vienna, and then through a series of canals and locks to connect to the Rhine, with several other stops including Heidelberg and Cologne, and Amsterdam. He found the trip wonderful, but Amsterdam a disappointment. Jack had stayed in Amsterdam in 1980 when he was on assignment to the European Space Agency, but feels today that it has
On the Bookshelf:

RECENT BOOKS BY RENSELAE R ALUMNI AUTHORS

Technically Together
Taylor Dotson ’15 • MIT Press, 2017

In his book Technically Together: Reconstructing Community in a Networked World, the author examines a range of systems, organizations, and infrastructures—from suburban sprawl and smartphones to energy grids and “cry-it-out” sleep training for infants—and considers whether they contribute to the atomization of social life or to togetherness and community vibrancy. He argues that technology could support multifaceted communities if citizens stopped accepting the technological status quo and instead demanded more from their ever-present devices.

Taylor Dotson, Ph.D. ’15, is assistant professor of social science at the New Mexico Institute of Mining and Technology.

Biomedical Mass Transport and Chemical Reaction
Gerald Saidel ’60 et al. • Wiley, 2016

Biomedical Mass Transport and Chemical Reaction is intended for advanced undergraduates and graduate students, especially in chemical and in biomedical engineering. A major objective of this textbook is to integrate engineering principles with relevant biomedical applications at the cellular, tissue, organ, and whole-body levels. With this book, students learn step-by-step how to develop models and analyses associated with state-of-the-art medical diagnostics and therapeutics.

Gerald M. Saidel ’60, Ph.D., is a biomedical engineering professor at Case Western Reserve University.

Pediatric Emergency Medicine
Shelley Asher ’96 et al. • Cambridge University Press, 2018

Pediatric patients are a unique subset of emergency patients, making up about one-quarter of all emergency department visits. Textbooks regarding the care of pediatric patients are almost universally organized by organ system, which does not facilitate an efficient diagnosis. Taking a case-based approach, this book is arranged by chief complaint, using real patient scenarios to help the reader work through the inductive and deductive reasoning needed to assess, evaluate, treat, and disposition pediatric patients with urgent complaints.

Shelley Asher ’96, M.D., is assistant dean for graduate medical education at Albany Medical Center.

not improved. The city was dirty and it looked as if the residents didn’t take pride in their environment. Trash and...
—1966—

After a long career in transportation engineering, Howard Moody is an active retiree. He graduated from RPI with a BSME degree. After one year with GE, he entered the Army. He graduated from Infantry Officer Candidate School in 1968, spent a year in Washington in Korean Language School, and was posted to Korea as an intelligence officer. He left the Army in 1970 and worked for the Washington Gas Light Company for six years while earning an MSME from George Washington University. Then he began a long career in transportation engineering, focusing primarily on the freight railroads that were undergoing a renaissance as a result of government deregulation in the late 1970s. Howard made major technical contributions in safety, efficiency, telecommunications, and train control, completing the last 23 years of his career in systems engineering with the Association of American Railroads, retiring in 2012.

In retirement, he is active in Rotary, is a Master Gardener, and has done some traveling, the latest of which was a trip to Normandy with two Chi Phi brothers. Howard and his wife, Sandra, have three children and five grandchildren and reside in Leesburg, Va.

Lester (“Ken”) Goodwin is currently living in Coventry, R.I. Ken earned a B.S. in EE from RPI, and initially was hired by General Dynamics’ Electric Boat Division, in Groton, Conn. He designed circuits for their nuclear submarine programs. This period was a particularly sensitive phase of the underwater military rivalry with Russia, which he could only describe as a “very interesting period.” Ken later went on to manage a successful family firm, L.K. Goodwin Inc., which manufactures structural steel and material handling equipment. He is married, and his two sons have joined him in the business, which he continues to operate. In his spare time he enjoys tennis, and especially his collection of water-craft, which he keeps at his lakeside home.

Richard Hooper, a brother at Alpha Chi Rho, studied information technology at Rensselaer, which at that time was probably called data processing. He well remembers the long nights in the Amos Eaton building, waiting to compile and execute COBOL (or was it BASIC?) programs using punched cards, with one card per line of source code. When I told Rich that I was looking up at my ceiling, waiting to compile and execute COBOL (or was it BASIC?) programs using punched cards, with one card per line of source code, he well remembers the long nights in the Amos Eaton building, waiting to compile and execute COBOL (or was it BASIC?) programs using punched cards, with one card per line of source code. When I told Rich that I was looking up at my computer and passing control to execute COBOL (or was it BASIC?) programs using punched cards, with one card per line of source code, he well remembers the long nights in the Amos Eaton building, waiting to compile and execute COBOL (or was it BASIC?) programs using punched cards, with one card per line of source code. When I told Rich that I was looking up at my computer and passing control to execute COBOL (or was it BASIC?) programs using punched cards, with one card per line of source code, he well remembers...

—1967—

Michael Goldfinger (B.S. ’67, B.Arch ’68): “I recently retired after a 43-year career that started after leaving RPI. As an officer in the U.S. Navy Civil Engineer Corps, I served as resident officer in charge of construction at the Naval Ordnance Laboratory, White Oak, Md., where I oversaw the construction of several large unique research facilities, including one to test the aerodynamics of Navy aircraft flying at several times the speed of sound. With the wind-down of the Vietnam War, I took advantage of an early out and left active duty to pursue a career in architecture.

“I remained in Washington, D.C., working for several architectural firms and passing the architectural registration exam. I hold licenses in Maryland and Virginia. I accepted a position in the U.S. Department of Justice, serving as the head of the agency’s space planning branch. During the 12 years at Justice, I earned an MBA from the University of Maryland, and promptly left government service.

“During the next few years, I joined a communication company as construction manager responsible for the terminals and repeater stations supporting the firm’s fiber-optic network serving the Northeast U.S.

“Subsequently accepted an offer to join the management consulting firm Booz Allen Hamilton (Booz Allen), where I led a number of high-profile client engagements, supporting the management of government facilities for federal agencies including the Environmental Protection Agency, Department of Agriculture, Department of the Army, Bureau of Printing and Engraving (U.S. Treasury), and the Department of Homeland Security. One noteworthy project resulted in the development of the 10-year facilities master plan for the National Marine Sanctuary Program (NMSP), an operational agency of NOAA. Formed in the 1970s to protect natural, cultural, biological, and environmental resources in territorial waters off the nation’s East, West, and Gulf coasts and Great Lakes, the agency lacked a coherent plan for housing its enforcement, education, and outreach functions. The resultant plan documented current space, determined near- and long-term requirements, and provided estimates of the costs to achieve those goals. As a result of this work, NMSP retained its facilities funding when those funds were rescinded from most other federal agencies.

“Finally, at the end of the day, it was time to devote myself to other activities, including time at the gym, visits with children and grandchildren, yard work, and travel.”

Jeffrey Stanton: “Rundown of my life after graduating: Received a master’s in mechanical engineering from RPI (1969). While they tried to draft me to go to Vietnam during my final semester at RPI, I made a deal with my draft board to go out to California and design weapons in the aerospace industry. I was a rocket scientist at TRW, worked on laser weapons and space satellites for Hughes, but I got laid off numerous times for long periods and no commercial engineering company would hire an aerospace engineer. I quit after 1975. I had planned...
to either design amusement park rides or industrial robots. Those career plans would never be fulfilled.

“While I lived in Venice, Calif., I worked as a freelance photographer for several years, and started a postcard company in 1979 to promote my career. I also created the first cartoon map of a town in the United States, but mostly had trouble selling the concept. When I did the second map of Venice, Calif., it was banned by the chamber of commerce because of its realistic cartoons.

“I bought an Apple II computer in 1979, then teamed up with the sixth largest software company to start their book division. My software review books earned millions, but I did the initial project for cash, not royalties. As a game programmer, I wrote the textbooks for designing computer arcade games for the Apple and Atari computers using assembly language. I was a successful game consultant until 1986 when I was in my early 40s. Unfortunately, I was a generation too old, old enough to be most programmers’ father. My career ended, as no one would hire anyone in their 40s.

“I managed an apartment building and sold postcards on weekends along Venice’s famed boardwalk to earn income. I was also a big collector of historic Venice photos because of its famed amusement piers and canal network of waterways instead of streets. I self-published a coffee-table history book about the resort and eventually enlarged the book in 2005 until it had 367 photos and 100,000 words of text. Because stores weren’t interested in selling it and Amazon doesn’t allow self-published books, I resorted to selling it by riding around Venice on a bicycle and showing it to anyone I encountered.

“While I created many internet history websites in 1996-1997 and was taken to lunch, my startup internet companies needed to pick my brain. No internet companies needed to pick my brain. No one would hire anyone in their 40s.

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“I resorted to selling it by riding around Venice on a bicycle and showing it to anyone I encountered.
Class of ’70 friends, as I mentioned in my last Class Notes, Stephen Valentine has created a Facebook page, RPI Class of 1970. There are now 50 members and we’d love to have more. Great photos and stories that are reminders of our illustrious past.

Kenton Lee wrote: “I will always consider myself as part of the Class of ’70 even though I was on the five-year ZBT program. After being with the NYS Dept. of Public Service, American Electric Power, an independent consultant in the U.S., and even several months in Pakistan, and with several auto dealers, I find that retirement and grandchildren are the best rewards. I keep busy with USA Hockey as a referee and coaching clinic instructor. I’ve officiated on-ice for almost 25 years, from 6-to-7-year-old children through high school JV and varsity and all levels of adult hockey (many of whom act like 6-to-7-year-old). Instead of paying to go to a gym to exercise, I get paid to stay fit; I’ve done over 250 games over the past 12 months alone! For 2018, I am looking forward to celebrating 45 years of marriage to my wife, Joyce, who just retired, and having more time with our five grandchildren. I try to keep in touch with Sue Aten and former roommate Wayne Coleman and Carolyn Chin ’69.”

Howard Matis posted on the Facebook page: “My RPI education just paid off. Two papers that I co-authored were cited by the Nobel Prize for Chemistry as important background research that led to this year’s Nobel Prize—The Development of Cryo-Electron Microscopy.” Howard, a physicist at the Lawrence Berkeley National Laboratory, is president of the Contemporary Physics Education Project (CPEP). Howard and the CPEP received the 2017 Excellence in Physics Education Award from APS Physics “for leadership in providing educational materials on contemporary physics topics to students for over 25 years.”

“We The American Society of Civil Engineers has shaped the future of the civil engineering profession for more than 160 years. I look forward to leading the organization as we reach new heights.” ROBIN KEMPER ’79

John Granato lives in Hawaii and is still a performing musician. He shared two great memories. The first was the fall of 1966 when the freshman dorms emptied out and we ran down to the football field to tear down the goal posts. WRPI had announced that RPI won its first football game in 10 years’ RPI beat Middletown, who started losing the streak 10 years earlier.

Paul Miller remembers RPI football finishing the season 5-4. “The final game against the Yellowjackets of the University of Rochester occurred on freshman parents’ weekend, as I recall my parents watching the game. Overly excited, we tore out the goal post, and for some strange reason carried it throughout Troy, about 4:30. A Troy cop stopped traffic. We returned up to the ’86 Field, joyful, as our parents figured it was time to head home in their cars. At least we had spirit, and for once in 17 years, a winning season.”

John Granato also shared photos of Jimi Hendrix playing at the Armony, a concert that we all should have gone to. I envy Wayne Coleman who was in the fifth row.

Talking about concerts, Kenton Lee looked through old Polys and found our concert pedigree. Through the years at the Field House, we had Simon & Garfunkel, Peter, Paul and Mary, The McCoys (“Hang On Slopy” fame), The Lovin’ Spoonful, Woody Allen, The Doors, the New Christy Minstrels, Frankie Valli and the Four Seasons, Al Hirt, Tom Paxton, Joy and the Americans, Flip Wilson, Iron Butterfly, B.B. King, Sonny & Cher, Bill Cosby and Roberta Flack, and Santana. Jimi Hendrix appeared at the Troy Armony. Jamie Martinez remembers Little Anthony and the Imperials at the Field House, and Paul Miller added Gary U.S. Bonds, The Fifth Dimension, The Association, and Alan King. As for my own recent exploits, probably most important is the therapy dog work that my spouse Julia MacDonald, ’72 and ’77, and I do with our dogs Jack and Ally, rescues from Georgia and Alabama. We go weekly to a nursing home, a school where first and second graders read to them, and the community library, and then monthly to an adult day care facility.

The Class of ’70 had a great time in our four, sometimes five, or maybe even six years on campus, and now we can look forward to our 50th in 2020. I hope to hear from you soon. Just remember there is usually a few months lag between submitting notes and the magazine being published. Send me an email or connect on our RPI Class of 1970 Facebook page. —Rick Hart ’70, harttmii@aol.com

Robin Kemper ’79 was elected president of the American Society of Civil Engineers for the 2018-2019 term. She is the fifth woman to lead the organization in its 165-year history. Her induction in October as president-elect marks the first time in ASCE history that women hold all three levels of presidential leadership (president, past president, and president-elect).

Kemper is a senior risk engineering consultant for Zurich Services Corporation. As an ASCE member since 1979, she has held a variety of leadership roles including president of the New Jersey Section. In 2015, she was named Civil Engineer of the Year by the ASCE New Jersey Section, in recognition of her contributions to the civil engineering profession.

In a career that has spanned nearly four decades, Kemper has worked on many structural engineering building design projects, including the feasibility study of the Bethlehem Steel plant that helped transform the former historical plant into a vibrant community. She holds a Master of Engineering and a dual bachelor’s degree in civil engineering and building science from Rensselaer and is a licensed professional engineer in six jurisdictions.

Kemper joins the ranks of illustrious alumni who have served as ASCE president, including bridge engineer Charles MacDonald, Class of 1857, steel expert William Metcalf, Class of 1858, and Civil Engineer Corps leader Mordecai Endicott, Class of 1868.

On Oct. 8 I ran the Delaware Distance Classic 15K race in Delaware City, Del., finishing in 1:09:37, good for second place among men 65-69.

Let me know what you’ve been up to. —Seth Bergmann ’71; bergmann@rowan.edu

Betty Sanders is a Lifetime Master Gardener and a nationally accredited flower show judge. She has studied gardening everywhere from the Arnold Arboretum to the New York Botanical Garden, and has lectured at many garden shows and civic organizations in the Northeast. —Bob Dvorak ’72; bobdvorak@hcrr.com

45th Reunion: Sept. 27-30, 2018 I Hard to believe that our 45th Reunion is coming up in a few short months! Hope many of you are planning to come
back to the ‘tute...if you haven’t seen the campus in the last few years, you won’t believe it is the same place we attended. Not only are the buildings and grounds impressive, but the students are, as well. Incoming classes are about 1,500 in size and average board scores are over 1400. Good-looking kids, too!

Now on to the news: Our old friend Tom Lovino just announced he was retiring from his company, Juullau Contracting, after 35 years there. Tom sold his company a few years ago to OHL North America and he stayed on as CEO until last July. Juullau is a large civil contracting company headquartered in Queens, N.Y., and has completed more than $3.5B in projects for the NY Metropolitan Transportation Authority. Congratulations, Tom!

Marc Bellotti was recently named to the board of directors of SpineOvations, a California-based medical device company developing minimally invasive therapies for spinal disc problems. Marc is partner at Fuel Source Partners, a management consulting firm in the medical device industry. Previously he was VP, research and development, at Sonendo Inc. Earlier he held senior management positions at Baxter Healthcare and Johnson & Johnson. Great career Marc...many of us might like to try the SpineOvations product to help our ailing backs.

As of this writing, I am at work too, as president and CEO of Universal Trailer Corp., a mid-sized horse, livestock, and cargo trailer company with seven plants in six states. So, if anybody needs a new pig trailer, just give me a call. Happy to give the “friends and family” discount. We also have motorcycle and snowmobile trailers, if that’s more your style.

Send in more info, folks. You’ll want to amaze your classmates on how many grandchildren you have and how many new patents you’ve received since graduation. As always, check in with our website: rpil3.org and let Steve Norton update your profile. See you at our 45th Reunion in September. —Gary DiCamillo '73; garydicamillo@gmail.com

—1974—

At the time I write this the Class of 1972 is celebrating homecoming at RPI. That means we only have two more years before we join ranks again for our 45th Reunion and seven years before we hit number 50 and also celebrate RPI’s 200th year. And we need you to help make both of them memorable for everyone. How? By volunteering to work on the Reunion committee.

So now that you are retired and have nothing to do, there is no excuse for not helping plan our next Reunion. It takes very little of your time and just sharing your ideas. So if you want to do more than just showing up in October 2019, drop me a line or call me. Contact info is at the end of this article.

As far as news goes, Don O’Hare retired several years ago with the rank of Lt. col. in the U.S. Army after 26½ years. Don is a Troy native and married to local nurse Gail Stevens, but now they both live in Colorado Springs with their daughter, Kelly.

Dana Rowley was elected president of the board at the Livermore Valley Educational Foundation. He retired back in 2013 after 32 years at LLNL.

I received an email from Larry Almacht just after the last news update went out. He tried to make several homecomings but has been busy traveling for work. Still working as a project manager at Black & Veatch, now in the Special Projects Group. Larry made his first trip around the world returning from Diego Garcia when delays made him change travel plans to head west to go home instead of east. He has been with B&V over 41 years and thinks he set a company record by working with or in every division.

He still lives in the Kansas City area. His daughter Katie is getting married in Dallas and his son Ryan has now settled in Denver. After his son broke up with his girlfriend in Hawaii, he and his wife, Harriet, became granddog owners after adopting Don Draper, a 10-pound bundle of energy. He now runs their household. He says it took some time getting used to snow last winter. (Larry, don’t you remember RPI winters?) Contact Almacht@av.com.

I also heard from Kathe Kilmer. She’s retired from Kodak after 33 years in their research division, mostly in clinical diagnostics. She is saddened at EK’s demise. She then spent five years refereeing high school volleyball and many years tutoring SAT’s part time, but reports it is not as fun since they dumbed it down. She and husband Bob Kulpinski have a metallogist son in Ohio and a daughter living in New Zealand in business, and now three sweet granddaughters—a 2-year-old and identical twin 3-year-olds. Still enjoys tennis, paddle tennis, and a bit of pickle, and definitely traveling. —James C. Wernicke, P.E. '74; wernickejc@yahoo.com

Greetings to the Class of 1975! Recently heard from Bob Fitzgibbon. He is working as a principal engineer in RF/microwave and other physics areas for Alion Science and Technology in Rome, N.Y. He’s also a member of the Rome Academy of Sciences, which hosts topical talks and sponsors science fairs in the local schools. His wife, Jennifer, is a church organist and they are both active in choir and other church work. They had a wonderful trip to Missouri in August to see the eclipse. Extracurricular activities include astronomy and amateur radio. They talk to Catherine Fiore and Valerie Lyons and Paul Crilly ’76 every now and then on Facebook, and say, all the best to fellow alumni.

On the home front, Maureen and I have continued our SKI (Spending the Kids’ Inheritance) vacations, and spent two weeks in September in Vancouver, Canada, and on a sea/land cruise to Alaska. We visited Ketchikan, Juneau, Skagway, Glacier Bay, College Fjord, and two resorts outside Denali National Park. Unfortunately, Mount Denali was socked in with clouds during our entire trip, and that same overcast prevented us from any chance of seeing the northern lights.

Send news and updates.—David Stark ’75; dstark@hotmail.com

—1976—

Gary Neal was elected treasurer general of the General Society of the War of 1812 for a three-year term. —Michael Mino ’76; mgmno@icloud.com

—1977—

Dear classmates! You missed a great Reunion! All who came seemed to really enjoy themselves very much. We have definitely learned that it is impor-
Matt McGivern ’14, who works at Pratt & Whitney, and Joe Elliott ’15, an engineer at Electric Boat, opened the first virtual reality arcade in Connecticut, Spark VR, in May. Wearing elaborate headsets, players can fight zombies, swim with fish, or defend a castle, among other games.

George Johns ’49, a USMC captain and fighter pilot, flew over 250 combat missions in four combat tours and is the recipient of four Distinguished Flying Crosses and seven Air Medals.

Retiring in June 2018 though, so work will not get in the way for much longer. Hope you all have a blast.”

Ben Cahill (BSEE) recently retired after working for Intel Corp. as a software engineer for 26 years. Prior to that, he was a computer and analog hardware engineer with Formation, Castle Instruments (his own business), Varityper (where he met his wife, Gail), Wyse Technology, and Chips and Technologies. Along with retirement comes the opportunity to get back into hardware (and play a lot of music!)

From Vinnie Metzger: “I’ll be over in Europe during the Reunion weekend, so will not be able to attend.” Noting that Atlanta is now nicknamed ATLwood and is now number 1 in movies, and number 2 in TV shows...He appeared in The Accountant last fall, with Ben Affleck, as well as Confirmation, on HBO. “On TV, I’ve turned up on episodes of Stranger Things, Containment, Survivor’s Remorse, Finding Carter, Greenleaf, and Devious Maids.” He had appearances on Manhunt Unabomber on 8/22, Being Mary Jane on 9/19, Valor on 10/16, and in the movies in Bradats with Glenn Close and Owen Wilson on 12/22.

My classmates made me promise that “what goes on at Reunion for Club 77, stays at Reunion 77,” but if you write me or better yet call me, I’m bound to share a detail or two. Looking forward to hearing from all of you! —Maureen H. Regan Robinson ’77, maureen7221@aol.com

—1978—

40th Reunion: Sept. 27-30, 2018 The mailbox was empty this time around. Send me those updates from your recent vacation, hobbies, and chance meetups with other alumni!

Our 40th Reunion is coming in October, so catch updates on Facebook (RPI Class of 1978). Have a great spring and summer and look forward to seeing all of you at the Reunion! —Mark Kecough ’78; mark.kecough@cox.net

—1979—

Robin (Block) Kemper was elected president of the American Society of Civil Engineers (ASCE).

As an ASCE member since 1979, Robin has held a variety of leadership roles including president of the New Jersey Section, director of Region 1, ASCE’s representative for Engineers Without Borders, and Student Chapter president. For more, see page 52.

Bill Jameson retired as a lieutenant colonel from the Army Reserve in May 2017 after 37 years. He had been an Army engineer with the 1st Armored Division in Germany, and then in Korea with the Corps of Engineers. He is now retired and living in South Carolina with his wife, Shelly, who is originally from Troy. They have two children, adopted in Korea, who are now a doctor and a nurse. Bill was recently elected to the Orienteering USA board of directors and named secretary. Bill began his orienteering hobby back in ’75 at Rensselaer.

Melanie Brown writes that after serving as chief patent counsel of Cytec Industries, she set up her own intellectual property law practice handling contracts, opinions, and patent protection. She continues to serve on the board of BRICK Academy, a nonprofit established to turn around a failing elementary school in Newark, N.J. Last year, she started to mentor a BRICK family out of poverty including teaching the second grader to read, tutoring the mom for the GED, securing employment for the mom, and hosting the three children at her house during their summer vacation.

John Emmett has retired from his nuclear engineering career after four years with Commonwealth Edison in Chicago and then 34 years at the Susquehanna nuclear plant in Pennsylvania. His last assignment was developing Susquehanna’s response to the Fukushima accident in compliance with NRC regulations and Institute for Nuclear Power Operations (INPO) industry guidance. He previously had been a reactor engineer, on-shift in plant operations (including a senior reactor operator certification), systems engineering supervision, and nuclear fuels engineering. John writes he is now enjoying lots of tennis, being a volleyball referee, playing with his Porsche, and getting better at his hobbies of woodworking and photography. John is married to Bernis Soper ’80 and they live in Mountain Top, Pa., where
they raised their two children, David and Grace.

Rich Lowney received the Boys & Girls Clubs of America’s Jeremiah Milbank Gold Medallion award at the organization’s national conference in Dallas recently. Since 1983, Rich has helped raise money and awareness and affect policy to advance the programs that serve more than 31,000 children in New Hampshire’s 13 Boys & Girls Clubs. He is the president of the NH Alliance of Boys & Girls Clubs.

Mark Eagle writes that he and his family have recently visited Iceland, the Panama Canal, and France. He found traveling is harder than working, so is now the director of development services for Uncommon Solutions, a technology consulting firm, and is the Denver RAN captain.

Nariman Farvardin, president of Stevens Institute of Technology in Hoboken, NJ., was featured in an article in the September 5 issue of Forbes on the use of computer science and advanced math classes in training financial analysts. —Paul Sicard ’79; psicard@entergy.com

Bernis Soper is continuing her role as business manager for the Luzerne County SPCA. She is married to John Emmett ’79 (see note in 1979).

Miles Moffatt joined Tighe & Bond of Westfield, Mass., as a technical adviser and vice president. A 33-year industry veteran, he has managed major water programs and projects for clients throughout the Northeast.

Christopher Dufresne writes: “Have hit 25 years living in Europe. Sadly my wife and I have lost three of our parents over the past 20 months. Our daughters, Alison and Stephanie, are thriving. Alison is a propulsion and systems engineer at Deep Space Industries in Silicon Valley designing their engines that will propel craft to near-earth asteroids, where they will land, mine, take off, and return. Stephanie pursues film, dance, and acting opportunities with her latest project at the Gate Theatre in Dublin where she has the lead role in The Red Shoes.” The Dufresnes live in Galway, Ireland. —Kathy Pratt Harrington ’80; kpharrington@gmail.com

Pat Roohan was named vice president of data management and analytics solutions at MVP Health Care in August. Previously he had a 30-year career at the NYS Department of Health leading quality, patient safety, health information technology, and data system initiatives, most recently as deputy commissioner of health for the Office of Quality and Patient Safety. —Marc Glasser ’81; mglasser81@gmail.com

2018

Nambirajan Seshadri, M.S. ’84, Ph.D. ’86, former chief technology officer, Broadcom Corp. and NAE member, received the 2018 IEEE Alexander Graham Bell Medal, the highest honor conferred by the IEEE in the field of communications and networking.

1981

Pat Roohan was named vice president of data management and analytics solutions at MVP Health Care in August. Previously he had a 30-year career at the NYS Department of Health leading quality, patient safety, health information technology, and data system initiatives, most recently as deputy commissioner of health for the Office of Quality and Patient Safety. —Marc Glasser ’81; mglasser81@gmail.com

—1982—

Please join us on Facebook! www.facebook.com/groups/RPClassOf82. Make sure to send your 35th Reunion stories!

Chris Hanke (B.S. ’82, M.S. ’86) and Paul Agnello (B.S. ’82, Ph.D. ’88) reconnected in mid-2017 on a “...fabulous two-week vacation with our wives, Kathy Mason and Iris Agnella, in Northern Spain (La Rioja and Basque regions), enjoying lots of great food and wine.” Chris has been working for Qualcomm in Raleigh, N.C., for four years, still keeping his hands dirty designing mixed-signal/analog power management circuitry for large datacenter server chips. Paul is a senior fellow at GlobalFoundries in Malta, N.Y., joining GlobalFoundries when it acquired the IBM Microelectronics business in 2015 (after 25 years at IBM).

Amy Dickison spent the summer doing a lot of sailing out of Newburyport, Mass. Russ Paige ’81 and his daughter joined Amy’s family on the boat while they were passing through.

Guy Gabrielson III reports that his youngest son, Dane, finished his through-hike of the Appalachian Trail in the early fall...199 days, 2,190 miles! His middle son, Roy, is finishing up his master’s in fine art education in Cambridge, Mass., and hopes to be teaching next fall. Guy’s eldest son, Jess, is working in the tree business doing the high stuff and loves the thrills! Guy says that he hopes to get back to RI soon.

After working in NYC for the last 14 years, Rob Stone and his wife, Mary Ann, moved to Chicago where he is now the CIO for Jenner & Block—a large international law firm. Rob noted that “…we decided this move would give us the chance for a major lifestyle change—we left a house in the suburbs of Connecticut and now live in an apartment in Lincoln Park. It’s been quite freeing to get rid of most of our ‘stuff’! I also got back almost three hours a day by reducing my commute!”

Michael Ange was promoted in August 2017 to chief technology officer (CTO) of Opus. Mike was formerly president and co-founder of Alacra, a leading provider of Know Your Customer and Referential Data solutions, acquired by Opus. In his expanded role as CTO, Mike leads software development, technology operations, and data solutions globally.

Patrice Miles (M.S. ’82, Ph.D. ’84) was appointed to the board of directors of MedMates, a life sciences industry network group in Rhode Island. She is the president/CEO and co-founder of Medley Genomics, which addresses the challenges of genomic heterogeneity in the diagnosis and treatment of complex diseases. Initially focused in oncology, Medley provides unique ‘molecular fingerprints’ of a patient’s cancer enabling individualized diagnosis and optimal treatment.

As for me, I recently founded the Professional Development Consortium of Hampton Roads (Virginia)—a place for leaders of professional development organizations to connect, collaborate, and coordinate on common issues and goals. I’ve been thinking about it for several years…finally time to act! More at www.pdc-hr.org. —Mark Bowers ’82; mark.bowers@lighthouse-one.com

—1983—

35th Reunion: Sept. 27-30, 2018 Brent Williams retired after 25 years at Xerox Corp. in Rochester, N.Y. Prior to that, he worked at Charles Stark Draper Laboratory in Cambridge, Mass., for eight years. While at CSIDL, he received an M.S. in mechanical engineering from MIT. He spent his entire career in various technical areas, including his last three years at Xerox, where he was a systems engineer working on the multifunction devices designed in collaboration between Xerox and its Japanese partner Fuji Xerox. Brent and his wife live in Penfield, N.Y. He’s enjoying retirement and much of his time is occupied by either riding or repairing bicycles. He volunteers with an orga-
Saul Kaplan is the founder and chief catalyst of the Business Innovation Factory, and recently shared his "From…To Story" for a colleague's book that contains stories of pharmacy school graduates who leveraged their education in surprising ways. Saul began with his pharmacy degree from the University of Rhode Island, although he knew he wouldn’t spend his career filling prescriptions. After adding an MBA from Rensselaer, he leveraged both degrees to work in the pharmaceutical industry for Eli Lilly & Co., where he had the opportunity to work on the U.S. introduction of Prozac. He then became a consultant, first with Arthur D. Little and then as a senior partner at what became Accenture. After retiring from Accenture, he led Rhode Island’s economic development agency.

Wes Horbutuck was promoted to president of Norcom Insurance in November. He has been with Norcom since 1993, where he held his position as executive vice president and manager of the Norcom Insurance team. "Wes Horbutuck has grown Norcom Insurance into one of the best insurance agencies in Connecticut," said the president/CEO of Norcom Mortgage.

More retirements out there? New promotions? Just started working on the U.S. introduction of Prozac. He then became a consultant, first with Arthur D. Little and then as a senior partner at what became Accenture. After retiring from Accenture, he led Rhode Island’s economic development agency.

Tobi Saulnier had a nice write-up in the Albany Times Union last summer. Tobi founded 1st Playable because she wanted to create games with a social purpose. Tobi earned her bachelor's, master's, and doctorate at RPI and used the RPI incubator to help start her business in 2005. At that time, only 11 percent of the game-development community was women. Now the number has grown to 22 percent; however, the changing industry has brought new challenges and opportunities. According to Tobi, anyone can produce a game, the challenge is making something people will pay for from a professional. Tobi has focused on educational games, building partnerships with organizations like The Environmental Law Institute. Tobi maintains the principles she started with—putting people first, getting outside whenever possible, and having fun wherever possible. 1st Playable now resides in a former basketball court at Troy's Market Block. Keep up the excellent work, Tobi.

TUV SUD, a world leader in testing, certification, inspection, and training, announced in October that John Tesoro had been named president and CEO, responsible for American operations. "An experienced technology executive with a collaborative, deliberate, process-oriented leadership, John’s previous experience includes transformative solutions selling processes, organic growth initiatives, successful acquisitions and business unit restructurings, involving strategic planning, market research, financial modeling, due diligence, divestitures, and business integration—all invaluable skills that will help keep TUV SUD America on its continued course of development and growth, and most importantly to be the solutions provider of choice for clients," John resides in the Boston area with his family and will be based out of the Peabody headquarters. Congratulations, John.

Reunion & Homecoming was once again a fun-filled weekend. At the campaign kickoff, I sat next to Connie Hastings and her second-oldest daughter, an RPI Jr./Sr. currently on a co-op adventure. We listened to her son, an RPI freshman, play pre-event music with other band members in the foyer of the EMPAC. Quite a treat. Her oldest daughter is also an RPI graduate (2015) who married her college sweetheart (sound familiar?) and now lives in Texas. Ed was home with their youngest son who has not decided if RPI will be his future. Connie is busy with full-time employment and Ed with running his own business. Turn us out we were the only registered ‘84 grads for the weekend and it was nice to catch up. —Diane Updegrove ’84, kupde@emailglobal.net

At homecoming, Jocelyn McConnon (21 Math.) became the first recipient of the Rensselaer Alumni Association Scholarship. It was an honor to witness the RAA’s scholarship fund begin supporting current students. If you wish to further encourage the next generations of Rensselaer alumni, check out how you can expand the reach of the RAA Scholarship Fund.

Last September, Judi Hunderfand (ChemEng), was appointed director of the Department of Consumer Protection/Weights & Measures for Rockland County, N.Y., where she has spent much of her career in various positions protecting the public’s health and welfare. Her department protects consumers by investigating complaints, assists in
developing laws to protect the public, and warns of frauds and scams; in her new role, Judi will expand online access to the public.

Did you know that Kraig Nienhuis (Comm.) performed at the Bushstock Music Festival? After playing hockey for the Boston Bruins in the 1980s and then various professional squads in North America and Europe, Kraig became a singer/songwriter/entertainer performing at diverse venues across North America. He has played before a world record crowd of 113,000 at the “Big Chill,” at the NHL Winter Classic, and recently at the Edmonton Oilers 30 Year Reunion with Sarah McLachlan and Tom Cochrane. Impressively, he has opened for such renowned performers as ZZ Top, Nickelback, Heart, Huey Lewis, Tragically Hip, B-52s, Doobie Brothers, George Thorogood, and David Lee Roth, among others. His musical repertoire spans several decades and multiple genres. Maybe he’ll play the Freakout!

Business & Finance News has named Sean O’Sullivan (EE) as one its 2017 50 Outstanding Tech Entrepreneurs. While at the helm of NetCentric, he created “software for inside the Internet”; he is credited with co-creating the term “cloud computing” alongside George Favaloro from Compaq. In 1995, Sean founded SOSV (formerly SOSVentures), a venture capital and investment management firm. As managing general partner, he has created and supported a wide range of business, humanitarian, and educational enterprises.

He founded JumpStart International, which was a humanitarian engineering organization based in Baghdad and operating throughout Iraq during the post-war period of 2003-2006. As chairman of the Irish Entrepreneurship Forum and founder of Open Ireland, he is a leader and influencer of Irish government policy in fueling economic growth and recovery in the technology sector. Sean has also been a regular investment panelist on the popular RTE TV show Dragon’s Den as well as an occasional columnist for the Sunday Business Post.

Bombardier Inc., the parent company of Bombardier Aerospace and Bombardier Transportation, has appointed Jeff Hutchinson (M.S. CompSci) as chief information officer. Bombardier, headquartered in Montreal, Canada, is the world’s leading manufacturer of both planes and trains. In this position, Jeff is responsible for leading Bombardier’s global IT, digital asset, and cyber security functions. Jeff has more than 30 years of experience leading and transforming IT organizations at large, matrixed companies including Honeywell, Maple Leaf Foods, SAP, and Danone/Dannon. Throughout his career, he has focused on leveraging leading processes, digital assets, technology, and collaboration to enable improved business performance, profitability, and business growth.

Got news! Send it along. — Patricia DeLauri ’85; pdelauri@siena.com

—1986—

Dan Ireland (B.S. Mgmt.) recently participated in presenting an interactive webinar on career advice for entry-level engineers. He is senior director of content operations at IEEE-GlobalSpec, where he’s responsible for managing a group that maintains technical content for one of the largest engineering resource and digital media websites. Dan previously managed an IHS aerospace engineering group in the UK.

Congratulations to Peg Olsen (M.S. Urban&Env., Ph.D. Ecol.Econ.) for being named director of the Adirondack Chapter of The Nature Conservancy. She most recently served as chief conservation officer at the National Audubon Society, overseeing 23 state programs and 46 nature centers as well as international programs. Peg also worked for the Conservancy from 1989-2003, holding various national and international posts and launching the Australia Program. In her new position she will be protecting 385,000 acres and working on the environmental challenges of land and water protection, reducing the causes of climate change, and utilizing nature to adapt in a climate-changing world.

CommerceHub announced the promotion of Kathleen Conley (B.S. ECSE, MBA) to senior vice president of operations. Prior to joining CommerceHub in 2014, Kathleen worked in a diverse portfolio of companies including Capital District Physicians’ Health Plan, Bank of America, Viewlocity, Factory Automation & Computer Technologies, and Computer Integrated Modular Mfg.

With 25 years of federal service, Arnold Abraham (B.S. Physics) retired as associate director of intelligence for United States Cyber Command at Fort Meade in August 2013. The next day, he started law school at the University of Maryland, where he was the oldest student in the class. He graduated cum laude, passed the bar, and now is the principal attorney/founding partner of The CyberLaw Group, a 21st-century firm focused on personal privacy and data protection.

Michael Wands was named head of Global Investment Strategies at Putnam Investments. He joined Putnam in 2008, having spent his career since RPI on Wall Street, most recently as head of Fixed Income N.A. for State Street Global Advisors.

Anthony Szema, M.D., has been promoted to clinical associate professor of medicine, Division of Pulmonary and Critical Care, and Division of Allergy/Immunology, Northwell Health, and clinical associate professor of occupational medicine, epidemiology and prevention, and director, International Center of Excellence in Deployment Health and Medical Geosciences, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell.

Dr. Szema wrote two new books: Unusual Diseases with Common Symptoms and World Trade Center Pulmonary Diseases and Multi-Organ System Manifestations. He is CEO of RDS2 Solutions Inc. and is co-inventor of a vaso-active intestinal peptide (VIP) drug that cures pulmonary fibrosis and lung injury and pulmonary hypertension. His part-time practice is Three Village Allergy & Asthma, PLLC, South Setauket, NY. He is married to Denise Monte, M.D., FACS. He and his children, Allison and Austin, received...
The class of #RPI87 returned in force for our 30th Reunion: Kristin Stoehr Pereira reports, “A little older and a lot wiser, we put our well-earned laugh lines to good use. It was so nice seeing everyone again.”

A reunion within a reunion took place when the Class of ’87 swimming and diving team took the opportunity to reconnect. Dinner and reminiscing Friday night at the home of Bob Kirchner and his wife, Natalie Wittner Kirchner (Russell Sage), was attended by Armen Pogharian, Hans Foerster, Eric Pearl, Ralph Krempfl, and Sebastien (Sam) Pascaleare. Tony Sarrack had to leave before dinner and Tom Belletete and Deb Cherniwchan Belletete joined the festivities the next day. Jeanne DeBonis (nee Carboni) was a last-minute scratch. While visiting the Robinob Pool on Saturday, they fortuitously ran into former Big Red Swam and old friend Bob Keyes. Bob and the team have started making plans for the 100th anniversary of the swim team, occurring in 2018. If you were on the swimming or diving team at RPI in the last 100 years, please reach out to make sure you are included.

In non-reunion news, this summer, Orbital ATK named Rick Mastracchio senior director of operations for their Commercial Resupply Services program. As a member of the Advanced Programs Division’s Human Space Systems team, Rick manages the CRS Mission and Cargo Operations teams and supports other Human Space Systems programs, including Orbital ATK’s exploration pursuits beyond low earth orbit. Rick’s new role with Orbital ATK follows an accomplished career with NASA during which he flew as a mission specialist on three space shuttle flights and spent time on the space station, logging 228 days in space, including nine spacewalks.

Though they missed reunion, it was great to reconnect with classmates Jim Rider and Paul Urson when they visited Troy recently. Jim is currently the visual effects supervisor for HBO’s forthcoming adaptation of Fahrenheit 451.

George Norman and Mary (Rooney) LaChance ’97, after both being first-time candidates for Glastonbury, Conn., Town Council, are happy to report that they were both elected on November 7! Both are looking forward to working together to serve the great town of Glastonbury.

Mark Ameres reached out to invite anyone in Spain/Andorra. We live in a wonderfully varied world and I’m very lucky to not only explore it but also share it with my travel clients!

Michael Baltarian has been hired by the acoustical consulting firm Acenitech as a principal consultant in the Noise and Vibration Group. He has over 32 years of experience in the design of noise control treatments such as barriers, enclosures, damping, and vibration isolation.

Our 30th Reunion is next October. Hope to see you there! —Grace Vitagliano Roth ’88; grace@abcworldeducations.com

John Olson was named vice president of cloud operations, technical support and security at Guardian Analytics in October. He is responsible for running the company’s cloud operations financial crime platform, which combines fraud detection and anti-money laundering (AML) capabilities, as well as a real-time B2B supplier portal account takeover (ATC) offering.

Mark Maybury, MBA ’89, was named to the newly created position of chief technology officer at Stanley Black & Decker in November. He joined the organization from the MITRE Corp., where he held a variety of strategic technology leadership roles over 27 years. A former U.S. Air Force officer and chief scientist from 2010 to 2013, he is a member of the Defense Science Board and recently completed service on the Air Force Scientific Advisory Board and the Homeland Security Science and Technology Advisory Committee. —Joseph Hom ’89; hom@flash.net

Greetings from Houston, home of the World Champion Houston Astros!

Melville “Mel” Davey III (B.S. & M.S., CompSci) wrote in with an update. Mel was one of the original founders/creators of Ion Torrent Systems Inc., DNA sequencing technology. He later ran the software and bioinformatics groups, developing novel sequencing technology and platforms that enabled targeted cancer gene panels and software for the identification of mutations, rearrangements, and gene fusions. Mel is now working with Jonathan Rothenberg. He is on a new start-up and is always looking for top programming talent with deep learning skill sets and a passion to improve the world to join his team.

Suzanne Rosato (MBA) joined the operations group at G2, which provides telecommunications contract negotiations expertise to enterprise companies globally. Suzanne is widely regarded as an expert in the field of carrier pricing and telecom negotiations.

Richard Taylor (M.S., Ph.D. Chem), professor of
chemistry and biochemistry at the University of Notre Dame, has been named interim director of Notre Dame California, where he is responsible for further developing Notre Dame’s presence on the West Coast. Rich joined Notre Dame’s Department of Chemistry and Biochemistry in 1995 following completion of a postdoctoral fellowship at Stanford University. Rich helped found what is now the Warren Family Research Center for Drug Discovery and Development, serving as interim director. Rich maintains an active research program studying natural compounds for their therapeutic potential.

Willem Van Twembeke (M.E., NuclearEng), has been named CEO of Oraza Energy by its board of directors. Oraza, headquartered in Houston, Texas, is a privately owned, independent power producer serving markets in El Salvador, Guatemala, Ecuador, Peru, Chile, and Argentina. Willem joins Oraza following 25 years with Tractebel and various companies within the ENGIE Group.

Qamar Wan Noor (B.S., ChemE) was appointed the chief operating officer of the Malaysia Land Public Transport Commission, where she is responsible for transforming the passenger services and commercial goods transportation sectors, including infrastructure, within Malaysia. She joins the commission following a successful career with Shell where she served in the Middle East, Asia-Pacific, and Malaysia.

Al Gross (B.S., CompSci) wrote in from Miami to let us know that they made it through Hurricane Irma with about a week of power outages and quite a bit of cleanup, but otherwise came through relatively easily.

Here in Katy, Dianne and I were fortunate to have no impact from the torrential rains brought by Hurricane Harvey. Like many others across the area, we helped friends and colleagues clean up their flood-damaged homes. Lately, we have enjoyed trips to Amsterdam and Singapore, making it home in time to share in the joy of watching the Houston Astros claim their first World Series victory. If you find yourself in the Houston area, please be sure to let us know! — Rob Sherman ’90; rob Sherman@hotmail.com

Laurence Burke is curator and Pucci Family Foundation Scholar, Aeronautics Department, at the National Air and Space Museum. As curator, he oversees the U.S. Naval Aviation collection of over 30 U.S. Navy and Marine Corps aircraft, covering all eras of naval aviation from a pre-WWII Curtiss N-9 training to the prototype for the Marine Corps’ Lockheed Martin X-35B. In December, he spoke about Pearl Harbor at the Freedom Museum in Manassas, Va. — Richard Vehlow ’91; rveh969@gmail.com

Col. Kimberly Colloton (BArch; B.S.) assumed command of the U.S. Army Corps of Engineers, Transatlantic Afghanistan District (TAA), during a change of command ceremony last August at Bagram Airfield, Afghanistan. She previously served as the commander for both the USACE Albuquerque and Los Angeles Districts and is the TAA’s first female commander.

CHA Consulting Inc. hired Erin M. Crotty (M.S., Urban&Env), former commissioner of the New York State Department of Environmental Conservation, to serve as vice president, environmental market leader. She leads a team of environmental engineers and scientists providing solutions to complex environmental issues, including remediation and regulatory compliance.

Prescient appointed Magued Eklawi (MBA) to the position of CEO last May. Prescient provides design, engineering, manufacturing, and installation solutions for the construction industry.

The Tulane School of Professional Advancement announced the addition of Jerry Lenz (B.S. EE) as professor of practice and program director, Business and Leadership Studies. He was previously the director of business services at the Goldman Sachs 10,000 Small Businesses program at Delgado Community College in New Orleans.

Melissa Wong (B.S. CSE), a systems engineer and cybersecurity expert at the Johns Hopkins University Applied Physics Laboratory in Laurel, Md., has been awarded the 2017 Women of Color Award for her accomplishments in science, technology, engineering, and mathematics (STEM)-related fields. — John Trammell ’92; johntrammell@gmail.com

Daniel Schultz ’99 Earns Fame in Floral Installation Design

Daniel Schultz ’99 and his wife, Natasha Lisitsa, are the creative force behind Waterlily Pond, a floral art and event design studio based in San Francisco, California, that has been recognized internationally for larger-than-life floral installations, original style, and innovative use of materials. They recently won first prize (60,000 Euro) in the international flower festival, FLORA, held in Cordoba, Spain. Their creation, Duende, was inspired by the whirl of a flamenco dancer’s skirt, and crafted on-site over four days from 500 spirals of perforated aluminum, hand-tied together to create a self-supporting structure and flowers.

In 2016, they took Gold and Best in Show awards at the Singapore Garden Festival, for Stretching Time, a massive cantilevered structure of wooden dowels spanning 16 feet between walls and supporting a lush display of fresh flowers.

“We design modern sculptures which juxtapose industrial materials and vibrant fresh florals,” says Schultz. “My passion is for conceptual design and engineering of beautiful, dynamic structures. Natasha’s excellence in floral design and exciting color combinations make us a great team.”

Schultz is the son of the late William Weightman Walker Professor of Chemistry Arthur G. Schultz, and he grew up within the Rensselaer community. During his studies at the School of Architecture, he cultivated a love for fabrication in Sid Fleisher’s woodshop, which later developed into a career in furniture design. He attributes his design skills to a rigorous, critical program, his many inspiring professors, and opportunities to study abroad.

“For the recent competition in Spain, while I was constructing our piece in an ancient space in an ancient city, I was reminded not only of my semester in Rome, Italy, but also of my senior thesis, in which I used perforated metal as the primary material,” says Schultz. Waterlily Pond has designed flowers and décor for over 1,000 weddings and events, performed numerous live demonstrations, and created large-scale works of floral art for the San Francisco Museum of Modern Art, the de Young Museum, and other cultural institutions worldwide.

25th Reunion: Sept. 27-30, 2018 Jason Kinsow joined the HKA Advisory Group as principal. He has more than 20 years of experience leading companies in performance improvement and strategic initiatives in the U.S., Canada, UK, Netherlands, South Africa, India, Australia, and New Zealand. He managed over 80 energy projects ranging from small engagements to large, multi-year global assignments. Prior to joining HKA, he led IBM’s
CLASS NOTES


Col. Robert Lyman has been honored with the 2017 Military Leadership Award from the Association of Defense Communities for excellence in building and sustaining innovative community-military partnerships at Joint Base Charleston and for an active commitment to outreach with local and state stakeholders. He was the commander of the 628th Air Base Wing and Joint Base Charleston until this past July 6. Now he is director of communications for Joint Special Operations Command at Fort Bragg, N.C. —Ilena Gonzalez '93; igonzalez@alum.rpi.edu

—1994—

Brian Williams was promoted to partner at Carl Marks Advisors, a corporate restructuring and investment banking firm. His primary focus is in the energy industry. Prior to joining Carl Marks Advisors, he was CFO and co-founder of Cretic Energy Services, a provider of completion services to oil and gas producers.

Kelly Palmer was named director of marketing and development for the Imaginarium Science Center and the Southwest Florida Museum of History. A former advancement officer at Rensselaer, she most recently was director of development at Boise State Public Radio in Boise, Idaho. —Bill Wheeler ’94; William.Wheeler@yahoo.com

—1995—

Keep the updates coming. Victor Avelar wrote a white paper on cost benefits for Micro Data Center Deployments as the director and senior research analyst at Schneider Electric’s Data Center Science Center. Somesh Kasibhatla has joined First Tennessee Bank as senior vice president and director of treasury management products. —Michael Van Poots ’95; Michael@Vanpoots.com

—1996—

It’s been a few issues of the Rensselaer magazine with light news turnout for the Class of 96. Don’t delay; send in your updates today!

Congratulations to Rick Short who was named corporate associate vice president and senior director of marketing communications for Indium. In this role Rick is responsible for ensuring that all programs and initiatives align with Indium’s corporate branding and culture. Congratulations, Rick, on the promotion and new role. —Hank Carbone ’96; hcarnone@hotmail.com

—1997—

I hope everyone who was able to make it to Reunion had a lovely time—one of these years that weekend won’t compete with all the kids’ soccer games, and Brian and I will actually get to attend.

One of the Class of 1997 MBA grads was in the news, picked up by our ever-vigilant team at RPI: Mike Morrissey was appointed president and COO of Stewart EFI, one of the largest suppliers of small precision metal stampings in the world. Its capabilities include deep draw, progressive, slide-forming, wire forms, machining, and automated secondary assemblies, as well as metal plating and finishing.

Congratulations, Matt! —Kristen Fitzpatrick ’97; kfitzpatrick@mhb2003.lhs.edu

—1998—

20th Reunion: Sept. 27-30, 2018 Pinky Weitzman has had an unusual career path for a computer science major. In October she was named chief digital officer at the American Civil Liberties Union. But she is also a rock violinist who has performed with such artists as Belle and Sebastian, Moby, and the acclaimed indie band The Magnetic Fields. She spent much of the past year on tour with The Magnetic Fields, including a trip to Melbourne in October to make a guest appearance with the band. —Bill Wheeler ’94; William.Wheeler@yahoo.com

—1999—

Lt. Col. Joanna Rentes was appointed commander of the 325th Medical Support Squadron at Tyndall Air Force Base, Fla., where she oversees seven flights managed by highly trained airmen and Team Tyndall members. Through her career, she has had 10 assignments from Alabama to Alaska.

CDR Daniel Cochran, USN, following his service as commanding officer of the USS Ronald Reagan (CVN-76), reported to NATO’s Joint Air Power Competency Centre in Germany. During his career, he has accumulated over 3,200 flight hours in 32 aircraft and 760 carrier arrested landings. —Mike Johnson ’98; mjohnson@alum.rpi.edu

—2000—

Lt. Col. Mike Loftus took command of the 2nd Engineer Battalion, Fort Bliss, last June. He serves as commander of 580 engineers providing engineering, network and communications, intelligence, and logistical support for an Armored Brigade Combat Team. He most recently served as professor of military science and led the ROTC program at the University of Rhode Island. —Erica Kulesa ’99; ericakulesa@yahoo.com

—2001—

William Chu recently joined Acentech, a Boston-based acoustics consulting firm, as a senior consultant. His expertise ranges from acoustics design and 3-D modeling and simulations, to HVAC noise and vibration control analyses and documentation of LEED acoustical requirements.

Roy Richardson joined the Water/Wastewater Group at Barton & Loguidice as a managing engineer. He has worked on a variety of projects involving drinking water distribution systems, including pipe installation, rehabilitation, and replacement, as well as booster pump stations, pressure reducing systems, chemical systems, and storage tanks. —Mike Cooke ’01; themikecooke@yahoo.com

—2002—

Price-Mars Delly co-founded, with his brother Laurent, the feedback platform Ideacoil. “We envisioned this platform as a tool to help businesses learn about their pitfalls and opportunities through a rewards-based community. Since developing a beta product, we have received a few accolades from sources such as Entrepreneur.com 360, and have worked with several local business partners to test the application.” He says, “I highly credit Rensselaer for allowing me to do what I do today as an entrepreneur.”

Eric Baron, M.E. ’02, was elevated to partner at Cantor Colburn LLP, one of the nation’s leading intellectual property law firms. His patent practice focuses on electrical and mechanical arts for a broad array of aerospace and industrial technologies. —Elizabeth Trawinski Aitken ’02; ejello@alum.rpi.edu

—2003—

15th Reunion: Sept. 27-30, 2018 My wife, Melissa, and I welcomed a daughter, Giovanna Marie, on September 30. She was 7 pounds, 10
ounces, and 20 inches long. She already enjoys listening to Engineer hockey games with daddy and can’t wait to attend her first game! —Ed DeGurghian ’03, degue@alum.rpi.edu.

—2004—

Jeff Alvarez (BSME) and his wife founded Naya Health, which has developed a smart breast pump. A recent article in Bloomberg covered their struggle fundraising for a women’s product in the male-dominated VC community. They also launched a crowdfunding campaign around their second product, a smart baby bottle. Jeff says he has used the knowledge and know-how gained at RPI every day since graduation. “RPI gave me a strong technical foundation that helped me build what I believe has been a successful business.”

Ethan Dobson was named senior vice president of growth and marketing by B12, an early stage human-assisted AI company. He most recently served on the executive team at SinglePlatform, a division of Constant Contact. B12’s first product uses human-assisted AI to build and design websites in a completely new way.

Tina Williams, M.S. ’04, is founder of TC Secure, a Md.-based cybersecurity company. She was recently named the University System of Maryland’s cybersecurity academic innovation officer for the new Federally Funded Research & Development Center. —Send news to alum.mag@rpi.edu.

—2005—

Jason Melo joined Reading Cooperative Bank as information security analyst last summer. Previously he was the IT manager at GenArts Inc. and an IT administrator at EverySpace Inc. He earned his J.D. from the Mitchell Hamline School of Law. Shannon Hitchcock has stepped down as class correspondent for the Class of ’05. If you would like to volunteer to serve as class correspondent, contact alum.mag@rpi.edu.

—2006—

Steven Burgess joined Benedictine University in Lisle, Ill., as assistant professor of philosophy. He was previously a teaching fellow at St. Norbert College. He earned his Ph.D. in philosophy at the University of South Florida. —Meghan Kate ’06, rtp06news@gmail.com.

—2007—

Send in your updates so that we can share your news in the next edition of Rensselaer magazine. —Alex Salinsky ’07, alexsalinsky@gmail.com.

—2008—

10th Reunion: Sept. 27–30, 2018 — Wedding bells are in the air! In August, Colin Sweet married his lovely wife, Elissa! Colin also bought a house over the summer, where they currently live in Westerly, R.I. Congratulations on so much adulting!

Capt. Craig Poulin, an instructor in the Air Force Institute of Technology’s Civil Engineer School, was named Air University’s Company Grade Officer of the Year for 2016. Capt. Poulin directs courses, instructs lessons, and provides consulting on electrical engineering and construction management topics. His areas of expertise include facility electrical systems, electrical distribution, power generation, energy management, and construction safety. He was also named the Civil Engineer School’s Instructor of the Year by his peers. Congratulations on all the great work!

Eric Dahl was awarded Young Engineer of the Year by the Rockland County Chapter of the New York Society of Professional Engineers. Eric joined Geiger Engineers in Suffern as a design engineer after receiving his bachelor’s and M.S. degrees from RPI. He has worked on the design of sports and recreation facilities throughout the U.S., including the retractable roof at the USTA Louis Armstrong Stadium. Congratulations, Eric!

Please keep your updates coming and make sure to like our Facebook page at facebook.com/RPIClassOr2008, follow us on Snapchat, and join us in our weekly class reunion using your VR headset. —Trent Gillispie ’08, trent@alum.rpi.edu.

—2009—

Daniel Hashim was appointed acting chief scientific officer and member of the advisory board of the Vivako Inc. subsidiary VivaVentures Energy Group in October. He received his Ph.D. in materials science and nano engineering from Rice University and has 1,000 citations credited to his published work. In 2014 he was named to the Forbes 30 Under 30 in Science & Health Care list. —Jordan Hagaman ’09, jhagaman@alum.rpi.edu.

—2010—

Send in your updates so that we can share your news in the next edition of Rensselaer magazine. —Meghan Lenthall ’10, lenthall@alum.rpi.edu.

—2011—

Hello, classmates. As I was speaking to a group of first-year students during Navigating Rensselaer & Beyond last August it dawned on me we were all in their shoes (personally I was wearing flip-flops) 10 years ago, how time flies!

Joanie Stupik was interviewed by the Hartford Courant this past fall as part of Mercy High School’s alumni spotlight in her incredible job at Jet Propulsion Laboratory. As an engineer, Joanie was part of the JPL team that shepherded the final stages of NASA’s 20-year Cassini program as the spacecraft entered into Saturn’s atmosphere at 77,000 mph. After graduating RPI, Joanie completed graduate studies at the University of Illinois before heading to southern California.

A little closer to Earth, fellow classmates have been making some big job moves. Daniel Olimpio, previously a vice president at Sterling National Bank, moved into a new role within the private client office of Signature Bank in Westchester County, N.Y. Further update, Kristin Diotte was appointed director of development for the City of Schenectady. She was previously a project manager and architectural designer with Re:Form Architecture and founded Operation Railbridge, a studio that focuses on re-imagining underutilized public spaces.

If you’ve not heard of the RPI crowdfunding program WeR Gold, I encourage you to learn more. Student clubs and organizations use it as a way to help raise money for needed projects, and it is a way for alumni like you and me to find areas you’d want to support. Last year I helped support updates to the Clubhouse Pub in the Rensselaer Union, and I plan to help this year’s projects like a new vehicle for RPI Ambulance. Please send your updates and your tips on how to best use WeR Gold.

Remember to send me any updates you’d like to share with your fellow classmates! —Michael Zwack ‘11, zwack@alum.rpi.edu.

—2012—

Congratulations to Megan (Reile) Koharik who was married on July 8, 2017, to RJ Koharik! Their wedding was held in Buffalo, N.Y.

Thank you to everyone who attended our Five-Year Reunion at The Rock in Troy and contributed to our class gift, which is helping to support students unable to otherwise afford a Rensselaer education! Please continue to send us your professional and personal updates. To stay connected with the Class of 2012, like our Facebook page, RPI Class of 2012, and follow us on Twitter, @rpiclass2012. —Rob Sobkowich ’12, sobkor@alum.rpi.edu.

—2013—

5th Reunion: Sept. 27–30, 2018 — Welcome to the year of our five-year reunion! With that, I bring five updates from classmates, plus some for good luck.

We went through wedding season, and by now we have another coming up. Power up, Engineers, and let’s send our best wishes to Alyssa Ancin and Brad Sledzfsk ’12, who were engaged on August 31. Kevin Zaykor proposed to Rebecca Exley in August and they will be married on their seventh
Alumni Find Opportunities in Wire & Cable Industry

The growth of the wire industry is being driven by wireless applications, and recent Rensselaer graduates are helping lead the way at the Pawcatuck, Connecticut, company Cable Components Group (CCG), which develops components and compounds for the wire & cable and optical fiber industries.

What’s wireless is the short distance between the nearest wireless access point and your smartphone or laptop. But the wire leading to the wireless access point must have outstanding dielectric properties and the ability to handle intense heat.

CCG has developed compounds and components that can be used safely in high-temperature applications in everything from optical fiber to high-temperature filtration systems and are especially suited for evolving Power over Ethernet (PoE) and Power over LAN applications.

Pictured, from left, are David Connor ’16, quality engineer, who majored in chemical engineering; Dan Meszmer ’14, sales engineer, who earned his B.S. in mechanical engineering and an MBA; and Charles Glew ’15, technical services sales engineer, who earned his B.S. in chemical engineering and M.S. in technology commercialization.

First off, let’s tip our caps to Anthony Policastro, who became a registered architect in November.

Matt McGivern and Joe Eilert ’15 made some noise in the world of virtual reality. Their new venture, Spark VR, opened in Vernon last May. Spark houses four VR bays where players can immerse themselves in 15 different games.

A big shout out to Brian Wilczewski who not only started a Ninja Warrior gym (Movement Lab) in Cornwall, N.Y. Christopher and Anastasia met and dated as students, then reunited online. They honeymooned in Alaska, and now reside in the Hudson Valley, where Christopher works for the Department of Transportation as a civil engineer and Anastasia is a data analyst for USAI Lighting.

Zip your gowns and tip your caps to Sarah Mailhiot. From her bachelor’s in Troy, Sarah continued to Montana State University. Through innovative research in applications of MRI technology, she became MSU’s first female doctoral graduate in mechanical engineering. Following this outstanding achievement, she has a postdoctoral research fellowship in Sweden. “Gratiss,” as the Swedes say!

I join Sarah across the pond. I relocated to Berlin, Germany, last fall, maintaining my job developing product documentation and training resources with Formlabs. I’ll keep writing in English for now, so please continue to send me your updates.

—Stephen Nock ’13; stephen@lock@gmail.com

—2018—

Hello, all! Happy spring! Hope your 2018 is off to a great start! We have some great updates from the Class of 2014 for this spring issue.

appointed assistant professor of computer science, Dr. Santosh Gupta. Santosh graduated with a Ph.D. in ECSE from RPI and served as a postdoctoral research associate with us. His appointment is at Missouri University of Science and Technology, where he will continue his research in smart buildings, internet-of-things architecture, cyber-physical systems, and tech entrepreneurship.

Switching gears to our more local success stories, we would like to congratulate our K-Plate Korean BBQ owners John Goh and Kevin Shin. The two RPI graduates opened their new restaurant at 75 4th Street in downtown Troy. Starting from a food cart in December 2015, these classmates grew to later join Troy Kitchen until the final unveiling of their restaurant this past October. Congratulations to the speedy success of these foodie entrepreneurs and be sure to stop by and check out their amazing BBQ!

I recently caught up with one of our 2016 graduates, Tyler King, and was informed of her newfound recognition. As a design lead for IBM Z Cognitive Analytics, she wanted to make an impact at her work. So, she brought together 1,500 of her closest co-workers through the help of the unexpected: Post-it notes. She posted on the door of every employee words of encouragement and compliment. Her positive message was heard throughout the company so much that she was recognized with an IBM Eminence & Excellence Award and became the first IBM #NewWays2Work Star. Way to go, Tyler!

Last, but certainly not least, I would personally like to congratulate our 2016 classmate Andrew Pla, who will marry his fiancé Stephanie Carter this upcoming fall. The two met while Andrew took a semester at RPI’s exchange school, University of New South Wales, Australia. Best wishes to the happy couple! —Maggie Murphy ’16; mugrphy009@gmail.com

Hello Class of 2016! I hope these notes find each of you happy in your life. Over these last few months we have had some great accomplishments from our classmates that I am sure you are interested to hear.

First, we would like to congratulate the newly

anniversary, Aug. 31, 2019. In the meantime, Kevin and Rebecca work in their respective fields of chemical engineering and architecture.

A fellow freshman Quad resident, Sam Germano, married Chua Quach, and they live in Las Vegas, where Sam is a software engineer at Switch. And finally, another classmate couple wed in a fairytale reconnection: Christopher Rittendale married Anastasia Redding ’12, ’13G last May in Cornwall, N.Y. Christopher and Anastasia met and dated as students, then reunited online. They honeymooned in Alaska, and now reside in the Hudson Valley, where Christopher works for the Department of Transportation as a civil engineer and Anastasia is a data analyst for USAI Lighting.

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Douglas W. Ronaldson ’40, former manager at various companies, owner of Ronaldson Industrial Supply, genealogist, and WWII Navy veteran; Aug. 17, 2017.

Adrienne Gray Gutierrez ’47, former rocket scientist at GE, real estate entrepreneur, and competitive sailor; Nov. 21, 2017.


Richard A. Anderson ’49, MCH ’51, DCH ’53, global executive in the petroleum industry, Rensselaer Athletics Hall of Famer, and Coast Guard veteran; July 8, 2017.

J. David Benedict ’49, employment agency owner, human resources manager at GE and Blue Cross Blue Shield, and WWII Air Force veteran; Sept. 29, 2017.


Howard G. Booth ’51, career meteorologist at the Nevada Test Site, and WWII Army and Korean War Air Force veteran; Aug. 16, 2017.


William I. Owens ’51, retired senior engineer, Delco Products Division, General Motors Corp.; Oct. 6, 2017.

Paul J. Gayet ’52, retired after a career in underwater acoustics and telecommunications, and real estate management; Dec. 9, 2016.

Robert D. Hatch ’53, MEE ’65, professor emeritus, Lawrence Technological University, former engineer, GE, RAA Key award recipient, and WWII Air Force veteran; Oct. 1, 2017.


Basil Fedun ’54, Ph.D., retired staff hydrodynamicist and torpedo control specialist, Gould/Westinghouse/Northrop Grumman; Aug. 27, 2017.

Douglas C. Dennison ’55, retired from Boeing where he worked on the B-52, PT-17, 707, Minuteman, and Stealth; July 9, 2017.


Donald L. Wallace ’55, professor, McCell School of Business, Queens University of Charlotte; March 26, 2015.

Marvin Warshay ’55, retired Electrochemical Technology Branch chief, NASA Lewis Research Center, and international consultant to the fuel cell industry; July 11, 2017.


Mark Holt ’56, retired director, toxicology and drug safety, Merck and Wyeth Laboratories, and U.S. Navy veteran; April 3, 2017.


Stephen A. Barre ’60, retired president and chairman, Servco Corp. of America, Rensselaer trustee and active alumnus, and U.S. Air Force veteran; Aug. 30, 2017.


Robert A. Johnson ’64, retired computer scientist for the Department of Energy; Nov. 7, 2017.

Walter A. McLaughlin ’64, retired senior engineer, Northrop Grumman; Aug. 20, 2017.


Harry R. Gibbs ’70, M.D., vice president, chief diversity officer, and associate professor, MD Anderson Cancer Center, University of Texas; Dec. 17, 2015.

Luké K. LiCalzi ’71, M.D., retired director of vascular surgery and former chief of trauma services, South Nassau Communities Hospital; Dec. 10, 2017.

Robert E. Bloom ’73, former programmer, IBM, senior marketing manager, Intellution, and vice president and co-owner, Ink & Toner USA; Oct. 1, 2017.


Joyce McLaughlin, Ford Foundation Professor, Mathematical Sciences, and founding director, Inverse Problems Center; Oct. 23, 2017.
As I’m sure many of you did, I read “Don’t Fly in 10 Years” [One Last Thing, Fall 2017] in the recent alumni magazine. I read this with some interest, having served for some time in the aerospace industry (retiring a couple of years ago from a large Northwest aerospace firm).

The author, Lawrence Stoker ’10, does make valid points about new technologies, and the cautious approach to be taken with same. He also is correct regarding our continuously changing understanding of physics and materials properties (these concerns are applicable to all fields, including structures). Mind that I am only familiar with the commercial (not military) side, but I might mollify a few of Lawrence’s concerns, modify another, then add a couple (again, on the commercial aviation side).

In each commercial accident cited in the article (and indeed, all commercial accidents/incidents), there have been regulations and policy put in place by the regulators (Federal Aviation Administration, European Aviation Safety Agency, and others) that are meant specifically to prevent recurrence of any similar accidents. These regulations and policies are typically vetted over a few years between industry and regulators. The vetting explores root causes, possible related issues, and acceptable/comprehensive testing and analysis techniques for the future designs (and, if necessary, for existing designs). Also note that there are regulatory processes to ensure short-term safety while these new regulations are put in place.

Indeed, the whole issue of “aging” airplanes has had a massive review and recodification in the last 15 to 20 years that continues to be refined to this day. This includes “aging” issues in structures, fire safety, and wiring.

Having said that, the possible issues with commercial aviation that I see could be stated as follows:

First, “we don’t know what we don’t know,” i.e., what aspect(s) of physics in materials, design, or the environment has not manifested itself during test or service. Obviously the best and most experienced minds in the industry have generated the testing and analysis suites that certify our current airplanes, but there are stories I could tell.

Second, I totally agree with Lawrence about the culture that assumes that the computer and a few buzzwords make for a robust design and certification process. Increasingly, the management in some corporations is staffed with non-technical people. People more likely to use buzzwords to close out a meeting, rather than ensuring that concerns and action items are understood by all, catalogued, and resolved. People who might “hypothetically” question whether fire (outside the engine case) on an airplane is a problem (don’t ask). And one has to look no further than the Challenger and Columbia disasters to find culture issues prevalent in some parts of the industry, where data is required to prove unsafe rather than the reverse.

Third, automation and software may sound like a panacea for many systems’ issues, but this technique must be approached with extreme caution. Whenever someone touted automation as a solution, I always tried to temper my enthusiasm. The vision of a cockpit computer screen, prominently displaying a smiley face, all poking out of a smoking hole in the ground, is my worst fear.

Lawrence says, “Could it be that the next aircraft crisis is right around the bend?” Possibly. For that, I would look to one of the possible causes above, and not necessarily to the specific commercial accidents cited. Regardless, commercial airlines tend to be very safe. And it remains for concerned and proactive engineers (as I am sure Lawrence is) to put themselves on the line, to look for, investigate, and prevent future issues. I did it for 40-plus years, and now I pass the baton to Lawrence...

“(What we displayed was) a failure of imagination…”—Frank Borman, circa 1968, regarding the root cause of the Apollo 1 fire.

Richard Lorenz ’73, an aeronautical engineering graduate, lives in the Seattle, Washington, area. He retired after a 44-year aerospace/aviation career. He is a Tech Fellow, Designated Engineering Representative (DER) for the FAA, and DER Advisor.
“As a scholarship recipient, I realize that someone I don’t even know invested in my experience at Rensselaer, and so I have an obligation to take advantage of every opportunity that investment provides. Earning the Takats Scholarship made me realize that as a Rensselaer student—and one day, as a Rensselaer alumna—I’m part of something bigger than myself.”—Cara Porto ’18, School of Architecture

I’m Part of Something Bigger Than Myself

Scholarship support enables students like Cara to dream big, work hard, and tackle the world’s most pressing challenges. Gifts to scholarship do more than change the world for one student—they provide the confidence, tools, and community for incoming students, budding researchers, and future alumni to imagine how they, too, can make a difference and change the world.

One of the three pillars of the Transformative: Campaign for Global Change is “Bridging the Gap” between student need and available financial aid resources. Consider a gift in support of scholarship by making a donation at giving.rpi.edu. Your support helps Rensselaer to provide a world-class educational experience to our students, preparing them to meet the demands and challenges of the 21st century.
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