ON THE COVER:
Researchers at Rensselaer are perfecting network analysis, a powerful data science technique that makes it possible to identify common ground in complex datasets.

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RENSSELAER DINING SERVICES CONTINUOUSLY looks for ways to expand and update its offerings. This summer, the kitchen inside the Student Union McNeil Room was completely gutted in preparation for bringing in a Panera Bread restaurant. Opening this fall, the facility will be a fully functioning Panera with the traditional Panera menu, including the full bakery lineup, with all breads and bakery items baked on-site, as well as soups and sandwiches. The location will be open seven days a week from 7:30 a.m. to 8 p.m. Panera has been one of the most successful restaurant companies in history. What started as one 400-square-foot cookie store in Boston has grown to a system with over 2,000 units, approximately $5 billion in system-wide sales, and over 100,000 associates.
Since the launch of our capital campaign, Transformative: Campaign for Global Change, I, along with leaders from across the Institute, have been traveling across the country and around the world to engage with the Rensselaer community. We have hosted events in New York City, New Jersey, Washington, D.C., Boston, Sarasota, Fort Meyers, West Palm Beach, and Miami. Internationally, we have visited with our alumni and alumnae in Dubai and Zurich.

We have had the great pleasure of talking about how we are educating the next generation of technological leaders, as well as changing the world through our research and pedagogy.

The signs of success are everywhere at Rensselaer. We had the greatest number of applicants for our freshman class in history—20,403—a 5 percent increase over the record-breaking number of applications we received last year. We have admitted the strongest (SAT: 1409) and the most diverse class in our history.

We derive this strength from 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 our students for deep foundational knowledge in their chosen fields—while we also serve as a great crossroads for the exchange of ideas across disciplines, sectors, geographies, and generations. At Rensselaer, we bring together talented people from everywhere to address the greatest of challenges, using the most advanced tools and technologies.

Another key factor is our world-class faculty, which includes members of the National Academy of Engineering, the National Academy of Sciences, and the National Academy of Inventors, several professors who serve on key national panels and committees, hundreds of fellows of technical and professional societies, dozens of early CAREER award recipients, and numerous winners of national and international awards.

To stay on the leading edge in education as well as research, we are adding to our academic offerings in emerging fields. We have a new Bachelor of Science in Music program that began this fall, as well as a new focus on Quantitative Health Economics in our Economics Department. We are developing a new Bachelor of Science program in the Lally School in Quantitative Finance and Analytics; and in the School of Science, a new program of study in Artificial Intelligence and Machine Learning.

Overall, we engage our students with a revolutionary pedagogy that includes the gamification of courses, immersive experiences, and interaction with artificially intelligent characters.

As we do all of this, we encourage new ways of seeing and thinking that cross fields. Recently, we launched an initiative that received a great deal of attention around the nation—a “data dexterity” requirement to ensure that all undergraduates learn how to use diverse datasets to define and solve complex problems. In addition, an initiative we have created, titled Art_X, which focuses on the art in and of science, and the science in and of art, also encourages creativity across disciplines, and domains.

To ready Rensselaer, the oldest technological research university in the nation, for global leadership in the 21st century, we have begun a billion-dollar capital campaign—Transformative: Campaign for Global Change—which has three pillars:

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

- 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.

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

As we consider the world around us, the stakes are high. The opportunities are clear. The urgency is real. The world truly needs that particular combination of qualities that characterize the men and women of Rensselaer—that combination of audacity, creativity, pragmatism, and refusal to be daunted by the scale of a challenge.
Keeping Current

I am so proud to receive the alumni magazine as a graduate of RPI. It is important for us to keep current with the institution's strategic initiatives and remain involved with its faculty and students.

The publication is expertly designed, and its content is always inspiring! It is the high quality I suggest to my alumni relationships with UCONN and CCSU as a model.

Be proud of your teamwork and achievements.

Barbara Vallera ’82
Ellington, Connecticut

Forward Momentum
RPI is a far cry from the Institute that my father, Frederick W. Schwartz, Class of 1905 (later professor of chemistry, 1913-1948), graduated from in 1905; or where I earned my two degrees in 1944 and 1948. I am very happy to have my grandson-in-law, Matthew Romanowicz, attending with a double major in electrical engineering and mechanical engineering and doing extremely well.

Keep up the forward momentum.

Richard Schwartz ’44
Peru, New York

Funding the Future
I appreciate the ideals raised in this article by the President (“Preparing for Our Third Century,” Spring 2018). I agree that more funding can help bring in deserving students and faculty. And, of course, AI is the future and needs encouragement.

I will do my part in contributing to the Transformative Campaign.

Dr. Rakesh Saini, Class of 2020 parent
Arlington, Texas

Class Notes Connections
In my senior year in the Greene Building I realized, as an architectural student, I was a complete flop. But what could I do? If I switched to civil engineering, the list of makeup courses would be so long my G.I. Bill time could run out. Then I might have no degree of any kind.

George Johns ’49, whose class note in the Spring 2018 issue prompted this response from Robert Alexander ’49, is shown with classmates Jack Buckley, Ed MacDuff, Bob Jaros, and their dates celebrating graduation night at the Crooked Lake House.

So I soldiered on through to my B. of Arch. degree. It took over 20 years after leaving RPI that included domestic and overseas engineering experience and two advanced degrees before I became a professor in civil engineering at California State University at Long Beach. I want George Johns (Class of ’49 Notes, Spring 2018) to know that I still have a soft spot in my heart for architecture!

Robert Alexander ’49
Seal Beach, California

Because
Every Day Matters

We have launched a new blog called Every Day Matters, where we’ll share the voices of students, faculty, staff, and alumni who are making a difference. We will present posts on world-changing research, ground-breaking innovations, and creative solutions that push boundaries every day to make our world better.

We hope you will follow us and join the movement.

everydaymatters.rpi.edu

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.
RENSSLEAER HOSTED THE FIRST ANNUAL WORKSHOP on Image-Based Modeling and Navigation for Space Applications in June.

Images collected by spacecraft are one of the primary sources of information for understanding our solar system. These same images may be used to determine the spacecraft’s location. Despite decades of experience with processing space imagery, a number of challenges continue to limit where we explore and how much we learn while there.

This workshop brought together the world’s experts in space-based imaging, modeling, and navigation to share new developments and to identify areas of common need. According to John Christian, assistant professor in aerospace engineering at Rensselaer and the workshop organizer, the workshop “offered a unique opportunity for the entire community to learn from each other. We were pleased to host our colleagues at RPI for this important forum and to share our institution’s rich history in space exploration.”

More than 60 people from 25 national and international organizations attended the workshop, which included presentations from Rensselaer, NASA, the European Space Agency, Johns Hopkins University Applied Physics Laboratory, C.S. Draper Laboratory, KinetX, Jena-Optronik, University of Texas at Austin, University of Colorado Boulder, Stanford University, and many more.

In addition to Rensselaer, the workshop was co-sponsored by the New York Space Grant Consortium and the American Astronautical Society.
Data is a critical building block of a fast-approaching future, and Rensselaer is ensuring that all of its students are adept architects with the adoption of a new institute-wide requirement in data education. The requirement, the first of its kind in the nation, will propel all Rensselaer students beyond the current collegiate standard of “data literacy” to “data dexterity”—proficiency in using diverse datasets to define and solve complex real-world problems.

The data requirement is part of an updated core curriculum—the common academic and non-academic elements that all students must complete to graduate—that reflects the skills and capabilities graduates need to be tomorrow’s global leaders and problem-solvers. Data dexterity is a critical piece of that equation. A 2017 market analysis from the Business Higher Education Forum calls for annual job openings to rise steadily to 2.72 million postings for data science and analytics roles in 2020.

“Our future is increasingly data-driven, and successful leaders must be able to harness the power of data in solving the problems they tackle,” says President Shirley Ann Jackson. “Key elements of that data dexterity are an ability to leverage data to make decisions, to understand the difference between causation and correlation, an understanding of ethical use of data, and how to visualize complex data in ways that emphasize key mechanisms. All Rensselaer graduates will have those skills.”

A “data-intensive sequence” requires all students to complete two “data-intensive” courses; one to establish the foundations of data modeling and analysis, and a second within their academic discipline. Rather than increase the overall number of credit hours students must earn, curriculum on data awareness and exposure will be infused into existing courses that will be designated as “data-intensive.” Building on concepts introduced as part of a National Science Foundation (NSF)-funded pilot program, Rensselaer has also developed new courses and opportunities for students who wish to explore data-driven study, such as a data-centric laboratory experience that connects teams of students with industry partners to tackle a data-intensive problem.

“We educate our students to be leaders in whatever endeavor they seek to pursue, and dexterity in handling large and diverse datasets will be a critical component in their success.”

— PRABHAT HAJELA

The new core curriculum ensures that Rensselaer graduates are creative and critical thinkers who can marry disciplinary expertise with interdisciplinary collaboration. In addition to the “data-intensive” requirement, the new core includes a new requirement for co-curricular activities such as capstone projects within the disciplinary majors, and a Rensselaer enrichment core, including a common reading experience, an away experience, and co-curricular academic and cultural activities, as well as revisions to existing “communication-intensive” requirements and flexible science, humanities, and social sciences course requirements.

“At Rensselaer, we believe that the ability to manage and exploit data is a fundamental skill that all of our graduates should possess,” says Prabhat Hajela, provost. “We educate our students to be leaders in whatever endeavor they seek to pursue, and dexterity in handling large and diverse datasets will be a critical component in their success.”
Making a Difference

Recognizing the Importance of the West Coast Connection

This spring, President Shirley Ann Jackson hosted more than 150 alumni, alumnae, corporate partners, leaders, and friends at an inaugural scholarship gala on the West Coast designed to build upon and strengthen the connections between Rensselaer and more than 8,000 alumni, alumnae, and parents who call California home.

At the West Coast Scholarship Gala, guests of Rensselaer enjoyed an evening of celebrating the importance of student scholarship. Many also participated in immersive activities that began earlier that day, featuring opportunities to connect with faculty, leaders, and students through presentations, research demonstrations, and panel discussions. Additionally, efforts to establish regional networks that will support strengthening the bond among and between the growing cohort of alumni and alumnae, corporate partnerships, and current and incoming students and families was supported with the official launch of the Rensselaer Silicon Valley Network Executive Council. The weekend culminated with a reception for incoming students, family members, alumni and alumnae, and leaders that is annually hosted by Board of Trustees Member Nancy Mueller.

“It is fitting that we gather on the West Coast,” said President Jackson. “The association between California and Rensselaer has become increasingly noteworthy. The devotion of our Rensselaer West Coast community will support a transcontinental model for enhancing accepted and incoming student programs, engaging parents, alumni, and alumnae—many of whom are key leaders in their respective industries—to network on behalf of the Institute and its talented students, and further strengthening corporate alliances across the region.”

Cindi and Curtis R. Priem ’82 were recognized at the event for their transformative campaign gift that enhances faculty and research excellence through the establishment of an endowed Curtis R. Priem ’82 Cognitive and Immersive Systems Constellation. The constellation will support a cohort of multidisciplinary faculty and students forging new frontiers in research, further advancing the world’s understanding of cognitive computing.

The gala also commemorated the West Coast launch of Rensselaer’s capital campaign, Transformative: Campaign for Global Change. Publicly launched in fall 2017, the campaign seeks to raise $1 billion. The campaign’s pillars include improving student access and enhancing the student experience, empowering world-class teaching and world-changing research, and building the third-century campus. Support of this initiative will allow Rensselaer to secure the future for its third century and empower students to change the world for generations to come.

“It’s an exciting time to be ambassadors for Rensselaer,” said Priem. “We are thrilled to be a part of the Rensselaer vision for the future. It’s important for us to have the opportunity to support the enhancement of faculty and research as one of the three key pillars of the campaign.”

If you were unable to attend the West Coast Gala, plan to attend the East Coast Annual Rensselaer Scholarship Gala in New York City on October 24. For more information, visit giving.rpi.edu/gala/east.

Above (l-r): Oliver Feagin ’21, Rebecca Wilen ’19, and Gino Gasbarro ’19. Part of the weekend festivities included a CLASS Alive! Luncheon where these three current students shared their Rensselaer experiences. Feagin and Gasbarro are both California natives, and Wilen completed a summer internship in the Bay Area.

At left (top): Reception for new students hosted by Trustee Nancy Mueller; (bottom, l-r): Curtis and Cindi Priem, Board of Trustees Chairman Arthur Golden ’66, and President Jackson.
One year after researchers published their work on a physiological test for autism, a follow-up study confirms its exceptional success in assessing whether a child is on the autism spectrum. A physiological test that supports a clinician’s diagnostic process has the potential to lower the age at which children are diagnosed, leading to earlier treatment. Results of the study, which uses an algorithm to predict if a child has autism spectrum disorder (ASD) based on metabolites in a blood sample, appeared in the June edition of Bioengineering & Translational Medicine. “We looked at groups of children with ASD independent from our previous study and had similar success. We are able to predict with 88 percent accuracy whether children have autism,” says systems biologist Juergen Hahn, lead author, and professor and head of biomedical engineering. “This is extremely promising.” It is estimated that approximately 1.7 percent of all children are diagnosed with ASD, characterized as “a developmental disability caused by differences in the brain,” according to the Centers for Disease Control and Prevention. Earlier diagnosis is generally acknowledged to lead to better outcomes as children engage in early intervention services, and an ASD diagnosis is possible at 18 to 24 months of age. However, because diagnosis depends solely on clinical observations, most children are not diagnosed with ASD until after 4 years of age. Rather than search for a sole indicator of ASD, the approach Hahn developed uses big data techniques to search for patterns in metabolites relevant to two connected cellular pathways (a series of interactions between molecules that control cell function) with suspected links to ASD. The new study applies Hahn’s approach to an independent dataset. To avoid the lengthy process of gathering new data through clinical trials, Hahn and his team searched for existing datasets that included the metabolites he had analyzed in the original study. The researchers identified appropriate data from three different studies that included a total of 154 children with autism conducted by researchers at the Arkansas Children’s Research Institute. The team used their approach to recreate the predictive algorithm, this time using data of the 22 metabolites from the original group of 149 children. The algorithm was then applied to the new group of 154 children for testing purposes. When the predictive algorithm was applied to each individual, it correctly predicted autism with 88 percent accuracy. “The most meaningful result is the high degree of accuracy we are able to obtain using this approach on data collected years apart from the original dataset,” says Hahn. “This is an approach that we would like to see move forward into clinical trials and ultimately into a commercially available test.”
An automatic door control system, an emergency response drone, a specialized drawing board, a planter system that cleans the air, a product to prevent plaque regrowth on surgical stents, and a novel use of gamification for community security are all winners of the spring 2018 Change the World Challenge student innovation competition.

Kapshur Medical Devices earned the “Best of the Best” honor and a $5,000 grand prize with its aims to conquer restenosis (subsequent plaque buildup) in patients receiving stents to treat artery disease. This supplemental add-on device will reduce the number of repeat surgeries needed for the 1 million Americans receiving traditional cardiac or peripheral stents annually. The device was created by Kapila Chandramouli ’18, a mechanical engineering major.

The Change the World Challenge entrepreneurship competition is a twice-yearly event created to support entrepreneurship education and inspire Rensselaer students to develop their unique ideas into a viable business concept. The winning students and student teams who develop innovative ideas and inventions each receive a prize of $1,000. Patent application assistance is also available for the winning student proposals when applicable.

Established in 2005 by Rensselaer alumnus and entrepreneur Sean O’Sullivan ’85, the Change the World Challenge competition has helped to validate more than 150 new student ideas. The competition is overseen by the Paul J. ’69 and Kathleen M. Severino Center for Technological Entrepreneurship in the Lally School of Management. Students involved in the competition develop ideas that have the potential to improve human life through innovative and sustainable solutions.

“The Change the World Challenge is an excellent way to encourage students to develop and grow innovative ideas for businesses. The Severino Center does an excellent job running this competition, not just with the final event but also in working all semester with the students to prepare their entrepreneurial ideas,” says Thomas Begley, dean of the Lally School of Management. “Sean O’Sullivan’s generous contribution makes this competition possible. Through his own career, he stands as a role model for students thinking about becoming entrepreneurs.”

“It is great to see student entrepreneurs changing the world through entrepreneurship,” says Jason Kuruzovich, academic director of the Severino Center. “Entrepreneurship is the vehicle by which so many of our alumni have brought lasting change to the world.”

“...encourage students to develop and grow innovative ideas for businesses.”

— THOMAS BEGLEY
CAROLINA MOTTER CATARINO, a graduate student in chemical and biological engineering, has been awarded £10,000 from the Lush Prize, which is a collaboration between cosmetics company Lush and research organization Ethical Consumer. As the largest prize fund for the complete replacement of animal experiments, it funds projects working to end animal research in chemical testing.

Catarino’s research focuses on enhancing the complexity of reconstructed skin models through substitution and diversification of non-animal derived scaffold materials, inclusion of additional cells compared to traditional models, and generation of follicular structures, all using 3D bioprinting. This technology allows the precise placement of the bioinks containing scaffold components and cells at appropriate locations within the 3D skin tissue. This project can help in the development of the next generation of skin models for screening of chemical compounds as well as clinically superior skin grafts.

“Carolina is an exceptionally motivated and talented young scientist,” says Pankaj Karande, associate professor of chemical and biological engineering and Catarino’s adviser. “She combines her passion for research with diligence to find impactful solutions for human health. Her doctoral thesis on 3D printing of human skin has the potential to develop human-relevant models for efficacy testing while reducing the dependence on animals in research.”

Rechargeable lithium-ion, the dominant battery technology for portable electronics, is increasingly becoming the battery of choice for electric-vehicle and electric-grid energy-storage applications.

In a lithium-ion battery, the cathode (positive electrode) is a lithium metal oxide while the anode (negative electrode) is graphite. But researchers are looking for ways to replace graphite with lithium metal as the anode to boost the battery’s energy density. Since the packing density of lithium atoms is the highest in its metallic form, batteries that use metallic lithium anodes can pack more energy per weight or volume than graphite-based anodes. However, lithium metal anodes are plagued by “dendrite” buildup that takes place over repeated cycles of charging and discharging.

Dendrites are branchlike protrusions that emanate out of the lithium metal surface. Often, they grow long enough to create a short circuit between the electrodes, leading to a fire hazard.

But now a team of researchers at Rensselaer has discovered a way to use internal battery heat to diffuse the dendrites into a smooth layer.

“We have found that lithium metal dendrites can be healed in situ by the self-heating of the dendritic particles,” says Nikhil Koratkar, the John A. Clark and Edward T. Crossan Professor of Engineering.

A battery device is comprised of two electrodes—the cathode and the anode. Placed in between the electrodes is an insulating membrane that acts as a separator to prevent the electrodes from touching each other and shorting out the battery. The separator is saturated with a liquid electrolyte, which allows ions (charged atoms) to shuttle back and forth between the electrodes.

Chemical reactions produce electricity when positively charged lithium ions from the anode are transported to the cathode when discharging. When the battery is plugged into an outlet to recharge, the reverse happens: The lithium ions flow from the cathode back to the anode.

In a battery with a lithium metal anode, repeated cycles of discharging and recharging cause dendrite buildup on the anode’s surface. This thorny buildup can eventually penetrate the separator and touch the cathode. When this happens, a short circuit takes place that renders a battery inoperable, or worse, causes a fire.

“Lithium-ion batteries with carbon-based anodes are the best available option, but they can no longer keep up with the storage-capacity demand,” Koratkar says. “For any significant new improvements, we must look elsewhere. The best option would be a lithium metal system.”
Powerful hurricanes and earthquakes have wreaked havoc in the United States and around the world in recent years, often leaving people stranded for months and even years without access to water, food, and shelter. A unique collaborative project at Rensselaer seeks to provide a sustainable solution, while also considering the environment.

After a disaster strikes, first responders and other aid organizations mobilize to send needed supplies such as water, food, and medicine. Bottled water is sent by the tons, but all too often, the empty plastic bottles end up in the trash stream.

The goal of the project is to re-use the empty bottles to construct and structurally test different structural components (walls, columns, and roofs) and then design and build a prototype for emergency shelters for displaced populations under conditions of distress.

Students and faculty in the Schools of Engineering and Architecture are conducting a multifaceted research project that includes structural and architectural design, along with strength analysis, of revolutionary transitional shelter designs built using the patented plastic interlocking bottles of Friendship Products LLC, led by inventor Timothy Carlson. The collaborative team is led by Mohammed Alnaggar, assistant professor of civil and environmental engineering, and Lydia Kallipoliti, assistant professor of architecture.

According to Kallipoliti, the design studio, Second Lives | After Bottles, functions as a design-build think tank, bringing together architecture and engineering students and professors in a cross-disciplinary platform to work collaboratively and create innovative strategies for material recycling.

The aim is to foster dialogue on topics relating to recycling of industrial products as building materials and on sustainable building construction. “During the design studio, we are investigating several prototypes presenting variable solutions of construction and deconstruction of small inhabitable spaces using the bottles manufactured by Friendship LLC,” says Kallipoliti.

The idea is to use the bottles as sturdy, low-cost, easily assembled building blocks. Each modular unit slide-locks with other units to form strong wall and building structures that can be filled with dirt, sand, or other materials to form a sturdy structure without the use of mortar. The Friendship bottles are able to interlock without joints due to their embedded creases.

“This project presents a unique collaboration to optimize function and shape,” says Alnaggar. “The structural engineering research focusing on studying all the mechanics of the interlocking between the bottles and its scaling up to the full structural scale provides the architectural engineers with the needed properties to create not only an aesthetically appealing structure, but also a structurally sound and safe one.”
To celebrate its 40th anniversary, the Center for Communication Practices has announced a broader vision as well as a new name: the Center for Global Communication and Design, known informally as Comm+D. The center, located on the first floor of Folsom Library, was established in 1978 as The Writing Center to offer communication assistance to the Rensselaer community.

For four decades the center has offered one-on-one consultation to students, faculty, and staff in preparing written, oral, and electronic communication projects. Now the center is expanding its areas of teaching, research, and service beyond writing and oral communication to include various types of visual communication including illustrations, interface design, video and animation storyboards, and multisensory data representation.

In addition, workshops and discussions with international scholars will highlight research in different areas of communication and inform pedagogical initiatives that prepare students to communicate effectively in diverse global contexts.

This summer, the center began operating year-round in support of The Arch program’s new academic summer semester, providing mentoring, research presentations, and professional workshops. Also, the Summer Academic Program for International Students (SAPRIS), which welcomes international students to Rensselaer and to American academic culture, has moved under the Comm+D umbrella.

In June, Comm+D partnered with the Lally School of Management, the Rensselaer Institute for Data Exploration and Applications (IDEA) / Health INCITE, and the Cognitive and Immersive Systems Lab (CISL) to present the 2018 Rensselaer Cognitive and Immersive Data Insights Application Challenge. More than 40 undergraduate and graduate students competed in this inaugural challenge to create immersive, multimodal, collaborative applications using health and business datasets.

In addition to cash awards, winning teams were presented with opportunities for ongoing interdisciplinary research.

“Multimodal and cross-cultural communication are areas of focus at Comm+D,” says Patricia Search, center director. “Interdisciplinary research and collaborations, such as this year’s Cognitive and Immersive Data Insights Application Challenge, create opportunities for students to explore innovative ways to use communication design and new technologies to present information to diverse audiences in a global society.”

Search is a professor in the Department of Communication and Media and a designer of interactive multimedia installations that explore the aesthetics of space, time, and action in multisensory design. Barbara Lewis, lecturer in the Department of Communication and Media, is the communication practices lead faculty in the center with expertise in writing in disciplines. Center staff include graduate teaching assistants and undergraduate mentors who have significant experience in composing and responding to many types of either written or visual work.

“Interdisciplinary research and collaborations create opportunities for students to explore innovative ways to use communication design and new technologies to present information to diverse audiences in a global society.”

— PATRICIA SEARCH
A major byproduct in the papermaking industry is lignosulfonate, a sulfonated carbon waste material, which is typically combusted on site, releasing CO2 into the atmosphere after sulfur has been captured for reuse.

Now researchers at Rensselaer have developed a method to use this cheap and abundant paper biomass to build a rechargeable lithium-sulfur battery. Such a battery could be used to power big data centers as well as provide a cheaper energy-storage option for microgrids and the traditional electric grid.

“Our research demonstrates the potential of using industrial paper-mill byproducts to design sustainable, low-cost electrode materials for lithium-sulfur batteries,” says Trevor Simmons, a Rensselaer research scientist who developed the technology with his colleagues at the Center for Future Energy Systems (CFES). He has patented the process with former graduate student Rahul Mukherjee, Ph.D. ’14.

Rechargeable lithium-ion batteries currently are the dominant battery technology. In recent years, however, much interest has grown around developing lithium-sulfur batteries, which can have more than double the energy of their lithium-ion counterparts of the same mass.

A rechargeable battery has two electrodes—a positive cathode and a negative anode. Placed in between the electrodes is a liquid electrolyte that serves as a medium for the chemical reactions that produce electric current. In a lithium-sulfur battery, the cathode is composed of a sulfur-carbon matrix, and a lithium metal oxide is used for the anode.

In its elemental form, sulfur is nonconductive, but when combined with carbon at elevated temperatures, it becomes highly conductive, allowing it to be used in novel battery technologies. The challenge, however, is that sulfur can easily dissolve into a battery’s electrolyte, causing the electrodes on either side to deteriorate after only a few cycles.

Researchers have used different forms of carbon, such as nanotubes and complex carbon foams, to confine the sulfur in place, but with limited success.

“In repurposing this biomass, the researchers working with CFES are making a significant contribution to environmental preservation while building a more efficient battery that could provide a much-needed boost for the energy storage industry.”

— MARTIN BYRNE

“Our method provides a simple way to create an optimal sulfur-based cathode from a single raw material,” Simmons says.

To develop their method, the Rensselaer researchers partnered with Finch Paper in Glens Falls, which provided the lignosulfonate. This “brown liquor” (a dark syrupy substance) is dried and then heated to about 700 degrees Celsius in a quartz tube furnace.

The research team has so far created a lithium-sulfur battery prototype that is the size of a watch battery, which can cycle about 200 times. The next step is to scale up the prototype to markedly increase the discharge rate and the battery’s cycle life.

“In repurposing this biomass, the researchers working with CFES are making a significant contribution to environmental preservation while building a more efficient battery that could provide a much-needed boost for the energy storage industry,” says Martin Byrne, CFES director of business development.

Initial funding for the research came from the New York State Pollution Prevention Institute (NYSP2I). The research team then secured a Bench to Prototype grant from the New York State Energy Research and Development Authority, administered through NY-BEST (New York Battery and Energy Storage Technology), to more fully develop the technology.
DoE Awards $1.8 Million for Solar Power Systems Research

LI (EMILY) LIU, ASSOCIATE professor of nuclear engineering and engineering physics, has been selected by the U.S. Department of Energy Solar Energy Technologies Office to receive a $1.8 million award to study high-temperature molten-salt properties and corrosion mechanisms. This award is part of a $72 million funding program to advance concentrating solar power (CSP) research, a power plant technology that could reduce the cost of solar energy.

CSP systems supply solar power on-demand through the use of thermal storage. CSP technologies use mirrors to reflect and concentrate sunlight onto receivers that collect solar energy and convert it to heat. Thermal energy can then be used to produce electricity via a turbine or heat engine driving a generator. Types of CSP technologies include power towers, mirrored dishes, and linear mirrors.

The Generation 3 Concentrating Solar Power Systems (Gen3 CSP) funding program will build on prior research for high-temperature concentrating solar thermal power technologies. Projects will focus on developing components and integrated assembly designs with thermal energy storage that can reach high operating temperatures, with a target of at least 700 degrees C, which would boost the efficiency and lower the cost of the electricity.

Molten salt is used both as a heat transfer fluid and as a thermal energy storage medium in a power tower CSP system, according to Liu. "The molten salt mixture is both non-toxic and inert, and it can deploy inexpensive and scalable thermal storage, thereby enabling cost-effective 24-hour electricity generation using only solar energy," she says.

However, molten salts, which contain impurities such as oxygen and moisture, can be very corrosive at high temperatures (550 to 700 degrees C), and can eat away the common alloys used to produce the heat exchangers, piping, and storage vessels in CSP systems.

Liu’s research aims to fill the knowledge gaps in salt properties and gain a fundamental understanding of corrosion mechanisms, which will help guide the selection of salts and containment materials for CSP systems.

“The salt chemistry, as well as its corrosion, must be understood before the system and component design because the material choice may differ with the salt properties identified,” says Liu.

Working with project collaborators Robert Hull, the Henry Burlage Jr. Professor of Engineering at Rensselaer, and Professor Jinsuo Zhang from Virginia Tech, Liu will use state-of-the-art and new technologies to develop in-situ corrosion kinetics and salt property measurements.

The results of this research will lead to new and innovative approaches in the associated technologies, and insights into the molten salt and containment material aspect of solar energy, says Liu.
The world's most advanced environmental monitoring system—developed through The Jefferson Project at Lake George—is being used to understand and protect Skaneateles Lake, a central New York drinking water source now threatened by toxic algae. Building on a connection through the New York State Harmful Algal Bloom (HABs) Initiative launched in late 2017, the Jefferson Project installed a custom-designed robotic sensing platform on Skaneateles, and began collecting data just prior to an early-August HABs event this year.

The Jefferson Project at Lake George is a partnership between IBM Research, Rensselaer, and The FUND for Lake George that combines advanced technology with science and advocacy to understand human impacts on freshwater and address the world’s looming freshwater supply challenges. The sensing platform, called a “vertical profiler,” is part of a four-month pilot project the Jefferson Project has undertaken in cooperation with the Skaneateles Lake Association and the Upstate Freshwater Institute.

“The ability to protect the natural resources of our planet, with freshwater vital among them, is one of the greatest challenges we face collectively across the globe,” says President Shirley Ann Jackson. “The Jefferson Project is pioneering a new approach and new tools that pinpoint the cause of threats to freshwater and empower policymakers to enact solutions backed by the insights of science. We are pleased to offer the advanced technology of the Jefferson Project to local researchers working to protect Skaneateles Lake.”

Knowledge gained during the pilot project will aid Skaneateles Lake, while informing local and regional groups on Lake George and other Adirondack lakes seeking to prevent or react to harmful algal blooms. The Jefferson Project will collaborate with Skaneateles-area academic and government researchers, supported by the unparalleled data collection and modeling capabilities the Jefferson Project has developed.

Since late July, the vertical profiler has been collecting environmental data, including measurements of weather, circulation, and water quality, and includes sensors capable of detecting phycocyanin, a pigment present in harmful algae. In collaboration with Skaneateles Lake regional experts, Jefferson Project researchers are in the process of analyzing a limited amount of data that was collected in relation to the 2018 HAB occurrence.

“The Skaneateles Lake Association is thrilled that the Jefferson Project from Lake George has deployed a vertical profiler buoy on Skaneateles Lake to support and enhance the important monitoring already in progress as part of our effort to help protect Skaneateles Lake,” says Paul Torrisi, president of the Skaneateles Lake Association.

“The Jefferson Project is pioneering a new approach and new tools that pinpoint the cause of threats to freshwater.”

— PRESIDENT SHIRLEY ANN JACKSON
Students Share First Place in AIAA Paper Competition

The American Institute of Aeronautics and Astronautics (AIAA) Multidisciplinary Design Optimization student paper competition was held at the 2018 AIAA Aviation Forum in Atlanta, Georgia, June 25-29. Two Aeronautical Engineering students shared first place for their paper on accident mitigation strategies for nuclear power plants.

The U.S. Department of Energy (DOE) has announced nearly $64 million in awards for advanced nuclear energy technology to DOE national laboratories, industry, and 39 U.S. universities in 29 states. Rensselaer has been awarded $800,000 for analysis of nuclear power plants’ accident propagation and mitigation processes.

“Because nuclear energy is such a vital part of our nation's energy portfolio, these investments are necessary to ensuring that future generations of Americans will continue to benefit from safe, clean, reliable, and resilient nuclear energy,” says Ed McGinnis, DOE's principal deputy assistant secretary for nuclear energy.

The award is part of the DOE's Nuclear Energy University Program (NEUP), which aims to maintain U.S. leadership in nuclear research across the country by providing top science and engineering faculty and their students opportunities to develop innovative technologies and solutions for civil nuclear capabilities.

As a result of the Fukushima Daiichi nuclear disaster in 2011, new safety upgrades for existing Light Water Reactors (LWRs) are being developed, which include Accident Tolerant Fuel (ATF) and diverse and flexible coping strategies (FLEX). These safety features are expected to extend a plant's coping time and mitigation capability in an accident. The Rensselaer project, titled “Coping Time and Cost Analysis of Accident Tolerant Plant Design Based on Dynamic PRA Methodology,” is aimed at the systematic operation strategy development based on dynamic response analysis in consideration of FLEX and ATF upgrades of nuclear power plants. This framework can extend to be used at any additional safety enhancement in the future.

Hyun Gook Kang, associate professor of mechanical, aerospace, and nuclear engineering at Rensselaer, is the principal investigator.

“Both FLEX and ATF are expected to extend the accident coping time in nuclear power plants, thanks to FLEX's additional emergency response capability and ATF's enhanced performance against oxidization under a higher temperature steam environment,” says Kang. “However, they may introduce new failure mechanisms and associated uncertainties which were less investigated. The awarded research is aimed at the evaluation of the coping time variation under uncertainties in accident mitigation in nuclear power plants. The result will contribute to the development of a new accident mitigation strategy of nuclear power plants under extreme conditions such as natural disasters.”

TWO AERONAUTICAL ENGINEERING students shared first place in the 2018 American Institute of Aeronautics and Astronautics (AIAA) Multidisciplinary Design Optimization student paper competition. Graduate students Jared Crean and Alp Dener tied for first place and were each awarded $1,500.

The winners were announced at the 2018 AIAA Aviation Forum, which took place in Atlanta, Georgia, June 25-29. The competition was administered by the Multidisciplinary Design Optimization (MDO) Technical Committee of the AIAA and sponsored by the NASA Glenn Research Center.

Finalists were judged based on their paper as well as a 20-minute oral presentation given at the conference. Judges also assessed the originality of the work and its importance to the field.

Both Crean and Dener performed their research in the lab of Jason Hicken, associate professor of mechanical, aerospace, and nuclear engineering. Hicken is director of the Optimal Design Lab, which seeks to improve the design process of complex engineering systems. The lab’s research focus is partial-differential-equation (PDE)-governed design optimization: the synthesis of high-fidelity numerical simulations, computational geometry, and optimization algorithms.

Dener earned his doctorate at Rensselaer in December 2017 and is pursuing postdoctoral research at the Argonne National Laboratory. Crean continues his studies at Rensselaer.

“This year’s competition was very tough, with many excellent papers, so I am obviously very proud of both Alp and Jared,” says Hicken.
Grant O’Connor Named Men’s Track National Athlete of the Year

Student-athlete Grant O’Connor has been named the NCAA Division III National Men’s Track Athlete of the Year, earning the highest honor awarded by the United States Track & Field and Cross Country Coaches Association (USTFCCCA). The junior is the first from Rensselaer to ever be selected.

O’Connor culminated the 2018 campaign by collecting the most points by an individual (18) at the NCAA Division III Outdoor Championship, including a National Championship in the 5000 meters. He was second in the 10,000-meter run, helping Rensselaer to a school-record fifth-place team finish.

“I have had the honor of working with some of the top student athletes in the world while serving as an athletics administrator,” says Lee McElroy, associate vice president and director of athletics. “Grant O’Connor stands among the best, not only for his athletics prowess but his academic and leadership excellence. His feats made history at Rensselaer and established a standard that will permeate our entire athletics program.”

O’Connor backed up his runner-up in the 10,000 by edging out Will McDermott of Widener University at the wire in the 5000 to earn his first individual national title. He ran a 14:26.03, which included a 59.94 second final lap, to narrowly clip McDermott, who took a brief lead at the final turn. A final push over the last 50 meters and a lean at the finish line gave O’Connor the victory by just 0.03 seconds.

In the 10,000, O’Connor finished in 30:17.88, which was 30 seconds behind champion Dhruvil Patel from North Central College and 14 seconds ahead of McDermott. He finished with negative splits over his final six laps, closing out the race with a 1:09.44 final 400 meters. He opened with a 1:15.70—his slowest lap out of the 25 and then did not stray outside of 71-75 seconds the rest of the way.

O’Connor’s outdoor season also included victories in the 5000 meters at the Liberty League Championship (15:01.46) and in the 10,000 meters at Bucknell University, where he established an NCAA Division III best time of 29:19.53. He was second in the 1500 at Tufts University (4:01.59) and third in the same event at the league meet (3:59.14). O’Connor, a captain, also ran in the 5000 meters at The Penn Relays, finishing in 14:10.60 to qualify for the NCAA Championship.
**Game Design Program Among Top 10 Nationwide**

Video games represent one of the largest and fastest-growing entertainment industries in the world. Beyond games, today's interactive technology also helps shape how young people learn, drives national defense strategies via computer simulations, and assists training efforts in biomedicine, physical fitness, anti-terrorism, and much more.

The highly regarded Games and Simulation Arts and Sciences (GSAS) program is a leader in games studies, and rankings released recently by *Animation Career Review* attest to that: The program was ranked No. 9 nationally on the list of top game design programs in the United States and No. 7 nationally among schools offering a bachelor of science degree in game design.

Among East Coast colleges and universities, Rensselaer is ranked at No. 4; on the list for private schools and colleges, Rensselaer is ranked No. 7; and among programs offered in New York state, No. 3.

Two recent GSAS graduates, Ben Caulkins and Sam Suite, founded a video game company that was named a finalist in the college game competition at the Electronic Entertainment Expo, or E3, in Los Angeles. The company, called Dang!, has developed several video games, including IO Interloper, a “corporate espionage hacking game” that was recognized in March when it was also an awards finalist at the Independent Games Festival in San Francisco.

The GSAS program was established at Rensselaer in 2007. Students in the program gain an understanding of games from the broadest possible range of perspectives, studying fields as diverse as electronic arts, artificial intelligence and cognitive science, digital graphics, software development, psychology, human-computer interaction, and computer graphics in communication and the arts.

“Rensselaer is a uniquely rich environment for games studies, and our GSAS degree program provides an undergraduate experience like few others available anywhere in the country,” says Mary Simoni, dean of the School of Humanities, Arts, and Social Sciences, which houses GSAS. “Our program draws on RPI’s Computer Science, Cognitive Science, Arts, Communication and Media, and Science and Technology Studies departments—a combination of resources few other games programs can even claim, let alone match.

“GSAS emphasizes a deep theoretical foundation along with collaborative, interdisciplinary teamwork, which is how games are actually created,” she says. “This equal emphasis on theory and practice means that students graduate fully prepared to work in the games industry, and the program enjoys a considerable success rate in post-graduate employment.”

**Moody’s Affirms Positive Credit Rating**

MOODY’S INVESTORS SERVICE HAS affirmed Rensselaer’s creditworthiness as A3, citing its large scale of operations, healthy student demand for its technology-oriented programs, growing net tuition revenue, strong fundraising, and President Shirley Ann Jackson’s transformative leadership.

The rating measures an institution’s ability to repay borrowed capital; the higher the rating, the less it costs to borrow. Moody’s ratings range from Aaa to C, with numbers added within each grade for further differentiation.

The Moody’s report on Rensselaer’s credit rating is a strong endorsement of Rensselaer’s market-relevant transformation and “strongly positive” operating performance. The report cites as credit strengths the large scale of operations with over $400 million in revenue, which provides economies of scale; consistently strong fundraising under the leadership of a long-standing president; and improved operating performance with strongly positive cash flows expected to continue.

The stable outlook reflects expectations that Rensselaer will maintain its solid student demand, strongly positive operating performance, and debt service coverage.

“RPI will continue to achieve strong operating performance given its dedicated fiscal oversight and revenue growth,” Moody’s wrote.

According to the Moody’s report, “RPI’s strategic positioning is very good given its student market, consistent investment in facilities, and steady improvement in market reputation and profile. Its diversified programmatic offerings provide broad stability in the event of a downturn in any single area. The Institute’s market profile continues to strengthen under the leadership of a transformative president, as evidenced by expanded geographic diversification of the student body, improving academic caliber of entering students, application increases, while maintaining a very high student retention rate.”

The report also cited the strong leadership team, which is making investments to improve long term strategic positioning. “RPI benefits from a strong senior leadership team and stable board composition, with a forward-looking focus on growing and adapting its business and continually improving the Institute’s brand.”
The day before Commencement 2018, students, families, guests, and the campus community had the opportunity to listen to a fascinating, wide-ranging conversation with the Commencement honorary degree recipients, led by President Shirley Ann Jackson. The two-hour discussion covered topics ranging from music to motorcycles, to terrorism and trust, to science and social media. Four innovative leaders from the worlds of music, advanced global manufacturing, international security, and genomic science joined President Jackson at the President’s Commencement Colloquy on May 18 in the concert hall of the Curtis R. Priem Experimental Media and Performing Arts Center. The Colloquy was titled “Breaking Paradigms and Transcending Borders: Transformative Leadership in the 21st Century.”

Herbie Hancock, the legendary jazz pianist and composer, has brought forth innovations in jazz and combined a passion for engineering and science with music. Rensselaer alumna Alicia Boler Davis ’98, executive vice president of General Motors Global Manufacturing, is one of the most powerful women in global advanced manufacturing. The Honorable Mary Jo White, former U.S. Attorney for the Southern District of New York and chair of the United States Securities and Exchange Commission and, currently, senior chair at the law firm Debevoise & Plimpton, oversaw major prosecutions of international terrorists and white-collar crime. Dr. Eric Lander, president of the Broad Institute of MIT and Harvard, is a leading authority on genomic science, which has opened the door for groundbreaking innovations in disease diagnosis and treatment. He was a principal leader of the Human Genome Project.

“At Commencement tomorrow, we will offer honorary degrees to four leaders who have something important in common: a bold and original willingness to cross barriers and borders that other people would not cross, to explore the unknown, to open doors, and to shape the future,” said President Jackson. “They all are pioneers.”

President Jackson began the conversation by asking, “How did you all come to recognize your true callings and how did your initial training enable you to transform an unrelated field?”

“I got to the end of grad school and realized I love mathematics, but couldn’t see doing it for my life,” said Dr. Lander. “I wanted to do something more worldly.

“I fell in love with genetics,” he continued. “I had no plan, I just fell into it. It was a brilliant move to bring mathematics into this human genome project. I found wonderful people to work with, and interesting places.”

Hancock’s professional career in jazz began when he was still a student at Grinnell College, where he double-majored in music and electrical engineering. “I have had this curious mind as long as I can remember,” he said. “I knew growing up, I liked to tinker.”

“I knew growing up, I liked to tinker,” said Boler Davis. “A teacher said, ‘you are good at math and science. You should be an engineer.’ I knew for me to stay out of trouble, I needed something challenging.”

Mary Jo White served as U.S. Attorney for the Southern District of New York, the only woman to hold that position in the 200-year-plus history of that office.

“I come from a family of lawyers,” White said. “The men, not the women. My father said what a great lawyer I’d be. I wanted to be a scientist.” She went to school for psychology, earning undergraduate and graduate degrees before turning to law school.

When President Jackson asked how has psychology helped her in the law, White responded: “Before I went to Washington to chair the SEC, my answer would have been ‘not at all.’ Once I got to Washington, it was all about psychology!”

The conversation touched upon social media amplification and consequences; the need for transparency; public trust in science, in government, and in industry; the difference between “good science” and “good people”; the evolution of jazz; and much more.

“I knew growing up, I liked to tinker.

A teacher said, ‘you are good at math and science.

You should be an engineer.’”

— ALICIA BOLER DAVIS ’98
Enzymes found in nature can break down certain plastics, but not well enough to support industrial recycling and stem the scourge of plastic waste. Building on what nature has provided, researchers at Rensselaer have improved the efficiency of a leaf and branch compost cutinase that breaks down polyethylene terephthalate (PET), the plastic used in clear and colored plastic water bottles and many other products. Researchers believe the enzyme can be further refined, offering a promising candidate to fuel limitless recycling of PET and possibly other plastics such as cellulose acetate.

In work published in the journal *Biochemistry*, the researchers used yeast cells to express the leaf and branch compost cutinase (LCC) modified by the addition of sugar molecules—or glycans—in two locations. The “glycosylated” modified enzyme retained at least half of its activity after 48 hours at 75 degrees Celsius, versus a previously reported half-life of 40 minutes for the unmodified enzyme at 70 degrees Celsius.

“We need plastics and other materials that retain good performance and, after use, can then be broken down by safe and mild processes to their original building blocks for reuse,” says Richard Gross, Constellation Professor of Biocatalysis and Metabolic Engineering and lead author of the research. “The goal should be zero waste and to do that, we have to build reuse into the design of a wide range of polymers and materials. This is an encouraging step toward that goal.”

With existing technologies, a plastic bottle isn’t so much recycled as down-cycled. After a single use, a high percentage of PET bottles go directly to landfills or are reused as other plastics such as PET fibers and fleece for clothes, carpets, bags, furniture, and packing materials. Eventually, down-cycled PET makes its way to landfills or other undesirable environments such as oceans and lakes, a fate many consumers are unaware of as they toss their water bottles in a recycling bin.

Breaking PET down into its building blocks would enable the limitless reuse more commonly associated with other recyclable materials such as glass and metal. Some naturally occurring enzymes can break down PET, but not within the constraints of time and temperature required by an industrial recycling process. Many enzymes lose their activity at higher temperatures, and eventually denature. An enzyme suitable for industrial recycling must be able to operate at optimal temperature for breaking down PET, which is about 75 degree Celsius, and it must retain its activity long enough to do its job cost-effectively at that temperature.

“This cutinase is an excellent candidate for commercialization, but this work will also help us redesign other cutinases to break down other polymers, and that’s a much larger end game,” says Gross.
JENNIFER PAZOUR, assistant professor of industrial and systems engineering, has won a Faculty Early Career Development Award (CAREER) from the National Science Foundation (NSF). She will use the five-year, $500,000 award to study “Distribution Resource Elasticity: A New Hierarchical Approach for On-Demand Distribution Platforms.” The CAREER Award is given to faculty members near the beginning of their academic careers and is one of the most competitive awards given by the NSF to junior faculty. Pazour has also been named an inaugural recipient of the Johnson & Johnson Women in STEM²D Scholars Award.

Nanomaterials expert Ganpati Ramanath, the John Tod Horton ’52 Professor of Materials Science and Engineering, has been named a fellow of the Materials Research Society “for developing creative approaches to realize new nanomaterials via chemically directed nanostructure synthesis and assembly and for tailoring interfaces in electronics and energy applications using molecular nanolayers.”

Meng Wang, assistant professor of electrical, computer, and systems engineering, has won a Young Investigator Program award from the Army Research Office. Wang will use the three-year, $360,000 grant to develop methods to extract useful information from complex data that could lead to improved image classification and object identification in modern surveillance systems. The Young Investigator Program award is one of the most prestigious honors bestowed by the Army on scientists beginning their independent careers.

Tribology expert John Tichy, professor of mechanical, aerospace, and nuclear engineering, has received the Donald Wilcock Distinguished Service Award from the Tribology Division of the American Society of Mechanical Engineers. Tichy is the seventh recipient of the award, which was established in 1989 to honor “distinguished service to the Tribology Division and the tribology community throughout the recipient’s career.”

Jian Sun, professor of electrical, computer, and systems engineering and director of the New York State Center for Future Energy Systems, received the 2017 R. David Middlebrook Outstanding Achievement Award from the IEEE Power Electronics Society. He was recognized for “contributions to modeling and control of power electronic converters and systems.” An international authority in modeling and control of power electronics, Sun has performed pioneering work in the theory and application of sequence impedance methods for three-phase power electronics.

For the second year in a row, earthquake engineering experts Ricardo Dobry, Institute Professor and director of the Center for Earthquake Engineering Simulation, and Tarek Abdoul, the Thomas Iovino Chaired Professor in Civil and Environmental Engineering, have been selected by the Geo-Institute of the American Society of Civil Engineers to receive the Thomas A. Middlebrooks Award. Their winning paper, “Two Case Histories Demonstrating the Effect of Past Earthquakes on Liquefaction Resistance of Silty Sand,” was published in the June 2017 issue of the Journal of Geotechnical and Geoenvironmental Engineering. Lead author was their former doctoral student Waleed El-Sekely, Ph.D. ’14.

Harry Roy, professor of biological sciences, died on July 12, 2018. A longtime member of the faculty, he made significant contributions to Rensselaer through the years. In his research, he was a leader in elucidating the assembly and functioning of the key photosynthetic enzyme, ribulose bisphosphate carboxylase/oxygenase (Rubisco). His work was supported by federal agencies and published in the top journals of the field. He also developed a writing intensive course, converted his lectures to multimedia formats, and incorporated integrated problem sessions, computer simulations, and discussions into his courses. Recently, he was instrumental in the design of Introduction to Biology as a course for every student, major and non-major.

Jian Shi, assistant professor of materials science and engineering, has won a Young Investigator Research Program award from the Air Force Office of Scientific Research. Shi will use the three-year, $450,000 grant to pursue fundamental research on nanoscale complex materials that could lead to the development of next-generation resilient and high-performance energy conversion and sensing technologies. This is one of the most competitive awards for young assistant professors and researchers in the United States.

Farhan Gandhi, the Rosalind and John J. Redfern Jr. ’33 Professor of Engineering, has received a 2018 Educator Award from the American Institute of Aeronautics and Astronautics (AIAA). Gandhi, an innovative researcher in the field of rotary-wing aircraft who is recognized internationally as a leader in morphing and active rotors, and adaptive cellular structures, was awarded the AIAA Faculty Advisor Award.

Michael O’Rourke, professor of civil and environmental engineering, received the 2017 NCSEA James M. Delahay Award from the Board of Directors of the National Council of Structural Engineers Association. The award recognizes outstanding individual contributions toward the development of building codes and standards. During most of his 43 years on the faculty, structural engineering expert O’Rourke has been involved in funded snow-load research.

Li (Emily) Liu, associate professor of nuclear engineering and engineering physics, has been named a fellow of the Executive Leadership in Academic Technology and Engineering program—ELATE at Drexel—a professional development program for women in science, technology, engineering, and mathematics (STEM) fields. A physicist and nuclear engineer, Liu focuses her research on solving high-impact problems associated with energy and the environment through fundamental investigation into the structure-function relationship of materials.
A mong the shelves of art, architecture, and technology publications in his first-floor office in the Greene Building are the design books School of Architecture Dean Evan Dougls has produced celebrating the internationally renowned architecture program at Rensselaer. Developed in collaboration with faculty and students, his broad collection of books is comprised of projects and prototypes from international study abroad trips, community outreach initiatives with significant regional museums and historic sites, and cutting-edge graduate research in architectural acoustics, lighting, and built ecologies.

These custom books reflect the exciting face of the School of Architecture, which pushes across academic disciplines, into the community, and around the world, striving to challenge the profession to move forward in novel and innovative ways.

When asked where the school is going, Dougls says, “Architecture is a beautiful constellation of disciplinary interests. We’re at this unique opportunity in history that in order to fully respond to the complexity of our changing world, it's critical that we embrace the idea of conjoined ideation. Art, science, and engineering can no longer reside in independent silos as they have in the past, but must be part of a larger holistic view in the education of the architect. Buildings.

We are making every effort to build coalitions, break boundaries, and create a dynamic and vibrant environment that propels our students forward as the future leaders of tomorrow.”

— EVAN DOUGLIS
With a broad and interdisciplinary approach to education, the School of Architecture is preparing its students to design a better future.

BY JANE GOTTLIEB

in the future need to be far more intelligent and behave like plants and animals as they respond to the environment in real time and harness energy from the sun, wind, and water in the most spectacular and innovative ways. Only through a radical reassessment of our educational system and the creation of a broader interdisciplinary conversation are we going to fully realize the paradigm shift so urgently needed throughout academia today.”

He goes on to say, “There’s a lot at stake at this moment in history for the next generation of architects. Beyond the profound environmental challenges that need to be overcome, our young people also need to be reminded that architecture is a deeply creative and humanist activity requiring a poetic imagination to truly envision on the most profound level the new cities of the 21st and 22nd centuries as culturally and environmentally inspiring, vibrant, and resilient centers of public life.”

Among the smallest of the five schools at Rensselaer, architecture is also among the most highly regarded. DesignIntelligence placed Rensselaer 13th on its influential ranking of American architecture programs for 2017-18.

DesignIntelligence also named the Cooper Union and Harvard-educated Dean Dougis among the 30 most admired architecture educators in 2015 and 2016. He is credited with broadening the program and raising its profile nationally and internationally.

Rigorous and intensive—some might say all-encompassing—Rensselaer architecture is also highly personalized given the array of options. Sprinkled among the 10 undergraduate, graduate, and doctoral degrees are specializations in architectural acoustics, lighting, geofutures, and built ecologies (offered as part of the Center for Architecture Science and Ecology, or CASE, program now situated in Industry City in Brooklyn).

Given the growing number of study abroad opportunities available at the school, architecture students can participate in full-semester cultural immersion experiences in China, Italy, India, Argentina, and Chile. The interdisciplinary Bedford Chair initiative brings together engineering and architecture students in a seminar and summer international traveling workshop taught by a world-renowned structural engineer. Students participate in community outreach experiences through the school’s Capital Region initiative by presenting building and campus design proposals to the leadership at institutions such as the Hyde Collection in Glens Falls, the Shaker Museum in New Lebanon, and the Museum of Innovation and Science in Schenectady. «
ON SEEING THE SPACES

Travel is a big part of the architectural education. There is only so much you can do by studying from books or learning the art and craft of architectural design. At a certain point you need to see the buildings and the spaces that you reference, to have that personal experience. It is difficult to acknowledge the complexity of the space of a South American city or the staggering urban growth in China until you have that personal physical experience.

Most students have never been abroad. We become like a small tribe for a semester that explores and shares new experiences together. In China, you might spend two or three days in a bus deep inland to visit some remote unique building compound. We’re seeing not just the big cities but the small communities. Students are often timid at first, but by the second month they are eager and have no fear. They talk together and argue and take walks and connect. They adjust really, really fast.

We were in Shanghai three months before the 2010 Expo and there was an absolutely insane amount of construction, with truck after truck and workers working all night. We went away for two weeks and when we came back we couldn’t recognize the area where we were living. There was brand-new pavement and sidewalk, benches; they’d planted new rows of trees and everything was painted to look majestic.

ON LOOKING AT ARCHITECTURE WITH A DIFFERENT EYE

You could be in Brazil—we’re in the center of Brasilia and you start mixing with the crowds of people who are going to work. Or in Argentina, visiting an artisanal brick factory in a remote area. Once you meet people from other places, understand their contexts, you look at their architecture with a different eye.

In Latin America, students see buildings with a heavy social and political agenda. They are able to look at the people, the way they use the city and the buildings, and see a picture that is very different from whatever their romanticized impression is.

The next semester, when they are back in the studios, they respond with a more critical perspective. Being away in a different world dramatically affects the way they think, before they become practicing architects. «

ON THE IMPACT OF ONE PROFESSOR

I was in Australia studying biomimicry (applying ecological thinking to sustainable technology) and it wasn’t what I was expecting. By pure coincidence I saw a BBC segment on Rensselaer Professor of Science and Technology Studies Ron Eglash’s research around African fractal architecture—a distinct system of organizational logics repeated at multiple scales. I reached out. He told me if I was really serious about design innovation that saw cultural and social criteria equally as important as the technical, I should come to RPI.

While I was interested in working with Ron, he’s not in the architecture department. He told me he would stay on as my Ph.D. co-adviser, but CASE in New York would be my home.

ON STUDYING AT CASE

The first two years you learn the fundamentals of building physics and ecology, but you’re still exposed to different interdisciplinary research areas. I was initially involved in dynamic solar façade systems. It was a lot to absorb and develop your own understanding of, but this comes over time.

ON STUDYING IN TROY

By the end I knew exactly where I needed to be: upstate, primarily because of biomaterials companies like Ecovative Design in Troy and e²e Materials Inc. in Ithaca. They became instrumental in my work on building panels. Initially, I was planning to start my company in Ghana, but I saw that in New York people are also hungry for good, cheaper, high-performance building designs. It's ironic.

I launched AMBIS with Nina Wilson, my Ph.D. colleague, and started Willow in Ghana, which focuses more broadly on water treatment and air-quality applications using agrowaste. We are developing agrowaste flocculants for a fair-trade facility for Global Mamas, a wonderful distributed network of women home-based enterprises, and doing tests in the national water company laboratory.
A boathouse and housing proposal, aerial view, for the Cohoes waterfront project.

Second Year Studio
Instructor: Bryan Kim
Student: Catriona Cribb
ON JOINING THE BUILDING SCIENCES FACULTY
I’m teaching courses around energy and environmental systems, as well as on material life-cycle innovation. I see this as a great opportunity to continue my research and get students involved in my work in Ghana and, more recently, in Europe.

ON WHAT SETS RENSSELAER APART
The interdisciplinary collaboration and access to researchers in other departments! Half my Ph.D. committee was in architecture, engineering, and science and technology studies. RPI instilled a deep appreciation for working together. We aren’t trapped in a bubble.

Associate Professor of Architecture Michael Oatman teaches a course examining the architecture of Alfred Hitchcock’s cinema. His students have created installations around modern dance and experimental music. They have moved audiences into ceilings and through tunnels and once imagined a building as Dante’s Purgatory. A visiting artist at numerous colleges and universities, Oatman creates large-scale installations and performance-based art exhibited at MASS MoCA and other leading institutions.

As artist-in-residence in the School of Architecture, he asks his students to envision how their discipline corresponds to other fields of inquiry. Here, Oatman discusses the rigors of the program, the unusual collaborations, and architecture of the mind.

ON ART VS. ARCHITECTURE
An artist rarely doesn’t follow through from concept to completing a project. But in architecture, you’re making the dream of a work of architecture that gets fulfilled only when the client approves. I think that’s the beautiful reality of architecture—that so much of it lives in the mind.

In my studios we are designing things students will actually realize, in collaboration with industry or performing artists or humanitarian groups.

ON DUCHAMP
The Tang Teaching Museum at Skidmore College invited my Duchamp Seminar to design an exhibition, “Living with Duchamp.” But first they had to learn about Duchamp and modernity. The seminar is a semester course that meets once a week; the design studio met three times weekly. We crammed those 15 to 18 seminar meetings into the first month.

“ARCHITECTURE” MINUS DOORS AND WINDOWS
In a conventional architecture class you visit spaces, say, in Boston or New York. Our site became the mind of Marcel Duchamp.

Most students didn’t know him. They learned about his place in history, his influence, and the work itself well enough to intelligently design a museum exhibition. We had to get to one final design that the Tang crew would build. It was the hardest decision for Tang Director Ian Berry, and me, to make.

ON SMALL CLASSES, BIG RESULTS
We have extraordinary students and a culture where they learn quickly.

We have one teacher to 12 students. And architecture is a team sport. We’re asking them to be critical, to revise without getting freaked out, to take a level of criticism they have not experienced—within a major research institution.

At Rensselaer, you go 500 feet in any direction and run into people in materials science, biology, and astrophysics and find your future collaborators. There is more and more evidence of biology, art, materials science, and computer science coming together in architecture.

ON OUTCOMES
Most of our students pursue careers at the forefront of the discipline. A number of students go into restoration because buildings are huge cultural resources. But a certain percent move past traditional architecture into the arts, into theory, into hybrid industries that intersect with technology. The whole mission is to arrive at their own set of research interests. We want a voice to emerge.

The Rensselaer architecture program has its roots in building sciences, the study of the materials and components that go into a structure. Today, building sciences reflects the importance Rensselaer places on designing
structures that are the most energy-efficient and made from non-polluting and resilient materials.

Here, Assistant Professor of Architecture Nancy Diniz, building sciences program director, discusses the four-year program—the only one of its kind in the country—and the many ways students can move their aspirations about sustainability into reality.

ON THE NEW BUILDING SCIENCES
Reactivating building sciences is a good idea because things have changed so much; buildings have changed, construction has grown in complexity and resilience, low energy usage matters, environmental health is a hot topic. We care about pollution, acoustics, and, of course, protecting against climate change and natural disasters. There are contemporary challenges the program targets. I really believe this targets a void in design education.

It’s a degree for people interested in efficiency and performance design, not necessarily in the craft of making or aesthetics of design. It’s dealing with data and facts. It’s “this façade design has to have upper efficiency solar radiation.”

ON HOW IT WORKS
In year one, they take courses in the architecture program and a building studio. The first semester, students develop a transportable refugee shelter that has to perform in different environmental conditions. This differentiates it from the architecture degree. They need to understand climate and design, something that keeps people alive in sub-zero temperatures or in a very hot climate. It can be assembled anywhere in the world, in urban areas or in flood zones.

In the second semester they develop computational skills, like software that determines how natural light gets into a room or a building. Last year they retrofitted a brownstone façade in Brooklyn.

ON SPECIALIZING
We allow students to select an area of expertise early in their second year and there are many: acoustics, lighting, sustainability business, and any kind of engineering can become a concentration. A popular one is product design and innovation. You can have entrepreneurship as a concentration. It’s the idea of knowing how to set up a business,
a design group, or maybe become an environmental consultant. You might work with data visualization as well.

**ON ELIMINATING BARRIERS**

Our students are really smart and everyone in the industry knows this. It takes hubris to bridge architecture and engineering and this can be tricky but it makes a lot of sense.

**ON OUTCOMES**

It’s a very rich degree. Graduates will have marketable skills out of the gate. I’ve already had companies like Arup contact me for positions. They have a need for these skills. Our students are doing internships mostly doing climate simulation, like daylight simulation. «

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Assistant Professor of Architecture Rhett Russo came to Rensselaer in 2016 as a pedagogical innovator with experience working on project designs ranging from objects to interiors to urban scale.

He quickly carved out a niche, engaging Rensselaer students in transforming a vacant waterfront in nearby Cohoes. It is a pursuit, he admits, that can be daunting to second-year students, who designed the full 2.4-acre site last fall and followed with housing in the spring semester. The developer was presented with their ideas for consideration.

Here, Russo discusses the project, the birds, and Rensselaer’s unique approach.

**ON REDRAWING A WATERFRONT**

Designing is a process that requires you to balance conflicting interests and constraints. Each student was asked to include performance space, a boathouse, and over-55 housing. The boathouse could only occupy a certain part of the site and not be within the flood plain. There were places where things could and couldn’t go and the students needed to consider alternatives. Then, they have to understand the ecology, the plants, parking, and wildlife of the Hudson River.

We meet our students three days a week for four hours. You’ve got laptops open and 60 heads down with each student bringing a unique perspective to the project.

**ON BEING ON-SITE FOR THE FIRST TIME**

Their response was, “Wait a minute; it’s not like the digital model.” There were big mounds of dirt everywhere. The students said, “We didn’t consider the dirt in the drawings; can we use it to change the topography?” Our students learn fast. In the design process knowledge is incremental, you develop what you know and you keep working.

**ON CONTRIBUTING**

This is really different from working on a project in the classroom, when the city is coming to look at your work. It’s three months away and you’re looking at a blank piece of paper; it can feel overwhelming.

A slightly new approach on one site can transform the development of the entire waterfront. Our students are visualizing the future through technology. The technology helps strategize the way they think about climate, water, and density.

If you understand how to tune in to the technology as a student coming out of a polytechnic, you can begin to think like an entrepreneur. It’s technology not in service of more technology, but the ability to look into the future and transform the way we shape our cities. This is the long-standing idea behind RPI.

**ON THE BIRDS**

We made a public presentation and a citizen from a wildlife group said, “Wouldn’t it be great to see birdwatching on the site? This area is a resting place for 200 species.” Only days before, our students had decided to incorporate a wildlife habitat along the waterfront.

**ON THE PEOPLE**

Learning to negotiate is something that comes with real-world experience. You’re working in the public domain with a private
developer. You have the public aspirations, the political aspirations, as well as ecological demands. The contradictions become clear to the students: “Wait a minute, one person is telling me they want one thing and another person is telling me they want something entirely different.” They had to take a stance.

ON THE RENSSELAER APPROACH
Partnering with the public realm through education is a way of making an impact. A project like this is unique because academia can offer a diverse perspective that is normally not part of the process. This is a huge challenge for our undergraduates, but it has a lasting effect on the quality of education we can provide. You can teach and never leave the classroom. Or, you can work on a real-world project and things come up that you can never plan for. «

Alexandra Kallish of Tampa, Florida, has wanted to be an architect ever since her parents suggested it after noting her fascination with Legos, and her love of both math and art. Rensselaer was her top choice. Today, Kallish is pursuing a Master of Architecture degree, a five-year program she will complete in 2021.

Now starting her third year, she has adjusted (somewhat) to the Northeast weather—and has quickly come to see that her degree will be far more powerful than she envisioned. Here, she talks about options, inspirations, and relationships.

ON OPENING HER EYES
Originally, I thought I wanted to do residential architecture, but after being here just a little while, my eyes opened to what it really means to be an architect, and how there are so many options out there. Architecture is such an intensive major that you open yourself up to working in a wide variety of fields and across many disciplines.

Everything was really hands-on from day one. In one of our classes, we immediately built small columns and beams and tested them with loads. That’s when I knew this was going to be different from other schools.

ON LEARNING FROM OTHERS
Dean Dougais has a lecture series in which he brings in artists and architects from around the world. Some of them are really new and prominent architects and artists. You get to learn about their work and their inspirations. After each lecture, students can enter a raffle and the dean chooses two to have dinner with him and the speaker.

ON THE RENSSELAER COMMUNITY
The great thing about RPI is that even though it’s really competitive, everyone is part of the same community. The students from my year, the year above me and below me, we are like a family. That really helps. You’re never afraid to see a professor and have a conversation, even if it doesn’t have anything to do with your project.

It’s always been the joke around campus that when you meet someone and they ask your major, they say, “They let you out of the Greene Building?” To some extent it’s true. But the School of Architecture really does a good job of having us circulate and get out. I played varsity tennis last year and I know a lot of people outside of the architecture program.

ON HOW PREPARED SHE IS FOR THE FUTURE
In most majors, I believe the main goal by graduation is to have learned the facts and theories of the profession, and most of the research and exploration comes after school. On the contrary, architecture is a major in which the learning itself is found through research and exploration. Any person can learn the rules and regulations required by the field, which I have discovered in my internships. The beauty of the Rensselaer School of Architecture is that it breaks down preconceptions of architecture and opens your mind to thousands of possibilities. So far at RPI, I have learned how to design. I’m not quite sure yet what I want to design, but I’m using my time in school to explore different aspects of the field in order to give myself a wide spectrum of design to dive into. ■
Upon opening, EMPAC was hailed by The New York Times as a technological pleasure dome for the mind and senses . . . dedicated to the marriage of art and science as it has never been done before.
When the Formosa Quartet takes to the stage at the Curtis R. Priem Experimental Media and Performing Arts Center on October 11, it represents, by director Johannes Goebel’s count, the 5,557th day of the EMPAC program. By more conventional metrics, this performance marks the 10th anniversary of the landmark center’s opening and the start of a three-day event—dubbed 10YEARS—being held to celebrate the occasion.

With a twinkle in his eye, Goebel insists it’s the first figure that matters more to the programmatic vision of EMPAC, not the legacy of completing a decade. While anniversaries are often taken as an opportunity to look back on past achievements, Goebel says, “I’m interested in what happens now! And how to create ever-new ‘nows’ in the future.”

As the string quartet leads its audience throughout all four of EMPAC’s venues, performing classical repertoire selected to match the architectural acoustics of each space, it is indeed in the present tense of listening and feeling the sounds reverberate through the room and against one’s body that Goebel’s point is driven home. While the scientific method can set future-oriented goals for inquiry, and retrospectively consider a body of collected data, art instead provides a reflective space for the human senses to make integrative sense of experience in real time.

As Goebel puts it, “Science aims at understanding the underlying systems of nature and life. Engineering creates tools and methods for supporting human life. Art continually opens doors on the present moments of experience and our search for meaning, and that’s a necessity for being human.”

So it’s fitting, in a poetic way, that the anniversary of EMPAC’s literal door opening be celebrated with a diverse slate of performances selected to figuratively do the same. The anniversary celebration showcases for Rensselaer students and audience members traveling from well beyond the region a host of world premieres, developed over the past year in residence at the center, including a multimedia performance by visual artist Wu Tsang, a 3D sound installation demonstrating EMPAC’s new Wave Field Synthesis audio system, a dance-film installation by Cypriot choreographer Maria Hassabi, a feature film by Canadian artist Isabelle Pauwels, and an immersive theater performance by “world-maker” Yara Travieso, capped off by a concert performed by the International Contemporary Ensemble using a 64-speaker Ambisonic “dome” built around the audience. The festival encompasses a talk by Goebel on the philosophy and politics of digital archiving, a demonstration by CISL director Hui Su on research currently underway at the Cognitive and Immersive Systems Laboratory (CISL @ EMPAC), and the unveiling of the second volume of EMPAC’s “White Book,” Programming EMPAC.
Days 4,159—5,476, a comprehensive document of every project undertaken at the center since its inception. A new video kiosk in the EMPAC lobby now allows visitors to browse and view full-length documentation of over 400 productions and performances created at EMPAC.

More than an anniversary, the 10YEARS celebration distills what makes the EMPAC program as radical and transformative 10 years on as it was when President Shirley Ann Jackson first assembled the Electronic Media and Performing Arts Task Force in 2000, as one of her first major actions toward the realization of a new paradigm for cross-disciplinary education and research at the nation’s oldest polytechnic. While this vision has matured into The New Polytechnic, following EMPAC’s early transition from an “electronic” enterprise to the more integrative “experimental” project it now carries in its name, EMPAC continues to anchor the fleet of cross-disciplinary initiatives that have arisen in recent years, such as Art_X, while establishing Rensselaer in a much broader academic and cultural context.

In her remarks at the building’s opening in 2008, President Jackson challenged the Rensselaer community “to dare to invest in new enterprises—areas in which Rensselaer had not been known but which held great promise and value.”

This effort has not gone unnoticed. Upon opening, EMPAC was hailed by *The New York Times* as “a technological pleasure dome for the mind and senses . . . dedicated to the marriage of art and science as it has never been done before,” that is, something unprecedented in both higher education and across the traditionally distinct fields of scientific research, technological engineering, and artistic production. Over 5,500 days (and counting), the center has hosted artists, researchers, and scholars from nearly 30 countries to undertake collaborative projects, among them more than 100 commissioned projects that have gone on to tour the world, in addition to over 600 productions presented on stage and screen for the Rensselaer community.

EMPAC productions have garnered a host of awards, including a Pulitzer Prize nomination (Kate Soper’s opera *Ipsa Dixit*), an Academy Award Shortlist selection (Laurie Anderson’s film *Heart of a Dog*), and recognition from publications like *Rolling Stone, Pitchfork,* and *The Wire* for recordings produced at the center (by Tim Hecker, Ben Frost, Laurel Halo, and others). This spring, *Artforum* magazine celebrated EMPAC’s “NASA-grade” production facilities in a profile of EMPAC artist-in-residence Patricia L. Boyd.

“When I arrived at EMPAC, it was rare for artists and colleagues in the visual arts field to know what EMPAC was, especially in Europe,” reflects Victoria Brooks, who came from England to work as EMPAC’s curator of time-based visual art in 2013. “Now everyone knows about the building and the program because in the U.S. and internationally there isn’t any other institution doing what we’re doing.”

In recent years, EMPAC has hosted visitors from a wide range of international universities and cultural institutions—including both technological and liberal arts colleges, the San Francisco Symphony, the University of Tasmania, the University College of Opera in Stockholm, the new Perelman Center for the Performing Arts at the World Trade Center in New York City, and the West Kowloon Cultural District, a massive 100-acre art center currently under construction in Hong Kong—all interested in learning how Rensselaer was able to realize both EMPAC’s infrastructural and programmatic capabilities.

While it’s easy to see how the EMPAC program radically expands the framework for education, research, and cultural life on the Rensselaer campus, EMPAC is similarly changing the landscape for artistic research and production on an international level. Brooks—whose curatorial work focuses on the expansion of visual art from the static container of the white-box gallery into the more dynamic time-based realm of moving-image and performance—often initializes her EMPAC productions in collaboration with other institutions, like the Museum of Modern Art (MoMA) in New York City, or the Walker Art Center in Minneapolis. In much the same way that scientific researchers often collaborate between academic institutions, or with private sector entities (as with CISL’s joint venture with IBM Research), these artistic co-commissions pool resources, expertise, and infrastructure to undertake projects that wouldn’t be possible otherwise.

“We can do things here that museums like MoMA can’t,” Brooks says, recognizing not only the exceptional infrastructure in the EMPAC building, but the expertise of the staff, programmatic opportunities within the residential production framework, and an expanded concept of research bridging both artistic and scientific modalities.

Goebel echoes the sentiment, claiming, “The EMPAC curatorial program is a paradigm that does not exist to my knowledge anywhere else on the planet.” Under Goebel’s administration, a staff of curators—Ashley Ferro-Murray (associate curator of theater and dance), Argeo Ascani (curator of music), and Victoria Brooks (curator of time-based visual art)—pursue distinct-yet-complementary programmatic trajectories, commissioning new projects from a cadre of international artists working at the leading edge of their form, and then developing these projects through extensive residential engagements at EMPAC.

As a result, EMPAC production residencies have become coveted opportunities for artists seeking to expand their work into new aesthetic dimensions and experiential spaces. This spring, *The New York Times* followed the two-week production residency undertaken by electronic musician Daniel Lopatin (AKA Oneohtrix Point Never) in advance of a sold-out three-night premiere of his multimedia “concertscape” MYRIAD at Manhattan’s cavernous Park Avenue Armory. Lopatin and his collaborators used the opportunity to rehearse music, prepare a complex projection apparatus, and build an enormous inflatable sculpture that would be deployed mid-show. Of EMPAC’s role in the production, Lopatin said simply, “We couldn’t have done it without you.”

Beyond curatorial and technical support, EMPAC production residencies pursue a form of collaborative experimentation and research meant to engender new social systems and ways of working,
something Brooks likes to refer to as new “protocols.”

As a point of contrast, she points to the way that Hollywood movies are produced. Because of the commercial objectives driving the production, there are certain workflows and hierarchies established to ensure efficiency of execution. As a result, there’s a set of rules that everyone in the industry follows and a certain language that everyone understands, but that comes with a calcification of innovation on the level of form and content.

“The interesting thing is when we diverge from these industrial practices and protocols,” Brooks says. Pursued in a truly collective, cross-disciplinary spirit, with artists working in constant collaboration with highly skilled engineers and technical staff, EMPAC productions not only generate new artworks and new technologies, but also new social structures and protocols.

A good example is Brooks’ recent project with French artist Laure Prouvost. Prouvost is a well-recognized figure in the visual art world, having won the Turner Prize (the UK’s most prestigious art award) in 2013, and is representing France at the upcoming Venice Biennale in 2019. Working with curators at the Walker, Brooks started with the simple question: “What would Laure do if we gave her access to theatrical infrastructure and technology for the first time?” Over the course of two years and a series of residencies undertaken at EMPAC and the Walker, the question was slowly pursued, eventually resulting in They Are Waiting for You, which premiered last fall at EMPAC before traveling to the Walker to be performed in conjunction with Prouvost’s new gallery installation.

Working alongside choreographers, musicians, and stage technicians toward the realization of her first performance for the proscenium stage, Prouvost was forced to expand her disciplinary language (based in visual art and video) and learn to speak a new meta-language that would encompass the languages of each collaborator. Through this method of artistic research, the emergent social protocol—a completely new way of working together—was just as novel as the finished performance.
The same venues and tools that make EMPAC a leading-edge performance space also make it an exceptional laboratory for research at the interface between digital technology and human experience. Recent areas of inquiry include advanced visualization, acoustics, sensor design, lighting design, haptics, social interaction, and immersive environments, among others.

The Wave Field Synthesis Audio Array is a recent project. Developed by EMPAC audio engineers, this 500-speaker array is one of the most extensive and precise spatial audio systems in the world. By placing a virtual sound source in physical space, the system creates “holophonic” sound that moves around the listening space, not unlike the sonic equivalent of 3D cinema.

EMPAC is also home to the Cognitive and Immersive Systems Laboratory (CISL), a joint research venture between Rensselaer and IBM. With projected applications in the fields of medicine, business, cybersecurity, and education, CISL is developing prototypes for the next generation of human-computer interfaces that will help solve complex global challenges.

With EMPAC’s spacious studios—optimized for human perception and interaction—along with its complex media and networking infrastructure, researchers across the five schools at Rensselaer have a powerful tool in the quest to better understand human sensory experience, communication, and interaction with computing systems.

According to Goebel, EMPAC productions model a core notion of The New Polytechnic that is being enacted across the Institute. By exploring the spaces where traditional disciplinary boundaries overlap—perhaps between civil engineering and architecture, or cognitive science and game design—we expand our frame of intelligibility, collapse artificial boundaries, and create the possibility for new ideas to arise.

Art delivers this idea in a direct, sensory way, but it’s also the objective of more scientific research initiatives taking place at EMPAC, most prominently with CISL. Working in EMPAC Studio 2 on the design and construction of a cognitive and immersive “situations room,” which enables groups of human users to interact with large datasets through responsive computing agents, CISL is similarly pursuing the research and development of novel protocols for the overlapping domain of social space and computing interface. What links this work to the kind of research and experimentation happening with an artwork like Prouvost’s is a content-driven approach to the project, using technology to conceive ideas and experiences, not the other way around.

Viewed this way, the EMPAC building itself was the first human-scale research project undertaken by the center. As Goebel recalls, a major goal was to “build a space that works well for humans first, then add the technology.” For instance, by designing the acoustics of the space to accommodate the human voice and acoustic music, electronic infrastructure could be added to open further possibilities. Not vice
versa. The purpose for this orientation is that technology changes fast, but the human senses and corresponding social environment do not. Every piece of the design process—and by extension every media platform that EMPAC has developed (from the Campfire immersive computing interface to Wave Field Synthesis)—had to follow this functionality, considering first the qualitative experience of human perception.

This continues to be a radical proposition, as virtual and augmented reality technologies have enjoyed resurgent interest in recent years and more VR platforms work their way to the marketplace. Prevailing wisdom might question the return on investment of a 220,000-square-foot building while cyberspace seems to be where the action is.

Goebel is unconvinced. “There will always be a difference between the individualized approach to something and one that considers the social experience of interacting with groups,” he says. “EMPAC went against the grain of how the triad—art, science, and technology—has been posited in the past decades, which has been mainly technology-driven, and we continue to do so.”

It can be tempting to celebrate the development of new technologies for the sheer technical brilliance that hatches them, but a core idea of The New Polytechnic is that this is only a piece of what it takes to educate students who are, in President Jackson’s words, “also articulate, broadminded, and humane.” Echoing the idea at this spring’s Commencement Colloquy, genomic science pioneer Dr. Eric Lander said, “We cannot just discover and invent; we must ensure that our discoveries and inventions are used to serve humanity.”

In short, we can’t simply “tech” our way out of all our global challenges; we must create humane relationships to our technologies and use our technologies to create humane relationships to one another. And to do this requires a method of social and self-reflection, something that the arts offer at their core.

For jazz great Herbie Hancock, who visited EMPAC this spring for the Commencement Colloquy, there’s a step that has to happen before we go out and change the world, a process of self-reflection that can happen every time we perform or experience a challenging work of art.

“If we take it upon ourselves to transform ourselves,” he said, “we transform others and the world around us.”

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We cannot just discover and invent; we must ensure that our discoveries and inventions are used to serve humanity.

— DR. ERIC LANDER

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Above: Dancers perform one of several technicolor scenes for the integrated 3D film/live dance production Tesseract, developed over three years by “media dance” pioneer Charles Atlas and former Merce Cunningham company dancers Silas Riener and Rashaun Mitchell.

Above, right: EMPAC is home to studios that are versatile spaces for the integration of digital technology with human expression and perception (known as “multi-modal environments”).
Researchers at Rensselaer are perfecting network analysis, a powerful data science technique that makes it possible to identify common ground in complex datasets.
Ahmed Eleish, a doctoral student, types a few commands into his laptop, gives a final click, and sits back.

The screen shifts abruptly from the rigid grid of a paleobiology spreadsheet to thousands of multicolored dots connected by a web of lines. In a dance choreographed by algorithms, the dots—representing records of trilobite fossils, color-coded into eight biological orders—shiver and shift position, while the web of lines, showing who was found near whom, follows the movement.

Minutes later, when the last of the shivering circles has come to rest, a pattern has emerged. Distinct clusters of dots connected by lines make apparent a truth, a relationship between factors that is hidden in spreadsheet data too voluminous to be processed by the human mind alone. The dots have clustered into “communities” of trilobites that lived near one another. Although there’s no time axis, the passage of 300 million years is visible in the steady left-to-right shift in colors, as order marked by red circles gives way to yellow, then green, then blue. An abrupt choke point marks a mass extinction—followed by a smattering of blue dots.

This is network analysis, a powerful data science technique that makes it possible to identify common ground in complex datasets. Network analysis is best known in its guise as “social network analysis”—companies like Facebook use it to generate “friend” suggestions based on commonalities found in our profiles—but in the hands of Rensselaer researchers, it is drilling into the big data log jam. In many fields of research, traditional data analysis is limited to exploring relationships between two variables.

By looking for communal relationships, network analysis can search for patterns in the interplay of as many as 10 variables simultaneously.

“Just as we think of people in terms of communities, with groups of common attributes—location, gender, interests—we can find communities in datasets, whether it’s fossils, minerals, or materials,” says Peter Fox, a data scientist, Tetherless World Constellation Chair, and professor of earth and environmental sciences, computer science, and cognitive science. “Thinking of community, or as we call it, ‘co-occurrence,’ gets you out of two dimensions, out of x/y plots, and that opens up enormous territory for pulling complex relationships out of data,” he says.
“This idea has been in the mathematics and computer science literature forever, but advances in technology have only recently made it practical.”

The history of life on Earth makes a good example. With network analysis, researchers in Fox’s lab coaxed a massive database containing marine fossil records—with information including location the fossils were found, age of the fossils, and Linnean classification—into quantifying the ecological impact of five mass extinctions known to have occurred over the course of 542 million years.

— Understanding Early Earth

The analysis, with results published in the Proceedings of the National Academy of Sciences, is the most ambitious thus far in the ongoing Deep Time Data Infrastructure (DTTDI), a collaboration aimed at understanding the intertwined evolution of mineralogy and biology beginning with early Earth. Rensselaer provides the primary data science expertise for the project, headquartered at the Carnegie Institution for Science, and involves about 30 scientists. The goal is to integrate and explore existing discipline-specific data (the project website lists “mineralogy and petrology, paleobiology and paleontology, paleoecotronics and paleomagnetism, geochemistry and geochronology, genomics and proteomics, and more”) to produce insights into the evolution of Earth’s environment.

The trilobite analysis was an offshoot of that work. An earlier DTDI network analysis produced a time-lapse visualization depicting how minerals bearing cobalt—a rare element essential in life—changed in composition as oxygen proliferated in Earth’s atmosphere. The results contribute to our understanding of how biology incorporated cobalt from 4 to 2 billion years ago. Prior to that, a DTDI network analysis of similar data showed which minerals in specific classes (such as copper- or chromium-bearing minerals) are likely to be found in proximity to one another.

“Network analysis is a tool for data-driven science. We have guiding scientific questions, but we’re typically not applying an analysis just to prove or disprove a hypothesis,” says Eleish. “Instead we are exploring the data. We work with experts to identify their purpose and then we apply a data-driven approach to help them explore the data and find relationships, patterns, and trends that might be interesting to them.”

The roster of the projects currently underway in the lab (numbering more than two dozen) includes seemingly unrelated research—one project explores extremophiles while another is focused on metal additive manufacturing—that hints at the breadth of fields where the approach may be productive.

— Student-Led Research

Most of the students and postdoctoral researchers in Fox’s lab have their fingers in multiple projects, with anywhere from two to half a dozen researchers teamed up on each project. Many of the projects involve network analysis, which makes sense given that the technique combines the fundamental elements of the lab—structuring data and establishing best practices for data, statistical analysis, machine learning models, and data visualization. While network analysis is only one of a suite of tools the lab uses to pry knowledge from numbers, for the moment, it is the star player.

For example, postdoctoral researcher Fang Huang is leading a network analysis effort on two similar projects—the Census for Deep Life and Cerro Negro—aimed at understanding how environment affects biology. The Census for Deep Life uses datasets on life found under the surface of the Earth, principally in the deep ocean. The Cerro Negro project—a collaboration with Karyn Rogers, assistant professor of earth and environmental sciences—looks at a dataset on extremophiles taken from a volcanic mountain in Nicaragua.

Doctoral students Hao Zhong, Congrui Li, and Feifei Pan, working with Johnson Samuel—associate professor of mechanical, aerospace, and nuclear engineering—are using network analysis as part of a larger project to advance the field of metal additive manufacturing, better known as 3D printing.

And Anirudh Prabhu recently launched a project to adapt network analysis to small datasets, an idea that stemmed from the Mars Curiosity mission. The CheMin instrument aboard the Curiosity rover collects images of minerals which are used to calculate the crystal lattice dimensions of the minerals. Multiple competing methods exist to calculate the chemical composition of the minerals from the limited image data collected on the crystal lattice dimensions, but no single method is acknowledged as superior. The dataset is small, but Prabhu wants to develop algorithms and practices

“JUST AS WE THINK OF PEOPLE IN TERMS OF COMMUNITIES, WITH GROUPS OF COMMON ATTRIBUTES—LOCATION, GENDER, INTERESTS—WE CAN FIND COMMUNITIES IN DATASETS, WHETHER IT’S FOSSILS, OR MINERALS, OR MATERIALS.”

— PETER FOX

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that will enable him to explore it and gain some valuable insights.

“I keep thinking we are going to hit a wall with network analysis, that we’ve done all we can with it. And every time I work on something new, it surprises me, and I’m impressed that we gained a new insight,” says Prabhu, a doctoral student. “Network analysis is so versatile in the things that it can do; it can be transferable through domains, and it can be scaled up and scaled down for the kinds of analysis that you want to do.”

In each case, the network analysis maps a structure formed by “nodes” that represent the object of study (a fossil, an extremophile, a metal) and “edges,” which express a significant relationship that can exist between nodes. In the simplest example, researchers begin with an existing dataset in spreadsheet form, create a separate spreadsheet listing the nodes to be found on that dataset, and connect the two spreadsheets with code that defines the edges, and generates graphs of the structure formed by the nodes and edges. Variables can be encoded into the nodes—with options like color, size, and shape to indicate the variables—and edges. Additional types of nodes (fossils and locations) allow more complex networks. Most of the work is done using open source tools, packages, and libraries, like RStudio, Python, and Jupyter.

Data scientists will tell you there is a known distribution to their work: 80 percent data curation, 20 percent data exploration. Every analysis starts with the long work of combing through databases, structuring data, unifying terminology, and establishing best practices. There are also, says Prabhu, decisions to be made, usually as part of a conversation between the data scientists and the discipline-specific experts.

“Sometimes, when we explore the data that is given to us, we can say ‘these datasets have varied distribution, lots of complexity, they have the most to tell us, so it would be worth exploring them,’” says Prabhu. “And sometimes experts say ‘these are the research questions that we are most invested in and what can you do to help us?’”

— Problem-Solving Methodology

The work is rooted in a methodology that Fox, who began his career as an applied mathematician, developed through multiple collaborations, including his work with Tetherless World Constellation colleague Deborah McGuinness. This methodology—a progression of 11 steps that includes developing a “use case,” developing a model ontology, adopting a technology approach, and frequent evaluation—makes it possible for them to rapidly replicate their work, moving among datasets from different disciplines and extracting meaning from graph representations without coding exhaustive discipline-specific knowledge.

“What I really bring is a conceptual representation of how to solve problems,” says Fox. “I’ve developed courses to teach students the skills they need to follow that methodology. They know that you have to conceptually understand the problem, you have to understand the terminology, you have to understand the research goal or question. And then you have to be prepared to apply software engineering techniques like rapid prototyping, and spiral development, and social science methodology.”

Fox has worked on about 10 different fields in the past three decades, devoting increasing time over the past 15 years to applying data science techniques and computer science techniques to developing data science computer platforms. Much of his earlier work—like a traceable account system he built for the Global Change Research Program in 2012 and a system developed for NASA that allows researchers to rectify data from multiple NASA satellites in different flight patterns collecting different data—established best practices for structuring and storing data and representing its quality. His research group serves as the data science team for the Deep Carbon Observatory (DCO), a 10-year-long collaboration of more than 1,000 scientists studying the “quantities, movements, forms, and origins of carbon inside Earth.”

Large projects like the DCO often spawn subgroups, and the Deep Time Data Infrastructure is a prime example. Observing the practices Fox and his team employed in the DCO, Carnegie Institution scientist Robert Hazen approached the team to suggest a similar collaboration based on mineralogy. Hazen, says Fox, was looking to make the transition from spreadsheets, two dimensions, and incremental progress, to multiple dimensions and breakthroughs.

The team sought funding with the W.M. Keck Foundation. In a rare move that recognizes the value of the approach, Keck asked the team to increase the budget by 40 percent. The project to date has been so successful, Fox says, that team members are now looking to expand its reach and lengthen its duration along the lines of DCO.

“This is groundbreaking work, and that’s what I came to Rensselaer to do,” says Fox. “Network analysis is only one of the tools in our methodology, but it’s proving extremely effective. It gets us out of two dimensions and exploring the full meaning of what the data has to offer. It’s useful in any field that has a notion of co-occurrence, of community. I think this is just the beginning.”
As the 200th anniversary of the founding of Rensselaer approaches in 2024, the capital campaign—Transformative: Campaign for Global Change—will secure the future of Rensselaer and enable exceptional students to pursue their passions, realize their dreams, and change the world for generations to come. For Don Weimer ’74, a commitment to student support was inspired years ago by the generosity that enabled him to pursue a degree at Rensselaer and by the quality of the education he received.

Intent on studying electrical engineering, Weimer quickly realized that many of his classmates were far more advanced in the subject than he was. “I went from being one of the smartest kids in my high school who never needed to develop study habits, to one of many in a much more demanding academic environment.” When his grades slipped during his freshman year, he discovered that his scholarship funding had been reduced as well—a sore point that would later influence his approach to giving.

As luck would have it, his freshman roommate got him hooked on computers. He convinced Weimer to join the Association for Computing Machinery student chapter, which gave members free accounts to use the school’s first computer, an IBM System/360.

“That’s where I learned to program. For the next three years, you could find me hanging out in the computer lab in the basement of Amos Eaton Hall,” he says. In his senior year, Weimer found himself being recruited by the data systems division of Grumman Aerospace. He would spend the next 22 years working at Grumman, ending up as a systems programmer for the company’s IBM mainframe computer before taking a position with Arrow Electronics.

Early in his career, Weimer decided to give back to Rensselaer. “I received a great education,” he says. “RPI taught me how to think logically and solve problems. Those skills have served me well throughout my career.”

In 1982, Weimer made his first gift to Rensselaer, donating 2 percent of his salary. He convinced Weimer to join the Association for Computing Machinery student chapter, which gave members free accounts to use the school’s first computer, an IBM System/360.

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“I am financially able to give back,” he says. “It’s the right thing to do. It is my intention to donate the bulk of my estate to my scholarship fund, at which point the scholarship should be a full ride.”

“Don’s 2 percent approach and his commitment to scholarship are unique and inspiring. We thank him for his impact on Rensselaer and today’s students,” says Graig Eastin, vice president for institute advancement.

To learn more about offering support, visit giving.rpi.edu, alumni.rpi.edu, or contact the Alumni Office at alumni@rpi.edu or (518) 276-6205. □
HELP RENSSELAER GO GREEN
Alumni programs and services are advertised mainly via email and social media—including Reunion & Homecoming and regional chapter information. Help us continue to “go green,” and make sure you don’t miss out on any of the exciting and educational events and valuable benefits offered exclusively to Rensselaer alumni. Write to alumni_update@rpi.edu, or visit alumni.rpi.edu/gogreen and update your email, social media user name, and contact information.

WORLDWIDE TRAVEL PROGRAM
See the world with people who share your interests—fellow Rensselaer alumni. Upcoming programs include the Galapagos Islands, a seven-night cruise in the Pacific Northwest on the Columbia and Snake rivers, a luxury cruise from Sydney (Australia) to Auckland (New Zealand), and an intimate group (28 maximum) educational trip to Cuba. Visit 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 for more information.

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Seeking Outstanding Alumni
Nominations are open for the Rensselaer Alumni Hall of Fame

The nominations process has begun for the 2020 class of inductees into the Rensselaer Alumni Hall of Fame.

The Rensselaer Alumni Hall of Fame was conceived in 1995 to honor the past, while celebrating all generations of Rensselaer pioneers. It is designed to permanently preserve, celebrate, and widely communicate the long and exceptional heritage of the Institute. The stories of these innovators, pioneers, and entrepreneurs provide a powerful source of inspiration for all who follow in their paths, and like them, will continue to change the world.

The guiding philosophy of the Rensselaer Alumni Hall of Fame is to recognize the “best of the best” as measured by contributions inductees to humanity; a specific field of endeavor; or a unique niche area. The criteria for selection include the nominee’s reputation globally, professional achievements, service and career contributions, and uniqueness. To date, 86 members have been inducted. Etched glass windows have been placed centrally on campus to commemorate their contributions.

Just a few examples of the notable alumni who have been inducted include Steven Sasson ‘72 (pictured), inventor of the digital camera; civil rights trailblazer Wesley Brown ’51; David Noble ’40, inventor of the floppy disk; and engineering education leader Lois Graham ’46.

Please submit the names of worthy alumni for consideration for the 2020 class of inductees by December 31, 2018. A nominations form, and more information about the current members of the Rensselaer Alumni Hall of Fame, may be found at alumni.rpi.edu/hof.

For questions, contact Alumni Relations at alumni@rpi.edu or (518) 276-6205.
Many thanks to Ed Golash ’69, who sent news about his neighbor, Vincent Miller. Vincent celebrated his 99th birthday on February 7. Vince received his degree in chemical engineering and served in the Navy during WWII, rising from ensign to lieutenant, senior grade. He designed and sold water treatment systems for everything from pharmaceutical factories to power plants. He started the Vincent J. Miller Co. in 1950, sold the company in 1987, and has been retired for the last 32 years. He has been a photographer for 70 years and is well-known for his stunning pictures of the Strathmore neighborhood in Syracuse, N.Y.

These class notes for our Class of ’45 and all other classes that have been and are published in this section of the Alumni News provide an overview of the type of products that Rensselaer produces. As you browse through them, you find that RPI alumni have been some of the major leaders of companies, laboratories, and other organizations, and outstanding engineering gurus in their field. When we entered RPI and other schools in 1941, the word was that we couldn’t fly faster than the speed of sound. On Saturday, May 5, 2018, the Mission to Mars was launched to explore the geology of Mars. I live only about 12 to 15 miles from the launch; we could hear and feel the rocket take off for Mars!

All the work put into the Ballistic Missile Program has made it possible to have the new communications systems that we carry around in our pocket, trips to the moon, new space applications, and now the development of the Mars Mission. And now they are landing the launch vehicles after takeoff in the NROTC unit.

“Year 1942—”

The following email came in from Richard Ettington (BSME) and is well-known for his stunning pictures of the Strathmore neighborhood in Syracuse, N.Y.

“Year 1945—”

The following email from Richard Ettington (BSME) gives you a look at his career.

“I graduated from Pelham High, a suburb of NYC, in June 1943, during WWII, and as no. 2 in class, was lucky enough to be accepted by the Navy in their V-12 Program (being an Eagle Scout probably helped). After two days of tests at Cornell U. they assigned a few of us to RPI where the Navy had an NROTC unit.

“We shared six bunks in each dorm and did our run and exercises every morning. (I was assigned to teach semaphore every a.m., having learned it in BSA.) Then I was assigned as an engineering officer to a destroyer in San Francisco, part of the Japan invasion fleet; then the war ended.

“I was then accepted back at RPI to complete a BSME and was hired by Ingersoll-Rand Co. in their sales training program. They had four plants and I decided to stay in their Painted Post, N.Y., plant, when my father, chief engineer of American Locomotive Co., advised that I’d make a good engineer, but a lousy salesman.

“I eventually met and married Betty, a school teacher in Corning, N.Y., and we moved to different jobs over several years until retirement from Dresser Industries, now Halliburton. In a suburb of Los Angeles, that company had 20 subsidiaries in 18 countries, so I did a lot of traveling.

“We have two wonderful children and several grandkids, most in Scottsdale, Ariz. I owe a lot to RPI and the Navy for a wonderful life!”

The following email came in from Bill Peace Sr. “My only news is that my darling wife, Libby, passed away this past September, and I miss her tremendously! I just passed my 95th birthday, and I’m doing pretty well. Have great friends here, which is a great comfort to me. All my close friends from RPI have gone on to their reward.”

Andrea Lehman, daughter of Edgar Lehman, responded to my letter. “I just received your class notes request, forwarded from my dad’s last address. Regrettably, he passed away in 2012. I don’t have anything written about dad’s career. He worked most of his life as the VP of sales for S&S Corrugated Paper Machinery in Brooklyn, for which he traveled the world. It blended his interest in engineering with his interest in people of all backgrounds and cultures.”

Lynne Wolfgang’s response to my letter reminded us again that we have lost and are losing classmates rapidly. “I regret to inform you that my father, Richard Tietze, passed away in 2016. My mom never recovered after his death and passed away March 4, 2017.”

From his obituary, supplied by Lynne, we learn that Richard enlisted in the Navy while still in high school. He was accepted into the Naval Officers training program at RPI, earning a bachelor’s in chemical engineering in three years. After the war, serving as LTJG in the Atlantic and Pacific theaters, he returned to RPI and earned an M.S. in metallurgical engineering.

Dick began his career in 1948 at Revere Copper and Brass, Rome, N.Y., division. He held positions in metallurgical, production, and systems management, and was named works manager, where he served from 1971 to 1980. In 1980, he was promoted to corporate manager of energy planning and control at Revere’s executive office in New York City. In 1984, he was named National Industrial Energy Manager of the Year. He retired from Revere in 1985 and continued his career in energy and industrial consulting.

Dick was recognized by the Rome Chamber of Commerce, Rome Family Y, United Way, and the American Red Cross in Rome for his service. In

“When we entered RPI in 1941, the word was that we couldn’t fly faster than the speed of sound. On Saturday, May 5, 2018, the Mission to Mars was launched to explore the geology of Mars. I live only about 12 to 15 miles from the launch; we could hear and feel the rocket take off for Mars!” HERB ASBURY ’45

Our previous (2002-2016) class correspondent, Herbert Kee (B.Met.E) died at age 88, March 15 of this year, from complications of Parkinson’s disease.

Herb was a beloved pillar of New York’s Chinatown community. Entering RPI from Brooklyn Technical High School as one of the youngest members of our class, he went on to earn a master’s degree from Penn State. He first worked as an engineer and editor at McGraw-Hill but, following a visit to the Albert Schweitzer Hospital in Haiti, was inspired at age 36 to enter medical school.

—1942—

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—1950—

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—1950—
Herb graduated from Albert Einstein College of Medicine in 1970 and established a private practice in the heart of Chinatown, where he treated patients regardless of their ability to pay. He was a physician at Gouverneur Hospital, which awarded him for his contributions to Lower East Side patients. He was also recognized for his contributions and leadership involving youth, Head Start, and the Charles B. Wang Community Health Center, where he volunteered after his own office hours, as well as by other health organizations.

He was active as a Presbyterian Church elder, and Democratic District Leader, and as a board member of Hong Ning Housing for the Elderly, and the Senior Citizen Advisory Board. The Kees' prominence in politics is attested to by two quotations from his memorial service: “The Kees are to Chinatown politics what the Kennedys are to American politics,” and “Everyone's here. It's wall-to-wall judges.”

That April 7 service was attended by more than 300 distinguished guests and described: “All of Chinatown was here. A lot of people knew each other for 40 years.”

Among these numerous recognitions was one, in 1999, from The United Jewish Council for building relations between the Jewish and Chinese-American communities.

Herb and Virginia (Hunter College) married young (21 and 19), enjoying 66 years together. They had no children but were dedicated to youth issues. Five high-achieving godchildren are cited in his obituary. Other sources suggest very close relationships with these and other young people. They established scholarships at Brooklyn Tech and RPI as well as endowments to other organizations. Herb was a member of the Patroon Society of RPI and the Dean's Club of Albert Einstein College of Medicine.

Not to slight Virginia, she had been a co-protagonist in many of these endeavors and a leader in her own right.

Among all of these distractions, Herb found time for introducing city children to the wonders of beach nature, doing sculpture and ceramics, specialty cooking, carpentry, and gardening. Known as a storyteller, he also took up the ukulele late in life. He and Virginia found time to travel widely across the world, often with godchildren and their families, well into his last years.

This inspiring, commendable life story is burnished by descriptions of Herb as a quiet, humble person.

If you would like to learn more, an internet search would be rewarding. —Robert L. Pfieff ’50; vincible@iol.com

—1951—

I lost my wife March 3. We had a relationship that even Hollywood can't top. My first wife (a Sage grad) decided in 1974 that the assistant minister at our church would make a better mate and left me. Friends at UCC arranged for me to make sales calls our church would make a better mate and left me.

friend in Oklahoma City said no point in staying at a motel. This friend was my first wife's sister. And a friend in Oklahoma City said no point in staying at a motel. This friend was my first wife's sister. And yes, we put two families together and had a great 43-year marriage. —Fred Williamson ’51; john_f_williamson@comcast.net

—1952—

It is with deep regret that I have to inform you that Joseph Mansfield (B.Ch.E.), a longtime Morris County, N.J., resident, passed away on Feb. 16, 2018. He was 87 years old.

Joe grew up in Manhasset, N.Y. He graduated from Xavier High School in New York City, where he was a member of their highly decorated Rifle Squad. He was in officers' training in ROTC and was the senior class president. He was a very active member of the Class of 1952, organizing and participating in RPI reunions until very recently.

He entered the U.S. Navy upon graduation and served as a junior officer aboard the destroyer USS Daly during the Korean War. After leaving active duty, Joe began his long and successful career as an investment banker, consultant, and venture capitalist. During this time, he obtained his MBA from New York University.

Joe married his beloved wife, Grace, in 1958 and moved to Morristown in 1963 with their growing family. They enjoyed a very active life together and traveled throughout the world until Grace's death in 1991. His greatest joys were his family and his faith.

Joe was a parishioner of the Church of Christ the King for over 50 years. He was an usher for more than 35 years at the Sunday mass, always wearing a vast assortment of what are fondly called "Joe's fancy pants." Those of you who attended our reunions may remember some of those pants.

As a very active grandfather, Grandpa Joe/Poppy attended countless birthdays, special occasions,
sporting events, holidays, and graduations with great joy and enthusiasm, always cheering and sporting his colorful pants.

He is survived by his children, Robin O'Connell and her husband, Sean; Kristin Dunn and her husband, Chris; Joe Jr. and his wife, Susan; Kelly Brown and her husband, Allan; and Megan. He will be greatly missed by his 11 grandchildren.

While I sent Joe's obituary by email to my mailing list, there are some Class of '52 members who are either not on my list or who have new email addresses and did not get the obit. So, if you want to honor Joe, please feel free to make a donation to RIPI in his memory.

On a personal note, Esther and I celebrated our 61st wedding anniversary by going to Shelburne, Vt., and visiting and touring the Shelburne Museum, the Vermont Teddy Bear Store and Factory, and the Shelburne Winery. Our anniversary dinner was at a quaint South Burlington restaurant called Pauline's, where we had filet mignon and filet heads. (I think the chef gathered them himself) On the way home on Mother's Day, we stopped at Ben & Jerry's and toured their factory. All told, it was a great weekend.

If you have any news before the next issue, please send it to me. Also, please send me your email address so that I can keep you updated between our newsletters. —Harry (Bud) Hovey '52, bud@uf2h.com

—1953—

Bruce Clements '85 sent a letter highlighting his "student liaison" with our class at our 30th Reunion in 1983. We had 52 alumni which I believe included Dick Somers, Bill Shoop, Bill Glaser, Ron Rubin, and Carl Puchall. Bruce ('85) remembers our singing RPI fight songs as we moved to each event. He sent thank you notes to all 52 but only received my acknowledgement, thus sending me this letter. He hoped his 1983 class would be as enthusiastic as ours, as he said, "you guys rocked back in 1983." Thanks, Bruce, for stimulating our nostalgia.

Some highlights from 1983: the internet officially begins as ARPANET migrates to TCP/IP; seat belts become in wide use; Mazda closes its run; the head of the EPA resigns because of a scandal; Strategic Defense Initiative (Star Wars) proposed by President Reagan; Michael Jackson introduces the "moon walk"; U.S. brokers a withdrawal of Israel from Lebanon; HIV virus is discovered; Japan has a major earthquake and tsunami; severe drought in our Midwest; Sally Ride boards the Challenger; nuclear plants in many countries have problems; Hurricane Alicia hits Texas; Soviets shoot down Korean Air 007; GPS becomes available for civilians; N. Korea kills S. Korea's foreign minister; Baltimore wins World Series; speed of light confirmed; 241 U.S. servicemen killed in Beirut; MLK Jr. Day is created; first Dodge minivan introduced; Argentina, Turkey, and Venezuela begin free political regimes; Irish (IRA) bomb Harrods in London; drug resistance (DARE) is launched; DeLorean Motor ceases production; Arthur Godfrey, Jack Dempsey, Gloria Swanson, Buckminster Fuller, and Joan Miró pass away.

Comic book writer Peter Tomasi, along with artist Sara Duvall, has written a "graphic novel" on the building of the Brooklyn Bridge. The book had a fine review in the NYT, April 16, 2018, titled "A Family, a Vision, and a Bridge." The book illustrates Washington Roebling (Class of 1857) and his wife, Emily, and their Herculean task. Remember also The Great Bridge by David McCullough and Chief Engineer by Erica Wagner (reviewed previously). Our RPI legacy is secure with the bridge and the world-famous Ferris wheel, which illuminates so many cities around the world. —Arthur Goldstein '53; agaera@aol.com

—1954—

65th Reunion: Fall 2019 In February, the New York Times had a detailed obit on Lee Pomeroy, who passed away Feb. 19. Long before Lee became a famous architect he was editor in chief of the Poly, and was elected to Phalanx. I was privileged to be a features writer on the Poly staff, where I first met Lee. Over the years he brought many honors and plaudits to himself and to RPI, and he will be sorely missed. —Bob Meyers '54; bmymeyers@aol.com

—1955—

Tom Bolam and Sally were in Alaska when Hurricane Harvey struck Houston in August 2017. “The Corps of Engineers had to open their dam, flooding thousands of us. We had four feet of water in our house and could not get into it for three weeks. The entire downstairs had to be rebuilt.” Fortunately, they had flood insurance. Many in their community did not, and some houses were torn down. Mail delivery stopped, and a major frustration was having to go to their post office, which serves a half million people, standing in line, ringing a bell, and waiting for someone to go back and look. “The Bolams are considering selling and consolidating life in their other house in NY state, but probably won’t be able to sell until their Houston community is further restored. Meanwhile Tom and Sally, avid golfers, hadn’t played for more than eight months. He expects to keep shooting his age: “It’s getting easier.”

After RPI, Frank Chiarelli played professional hockey for five years, then decided that it was time to settle down. He studied at the U. of Toronto to qualify as a teacher and then taught math, history, and Italian for 25 years. “I had two opportunities to get into the business of hockey and after careful consideration I rejected both. Each would have

On the Bookshelf:

**RECENT BOOKS BY RENSSSLEAER ALUMNI AUTHORS**

### Immune Aspects of Biopharmaceuticals and Nanomedicines

**Raj Bawa ’90 et al. • Stan Farber, 2018**

The enormous advances in the immunology of biopharmaceuticals and nanomedicines in the past two decades have necessitated a comprehensive reference for immunologists, biomedical researchers, physicians, pharmaceutical and formulation scientists, clinicians, regulatory personnel, technology transfer officers, venture capitalists, and policymakers alike. This book provides a broad survey of various interconnected topics in a user-friendly format. The range of the contributing authors reflects the diverse and rapidly evolving fields of biopharmaceuticals, nanomedicines, immunology, and nanotoxicology.

Raj Bawa, M.S. ’87, Ph.D. ’90, is president of Bawa Biotech LLC, a biotech/pharma consultancy and patent law firm based in Ashburn, Virginia.

### The Warrior’s Burden

**Ed Davidson ’62 • Self-published, 2017**

Captain Ed Davidson, known as one of the most outspoken and unconventional characters in the Florida Keys, has compiled a memoir, which Florida Gov. Jeb Bush called “colorful, entertaining, yet often intense and poignant” in the book’s forward. It includes poems and letters the author wrote throughout his service as a “Top Gun” fighter pilot in the Vietnam War. Capt. Ed Davidson ’62, lieutenant commander, USNRR, is an environmentalist who has served as chair of the Florida Audubon Society and advocate for the Everglades/South Florida ecosystem restoration project, among his many public advocacy roles.

### Renewed Energy: Insights for Clean Energy’s Future

**John Weyant ’69, Ernestine Fu, Justin Bowersock • Kauffman Fellows Press, 2018**

Renewed Energy sheds light on the recent history of clean energy between the 2009 recession and 2012. The book provides critical, firsthand perspectives from the industry’s leading policymakers, technology investors, and industry experts, including Secretary of Energy Steven Chu, Secretary of Defense William Perry, and investor Tom Baruch (RPI ’60), among many others, all synthesized into lessons that will bring us a cleaner, more powerful future.

John Weyant ’69, professor of management science and engineering at Stanford, was honored as a major contributor to the Nobel Peace prize awarded to the Intergovernmental Panel on Climate Change in 2007.
required me to be an absent parent and I was not prepared to do that. I made the right decision each time." Frank did other things as well. For years his family operated a road building business where he learned about heavy construction equipment and how to operate it. He and his four brothers built a golf and country club and then, on his own, Frank built and operated three golf courses. "The golf operation became too much and I had to leave teaching. I would have preferred not to."

Frank reports that he is in pretty good shape at age 87. "My wife pushes me to go out and walk." He has sold the golf courses and become an author. After writing some technical papers on golf he has written five full-length books—three about hockey, two not—and is working on a sixth. They can be acquired through Amazon. "I sit in a La-Z-Boy chair. When the thoughts come I put them down. When there are no thoughts there is no production." The Chiarellis have two sons and two daughters. Both boys are in the business of hockey. Peter was hockey captain at Harvard, became GM of the Boston Bruins when they won the Stanley Cup in 2011, and is now GM of the Edmonton Oilers. Michael was a scout with the Bruins and is now with the Oilers. Frank reminisced about the immigrant experience: "I had two older brothers born in Italy. My father came to Canada and brought the family over five years later. I was the first born in Canada and later was much involved in my father's five businesses." Frank keeps in touch with his remaining teammates from RPI's 1954 national championship hockey team, including Lloyd Bauer and John Magadini.

When I talked with Franchard ("Mike") Clarke in April he was about to celebrate his 60th birthday. The Clarkes have seven children, three adopted, and 18 grandchildren, and have served as foster parents for more than 50 children. Recently Mike has been a caregiver: "My wife had a heart attack, and I've had a lot on my plate." He visits with his grandchildren, does some yard work, and continues to be active in his church.

Joe Keating is delighted that his granddaughter is a student at RPI, studying business. "The first assignment was to start her own business. The second was to help Fitbit stabilize their business. They were interviewed by a Fitbit board member who is an RPI alumnus."

JOE KEATING '55 is delighted that his granddaughter is a student at RPI, studying business. "The first assignment was to start her own business. The second was to help Fitbit stabilize their business. They were interviewed by a Fitbit board member who is an RPI alumnus."

Alain Dolmatch wrote that he (and wife Linda) visited with about 20 of his AEPi fraternity brothers from the '50s (and their wives) in North Palm Beach at a March 17 reunion arranged by several locally based brothers. Other Class of '56 members attending included Alan Sawyer and Marty Rogers. While in the area, he also saw Jerry Reinert (and Lulu) in Boca Raton and had a chance to catch up on Jerry's eventful life and times. "After a week of sunshine, the need for an infusion of cold and cloudy weather overtook them and they returned home to Skaneateles, N.Y., for a booster shot of snow and frost."

Dave Richards wrote, knowing of my affection for bridges: "Greetings from Steeler City—Pittsburgh, Pa., the city of many bridges. I play/lead two duplicate bridge games a week...what fun! Looks like the Florida culture could use some bridge technology in view of the recent 'killer' bridge failure. We used to design bridges—not any more. The whole country could use some big-time help with infrastructure. Mind you, I'm not volunteering. My wife and I are enjoying my retirement. Let's Go Bucs!"

I got an email from Crispin Hall telling me that it was Jack Gilmore and he that captained the track team in our senior year. I also got an announcement from Bruce Laumeister telling about the gift of his Bennington Center for the Arts to Southern Vermont College, where it will be named the Laumeister Art Center at Southern Vermont College. The president of the College
said it was the largest gift ever received. The facility, totaling over 36,000 square feet, includes four main galleries, a 315-seat theater and reception area, offices, meeting rooms, and workshop spaces, as well as a distinctive gallery dedicated to the history and culture of covered bridges in Vermont. Those of you who attended our 40th Reunion may recall the great reception and dinner Bruce put on for us at the Covered Bridge Museum. It was also Bruce who took our picture from the ’56 yearbook and placed it on T-shirts for the occasion. Well done, Bruce!

Jim Connors emailed me a summary of his experiences in the Army and with the New York State Department of Transportation in Albany, Binghamton, and New York City and as a geotech engineer in his retirement. He now lives in Cary, N.C., with his wife, Renee, and near his three daughters and six of his grandchildren.

Paul Pillsbury wrote: “In 2000, I retired after 44 years working in the field of gas turbine combustor design, first in aircraft jet engines and subsequently in power generation combustion turbines. During those years we lived in Connecticut, in Pennsylvania (near Swarthmore), and just north of Orlando, Fla. Employers were Pratt & Whitney, Westinghouse, and Siemens Power Generation. Following retirement, we moved back to the Philadelphia area to be near descendants. I am finding that there is no unemployment for those who will work free!”

In the last issue I included a note on Bob McGrath. It resulted in an email for John Cunningham telling me that he, Bob, and Tom Kirchner were brothers in Phi Kappa Tau and that he had kept in touch with Tom over the years attending his wedding, 50th wedding anniversary, and his funeral. Tom retired in 1996 after working 40 years at UGI Corp. and died on Nov. 9, 2017, in Reading, Pa. He was active in community affairs serving six years on the Daniel Boone School board of directors, 12 years on the Amity Township board of supervisors, and was a 45-year member of the Daniel Boone Optimist Club. Tom and his wife, Charlotte, had been trying to get in touch with Bob over the years and I shared Bob’s email with John to give to her. It is this kind of rekindling old friendships and experiences that the class notes are intended to foster.

Bob McGrath also wrote: “Recently I remembered when the Civils were required to take two summer courses in surveying. Our first was for three weeks in June 1954 at Green Mountain Junior College in Poultney, Vt. The other was for two weeks in August 1955, when we were based at the Hoo-sac School in Hoosick, N.Y. Memorable events occurred at both places, but here is one that happened at Hoosac.

“Paul Nepf ’61 is still at the University of Washington working on the brain’s plasticity. Current work may help recovery from spinal-cord injuries, or the strengthening of stronger bonds within the brain itself, e.g., the speech-processing area of a stroke victim’s brain.

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Sophia d’Antoine ’15, a senior security researcher at Trail of Bits, was named the first woman hacker-in-residence at NYU Tandon’s Offensive Security, Incident Response and Internet Security Lab (OSIRIS) in March. As a Rensselaer student, she was a three-year participant in NYU Tandon’s Cyber Security Awareness Week Capture the Flag competition.

Captain Ed Davidson ’62, also known as Lt. Cmdr. “Engine Eddie,” became the 33rd Navy “Top Gun”-type jet fighter pilot to survive more than 200 combat missions in Vietnam and was flying fighter escort next to John McCain when McCain was shot down and captured.

Soraya Fouladi ’16 won a $75,000 award from the Cisco Global Problem Solver Challenge for her company, Jara, which provides emergency education where, without requiring access to infrastructure.

“Why are we here? Not for ourselves, but for, and because of, each other. –For all the shoulders we’ve been standing on over the years. –For those whose footsteps that were beside us, even as we stumbled, –For the countless people we’ve learned from over the last 60 years—beginning at RPI, –For those unable to travel here, whose Spirit was wanting, but flesh weak, –For our gallant classmates who finished their race all too early, and –For those new generation of Rensselaerians who grasp our extended batons as they whip-lash into the 21st century.

“We have so many to celebrate, myriad blessings to be grateful for, and the precious gift of continuing our journeys in the months and years ahead.

“Suddenly, 60 years later, in the blink of an eye we’re back where we started together—to know our time, ongoing missions, and purpose—carrying the torch for all those others we love, owe, and honor.

“Let us raise our glasses to those who inspire and make our presence possible tonight. And for our vintage Class of ’57—whose combined Soul is far greater than our individual parts.”

Keep those emails and telephone calls coming in.

—Frank Griggs ’56; fgriggs@wcu.com

—1957—

We trust that if you attended our 60th last October, you warmly remember that occasion of ’57 comradery and good cheer. In that spirit, we who attended our class dinner that Saturday night in Albany will recall David Brunell’s inspiring toast to our class and to RPI. I’ve asked Dave to retell a shortened version of his toast for the benefit of our whole class:

“We have so many to celebrate, myriad blessings to be grateful for, and the precious gift of continuing our journeys in the months and years ahead. “Suddenly, 60 years later, in the blink of an eye we’re back where we started together—to know RPI and ourselves again as if for the first time. But we are the lucky ones—still entrusted with more time, ongoing missions, and purpose—carrying the torch for all those others we love, owe, and honor.

“Let us raise our glasses to those who inspire and make our presence possible tonight. And for our vintage Class of ’57—whose combined Soul is far greater than our individual parts.”
Among the passengers aboard the Sea Breeze ence. The tour also included several onboard lectures to the islands, beaches, and rain forests of Panama. This cruise provided an interesting and fun adventure through the Panama Canal with excursions to cities, beaches, and rain forests of Panama and Costa Rica.

On a personal note, David reports going head-to-head with a 30-pound snapping turtle, averting disaster dragging it out of his farm-pond drainpipe. Following his mantra “anything worth doing is worth overdoing,” David is transforming the farm into an ultimate nature sanctuary, reforesting 2,000 trees, and planting 40 tomato plants and 60 blackberry vines. David and Pam warmly welcome ‘57 classmates visits whenever in the Washington/Baltimore area.

On a sad note, we heard of the passing of Walt Dartland, who passed away in early March. Walt was renowned as “the man behind Florida’s Lemon Law—and the champion of the little guy.” Noteworthy was the decision to run at 81 as a congressional candidate in a deeply red district as a Tallahassee Democrat, “the longest of longshots.” Walt will be greatly missed! —J.R. “Buzz” Campbell ’57, JRCampbell2@gmail.com

1958—

Send in your updates so that we can share your news in the next edition of Rensselaer magazine.
—Jim Augstell ’58, augstj@juno.com

1959—

60th Reunion: Fall 2019 Herbert Grommec reported that several alumni enjoyed the RPI-sponsored cruise to the Panama Canal and Costa Rica.

Sponsored by the Rensselaer Alumni Association, this cruise provided an interesting and fun adventure through the Panama Canal with excursions to the islands, beaches, and rain forests of Panama and Costa Rica. Also included were a visit to the Miraflores Locks Museum and the new Frank Gehry-designed Biodiversity Museum near Panama City. The last day was spent in San Jose, Costa Rica, with visits to the National Theater and the National Museum.

The tour also included several onboard lectures and guided tours by expert local guides. In addition to learning about the history, culture, nature, and wildlife of the area, connecting up with fellow RPI alumni and sharing common experiences made this journey an inspirational and rewarding experience.

Among the passengers aboard the Sea Breeze small cruise ship from Windstar Cruises were Cris and Douglas Lonnstrom, Ph.D. ’84, Ruth and Herbert Grommec ’59, Cathie and Dennis Reardon ’62, and Karin Dunnigan ’72 and Roy Czerneckiowski, M.E.E. ’66, Ph.D. ’68. —John Lindsay ’59, britcards@gmail.com

1960—

Joel Pratt called me a while ago (remember those old-fashioned phones) and told me the sad news that his brother-in-law Mason (Mace) Cadwell died.

After his graduation, Mace had a three-year stint in the Navy (another old-timer who served) and then received a master’s degree from Columbia University. A later Ph.D. in environmental science propelled him to a career in academic and consulting. Mace and his wife, Jennifer, have horses that they trained and loved. Their three daughters started riding as little girls.

Roger Orloff and I have been exchanging emails on various subjects. Roger, an extraordinary Rensselaer volunteer, agrees with me on the need for some form of universal service for young people. Our Volunteer Army has left out many who could and should serve in some way.

Roger is vice chair of the Leadership Council for the Lally School and co-chair of the Patroon Society of the Annual Fund.

We both agree that whatever complaints we may have about Dear Old Rensselaer, our contributions (monetary and other) are for the Rensselaer students. Let’s keep them coming.

Keep writing—about anything that you wish. —Bill Blanchfield ’60, bblanchfield@hsettlement.com

1961—

For those of you who are still actively playing sports and experiencing leg cramps, you may have seen an article this past year linking this problem not to muscles but rather to your electrical system. More specifically, a neuron in your electrical system. The simple cure to “reset” the neuron is to drink tart cherry juice or any other very tart substance. The simple cure to “reset” the neuron is to drink tart cherry juice or any other very tart substance. I have tried it and it works. Enter Eberhard Fetz, who as a postdoctoral researcher at the University of Washington in Seattle published a paper in 1969 that discussed brain-computer interfaces (BCI) and how a monkey could control the activity of a single cell (neuron) in its brain. Eb's work showed that the brain was capable of learning how to operate a BCI without any help. Forty-eight years later, Dr. Fetz is still at the U. of Washington working on the brain's plasticity. Current work may help recovery from spinal-cord injuries, or the strengthening of stronger bonds within the brain itself, e.g., the speech-processing area of a stroke victim’s brain.

Eb says that there is a high hurdle to conduct these studies in people, but that all it requires for further advances is for scientists to jump in.

In the field of tax-paying workers helping America, Murray Edelberg continues to be a leader as he works toward his 60-year pin. However he has slowed down to working only four days a week. I hope he isn’t getting tired.

Allan Whitemore writes that he and wife Marge recently traveled from their Siesta Key condo to Ft. Myers to visit with two of his Theta Chi fraternity brothers: Jim Briem and his son, and Dave Boshart and his long-time Swedish girlfriend. They reminisced about the old fraternity house at 57 Second Street and competitive bridge games at the one bridge table in the fraternity. —Brian McManus ’61; briann44@skyglobe.net

1962—

One of my most trusty companions at RPI was my manual L.C. Smith typewriter. To say it was a boat anchor is no exaggeration. However, it never failed me and, unlike a personal computer, it taught me to type carefully so as to avoid mistakes. The typewriter was a gift from my mother who obtained it from my father’s office when they upgraded to electric models.

Dr. John Hall contacted me via email to say that a documentary film titled Secrets of a Frozen Ocean won the award this year for the best documentary at the New York City International Film Festival. John owns the hovercraft that was used in the film, and he funded much of the work. In the movie, he said, he appears as “Executive Enabler.” John has lived in Israel for about 68.6 percent of the country’s existence. —Jay Winderman ’62; jwrm@earthlink.net

Tiffini Eugene Jones, M.S. ’94, is one of a cohort of 80 female scientists selected to participate in a yearlong global leadership program, Homeward Bound 2019. The program culminates in a two-week expedition to Antarctica studying climate change science with scientific innovators and leaders in the field.

Kareem Muhammad ‘01, engineering core senior manager in the Seat & In-Flight Entertainment Connectivity Integration Team at Boeing Commercial Airplanes, was named the 2018 Golden Torch Award Distinguished Engineer of the Year by the National Society of Black Engineers (NSBE).

Nick Miller ’79 has won a Lifetime Achievement Award for his work integrating wind and solar energy into electrical systems. Nick has worked for the General Electric Company for 37 years and is a senior technical director of GE’s Energy Consulting Group.

80

2018

37

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—1963—

After a career with Eastman Kodak, Pantone Inc., and Monroe Community College, John Setchell tells me that he is now fully retired. John, a physics major, earned his M.S. in physics from the University of Illinois. He is enjoying life as a new member in Webster, NY, having married Margie Cole on Thanksgiving in 2016. The happy couple traveled across country by train in 2017 to view the solar eclipse from a farmer’s field in Oregon. John also wanted his classmates to know that he suffered the loss of his dear wife, Judy, to leukemia in February 2015. As with all of us, John finds it hard to believe that it has been 55 years since graduation from RPI.

Looking back, it was during the fall semester of 1961 that novelist John O’Hara, President Kennedy’s press secretary Pierre Salinger, publisher William Randolph Hearst Jr., and New York Governor Nelson Rockefeller spoke on campus. I think that was the year that William F. Buckley also gave a lecture at RPI. On the topic of how things change, the Rifle and Pistol Club held a pistol match against Vermont and St. Lawrence universities at the Field House. RPI won! I guess that doesn’t occur today. Election results for Junior Class Representatives showed that Dick Kammann and Roger Lourie led the field over Steve Smith and Bill Wilkes.

My mailbox has been pretty much empty. Send me a note, especially those who promised at our 50th! —Jack Titely ‘63; rpi63@specialops.com

—1964—

55th Reunion: Fall 2019 Bruce McKeon wrote to say that last April he and his wife, Kathleen, went on a scuba live-aboard Bahamas trip, and then in September they spent three weeks in Europe (before a sales meeting in Vienna). They skied at Vail in February, and are soon off to go to Manado in Indonesia for another scuba diving and adventure trip. Bruce reports that he is still working a few days each week with equipment for the papermaking industry in the Southwest—but with all that traveling it sounds to me like he has no time for work!

On a sad note, you may have read in the last issue of our Class Notes that my good friend and Westchester (NY) buddy Richard Koser passed away about six months ago as a result of a long siege with Parkinson’s disease. Rich was a close friend and a loyal member for many years of our Westchester Alumni Club. I will miss him.

Del Webster is proud of his grandson, Eamon Murphy, who graduated from the College of St. Rose in Albany this year, with an award as the Outstanding Senior in Accounting, and will now be pursuing his MBA. Congratulations, Grandpa.

My old pool-playing buddy Tim Russell wrote in from the Philadelphia neck of the woods to say that he and his wife, Chris, remain active in their church, St. Thomas’ Episcopal at Whitmarsh. Tim was the owner’s rep for a $5MM renovation of the Parish House and construction of a new education center (Carey Learning Center); 10 months of great fun watching the construction from the muddy beginning in hard hat and boots to the grand opening in late 2016. Happy to say the project came in on budget! Tim and Chris welcomed three great-grandchildren: Oliver, Eliza, and Jaxon. In between births, they traveled to Australia to visit her sister in Sydney, then a tour of the Great Ocean Road to Adelaide seeing the sights and visiting wineries, and then to Perth. “Both Perth and Adelaide were quite interesting, and Perth especially had an outstanding public transit system. We liked Fremantle, which is the port for Perth and the site of some of the America’s Cup competitions.” While there they enjoyed a sail on a Cada—a type of fishing boat used for barracuda fishing and now prized by local sailors for racing.

Our superb class webmaster, Bob Burns, reports that in January, sort of on the spur of the moment, he invited his lady friend, Sherry, to visit friends in Costa Rica. These were friends he had met in Malaysia and their paths crossed again in Thailand, the Maldives, Sri Lanka, Turkey, Spain, and other places in between. In any event, he and Sherry crashed at their very environmentally friendly house in San Jose, and then used the next two weeks to go on hikes, view birds and other wildlife up close, raft on a Category-4 river (never again!), hang out in a luxurious mountain retreat, walk the streets of La Fortuna, swim in the warm Pacific in Quepos, and eat lots of beans and rice. Costa Ricans are a friendly and proud people and travel was very safe everywhere they went. Then in February he had to escape the “cold” of Tallahassee, and go further south to Marathon in the Florida Keys. “I pitched in with other RVers to help clean up the streets and mangroves that were devastated by hurricane Irma, which left a lot of damage behind. A bit of reading, relaxing, and swimming filled out the month.” Tough life, eh?

Steve Weinstein wrote to say that he and his wife, Judy, cruised in January on a Regent Cruise Lines ship for a 19-night voyage from Beijing to Singapore with stops in Shanghai, Hong Kong, Hanoi, Saigon (Ho Chi Minh City), and Bangkok. He got to experience a rapid train ride in Shanghai on an electro-magnetic field train, where the train levitates off the ground, and within 10 seconds gets up to 250 mph! It made the 18-mile run to the airport in under eight minutes! They also enjoyed day trips to the Great Wall of China, Tiananmen Square, the Forbidden City, and the Summer Palace. They also stopped in Vietnam, visiting the Hanoi Hilton and reading the “North Vietnam” version, which starkly contradicts the American or South Vietnam version. All in all it was a great trip.

And finally I can tell you that my wife and I and a half dozen friends spent a nice, warm 10 days in Palm Springs (Calif.) in mid-January. We first attended quite a few showings of some of the movies included in the Palm Springs Film Festival—a first for us for sure! That was followed by a week of touring the Palm Springs and surrounding desert area. Highlights included a tour of a wind farm (renewables are certainly the future); an architecture tour of the many mid-century modern homes in the area; a visit to the cemetery where Frank Sinatra is buried; and a tour of the Annenberg estate Sunnylands, used by many presidents with whom Mr. Annenberg was friendly. That was truly an amazing place; if you haven’t been I highly recommend it.

Please keep your updates coming in to me; they are much appreciated by all our classmates! —Michael Wellner ’64; captmike64@eak.com

—1965—

Vic Delmore wrote after reading about the passing of our fraternity brother Dave Rowell in my last column. In response to my request, he offered
the following about his post-retirement career: “Well, art is something I’ve done all my life—I first learned to draw as a kid in Holland where my dad was stationed at our embassy there. Then at RPI I loved all the graphics courses and took a couple of electives in the School of Architecture. Right after graduation, I began exhibiting in galleries, beginning on Cape Cod while a grad student at Woods Hole Oceanographic. These were mostly pen-and-ink drawings of local seascapes. Through two more degrees, a commission in the U.S. Coast & Geodetic Survey (now NOAA), a few years on the faculty of Rutgers University, a reserve commission as a Navy flight meteorologist, and a 31-year career in remote sensing at NASA’s Langley Research Center, I continued drawing and painting.

“Upon retirement from the Naval Reserve (as a captain) and from NASA, I found time to not only exhibit in galleries, but to actually work in them! The work at NASA included much flying (deliberately!) through microbursts and wind shear to develop sensors, instruments, and severe-weather escape protocols to make flying safer. My wife, Candie, and I live in Fort Myers, Fla., where we both exhibit our art and volunteer our time at the art gallery owned by and benefiting the organization that provides shelter and rehabilitation for victims of domestic violence. Our five children and seven grandchildren live in Pennsylvania and Virginia. All the grandchildren are learning various musical instruments, and I join them with my fiddle when we’re together.” Vic’s contact information: http://victor-delnore.pixels.com/.

Allen Weston offered a brief summary of his post-RPI career. Enrolled in Army ROTC, he was commissioned as a second lieutenant upon graduation. He actually volunteered for combat in Vietnam but was turned down for poor eyesight. Instead he went to Purdue, earning an M.S. in nuclear engineering, as the Army “figured out nukes were more important than cannon fodder.” His assignment was to determine whether the newly deployed Minuteman II ICBM with the MIRV Mark 12 warhead was capable of taking out hardened Soviet missile silos. (Answer: No.)

After leaving the Army, Allen went to Stanford Business School, then spent 15 years on Wall Street, retiring in 1988. He commented that while a number of his Pi Kappa Phi brothers went into military service, only one, Bill Torpie, paid the ultimate price.

Allen sent me excerpts from two books written by Colonel David Hackworth, About Face and Hazardous Duty, which described Bill’s death and for which Hackworth, as his commanding officer, continued to feel responsible. Allen and I would both like to learn whether any of our other classmates gave their lives in Vietnam. The RPI alumni office was unable to answer my query, but if any of you know of others, please let me know, and I will share the information in a future column. Allen’s contact information is: allen_weston@aol.com. — Erik Pettersen ’65; erik.pettersen@comcast.net

—1966—

J. Brooke Harrington earned a B.S. in building sciences in 1966, and a bachelor of architecture in 1967, both from RPI. These degrees would prove to be a firm beginning for a distinguished professional career. He has achieved many major milestones in over 35 years of architectural practice, research, and teaching. His acclaimed work has led to numerous awards, notably including a National Endowment for the Arts “Accomplished Professional” fellowship.

He is now professor emeritus in the Architectural Department of the Tyler School of Art at Temple University, where he taught from 1983 through 2010. Professor Harrington and his wife, Judith Bing, who is a professor emeritus at Drexel University, have collaborated on many exhibitions, papers, and a book, but one can only be especially impressed by their authoritative and continuing studies, over many years, of the “vernacular architecture” of the historic regions of the Balkans, from Slovenia in the northwest, to Turkey in the east.

These scholarly efforts by Professors Bing and Harrington will culminate in a gift of enormous cultural significance: They plan to donate literally thousands of photographs, and hundreds of books and manuscripts, drawings, and other documents, to the Aga Khan Documentation Center at the Libraries of the Massachusetts Institute of Technology, where they continue as visiting scholars.

This generous gesture is a reminder of Rensselaer’s continuous encouragement of its students to utilize “knowledge and thoroughness” for the benefit of the world outside the classroom. For further information about their work in the Balkans, please visit balkanarchitecture.org.

Judith and Brooke have two children—Elizabeth, and Jonathan from Brooke’s first marriage—who have successfully embarked on careers of their own. Judith and Brooke reside in Cushing, Maine, where they make time to continue volunteer work with town organizations. —Les White ’66; polmaris@aol.com

—1967—

From Lee Savidge: “I am an active member of the Syracuse Veterans Writing Group, Syracuse, N.Y., and we recently published an anthology titled The Weight Of My Armor. Included are true stories and some poems from 23 veteran men and women whose service in the U.S. military varies from WWII to the most recent conflicts in Afghanistan and Iraq. All military services and the Coast Guard are represented. The publisher is Parlor Press in conjunction with New City Press and you can check it out at Amazon. My story in the anthology is titled ‘Air Force Brats Conquer Alaska.’”

From Norm Leferman: “You might wonder what a person with an undergraduate degree in language and literature from RPI might become. In fact, unless you knew one of the three to five people in the program in the mid-’60s, odds are that you didn’t even know that the Tute offered such a degree. Well, they did and I was one of the very first to earn it. Now, 50 years later I am happy to report that I have had a very successful, 45-plus-year career in market research, specializing in communications testing and new product development and positioning. After a brief stint as a computer programmer to earn some money while attending graduate school, I was hired by BBDO Advertising as a market research analyst with no relevant experience. But they taught me a lot. By 1977, I had enough experience and intestinal fortitude to found Leferman Associates. Since then I have had the good fortune to work with over 360 client companies (all the big names in foods, cosmetics, financial services, and medicine), conducting all manner of quantitative and qualitative studies. And, I am still working—every project is a new adventure. While I can’t say that my degree in language and literature provided any specific assistance, I will say that having any degree from RPI (along with my
UConn MBA) gave me some early credibility as I launched my career.”

From Steven Kramer (B.S. ’67, M.S. ’68, Ph.D. ’73): “After I earned my doctorate at RPI, I started my teaching career at The University of Toledo (Toledo, Ohio). I retired from there in 2008 after a 35-year career in teaching and research. During that time I served as director of undergraduate studies in both mechanical and industrial engineering from 1994 to 2008. My research areas included mechanical design, kinematics, dynamics, human factors, ergonomics, and computer-aided design. I published over 90 articles in various conference proceedings and archival journals.

“Interspersed with my studies at RPI, I was an associate mechanical engineer at IBM Corp., a test engineer at Overboard Marine Corp. driving boats on Lake Michigan for a whole summer, which was a blast, a draftsman at the Dunham Tool Co. in New Fairfield, Conn., and associate research engineer at Albany International Corp.

While at the University of Toledo, I assisted attorneys in over 250 cases for both plaintiff and defense in motor vehicle accident reconstruction as well as accidents in the home and workplace. I was an expert witness in many product liability and accident cases.

“I have been active in ASME over the years. This included University of Toledo ASME faculty advisor for 18 years, national chairman of the Design Engineering Division Honors and Awards Committee, chairman of the Education Group, and many other positions. In 1987 I became an ASME fellow.

“I was fortunate to have received several awards during my career. This includes the University of Toledo Outstanding Teacher Award in 1984 and the Outstanding Advisor Award in 1994. In 1985 I received the Ralph R. Teeter SAE Award. I received the ASME Faculty Advisor Award for Region Five three times. In 1988 I was chosen as the Outstanding Engineering Educator for the State of Ohio by the Ohio Society of Professional Engineers. In 2000, I received the Honor Professor of the Year at the University of Toledo.

“Since retiring in 2008 I have been a volunteer math and science tutor, first at a local community center, and now at Perrysburg High School and Junior High School (Perrysburg is just south of Toledo), I also became a snowbird. My wife and I go to Fort Myers Beach for two months in the winter. On the way down and back, we visit our son, daughter, and five grandchildren who live near Orlando.” —Stu Berg ’67; stuartberg@alum.rpi.edu

—1968—

Classmate Robert Sturm sent in a short description of his 2017 trek of the Annapurna Circuit in Nepal with a guide and porter. In spite of a torn MCL and a knee brace, he completed the 90-mile trek that went through the 17,700-foot-high Thorung-La Pass in 16 days. The weather was cooperative with only one day of rain/snow, which allowed Robert to take many outstanding pictures of the mountains in the Annapurna range. He describes the trek as a great adventure in spite of returning home with pink eye and a mild case of bronchitis.

Last May Nick Pinchuk was selected to address the Southern Vermont College Class of 2018 at the school’s 91st Commencement. He also received an honorary degree from the college based on his leadership in the areas of workforce development and technical education and careers. He is currently the president and CEO of Snap-on Inc. and has been widely recognized for his contributions to the formation of the country’s technical education agenda and for the growth of a skilled workforce. The former St. Joseph College that you may know from your days at RPI became Southern Vermont College after it moved to its current Bennington campus in 1974. The college became an accredited four-year college several years after the move and competes with Rensselaer in NCAA Division III women’s basketball. —Mal Crawford ’68; KIMC-Mail@earthlink.net

—1969—

50th Reunion: Fall 2019 Dave Burkart sent photos from a recent bicycling vacation in France with Lambda Chi Alpha brothers Bob Darnall ’67, Chan Sweetser ’67, Lee Broad ’68, and Pete Donohoe ’69 (see photo, page 50). After three days in Paris, they rode between 30 and 40 miles a day in the Loire Valley where the kings of France built their fabulous castles–Chateau de Chambord, Chaumont, Amboise, Chenonceau, Villandy, and the Palace at Versailles. Although Dave, Bob, Lee, and Pete have kept in touch and seen each other over the years, none of them had seen Chan in about 50 years. It was a wonderful reunion and a great vacation. —Henry Schecter ’69; henrytna@gmail.com

—1970—

I reconnected with basketball buddy Bob Reith. Bob’s passion is now photography, and he says that beyond working out, he gets a lot of his exercise photographing wildlife. He uses two primary lenses among several, and one of them is a beast, weightwise. His wildlife photography is something to behold. Go to his Facebook page and check out his wildlife photos: www.facebook.com/bob.reith/photos.

Gordy Benoît not only volunteers with ski patrol but also with Flower City (Rochester) Habitat for Humanity. Within the last year he has helped Habitat rehab neighborhoods in South Florida and in Rochester.

Ed Touchette continues his artistry. Four pieces from his exhibition at Trident Gallery—Lessons, Barns and Other Structures—were featured in the Spring 2018 issue of Watershed Review, a publication of California State University at Chico. See www.csuchico.edu/watershed/2018-spring/art.

A little bit of trivia from our Class of ’70 FB page.

Lee Mandeli said, “My fraternity, TEP, hired The Doors to celebrate an anniversary. An expensive bet that enough tickets would be sold to recoup the cost of $10K; yes that is all that they cost. I was disappointed that they didn’t come to the house afterward, but I did sit in the front row for the concert.”

I look forward to hearing from more of you as we get closer and closer to our 50th. Our Class of ’70 Facebook page now has almost 60 members, so connect if you can. As many of you post on FB, we are “working at retired.” We would all like to hear about your travel, your service to the community, and those things you would like to share in our Class Notes section of Rensselaer magazine. Send them to me. —Rick Hart ’70; harttrm@aol.com

—1971—


I received this note from Gordon Coss: “I like to remind colleagues in our age group that Facebook does have positive features. Heading from MA to FL in February and posting as I drove. My freshman RPI roommate 1967-68 contacted me to say he lives in Tampa and to stop in. We had dinner and caught up on 50 years. Great evening with Steve Gerstein,” Gordon, would you believe I remember Steve Gerstein? He was a sprinter on the RPI freshman track team!

The Adirondack Almanack recently ran a front-page article on trailblazer Kathleen Suozzo: “Kathleen Suozzo’s work is at the heart of one of the more difficult issues facing the Adirondack today: upgrading aging waste-water and drinking-water treatment facilities in small communities where the cost is borne on the backs of local residents, though the heaviest usage is when tourists and seasonal residents come to visit. At stake are the lakes, rivers, and streams of the region.” Kathleen is an RPI engineering grad who lives in Bolton Landing, N.Y.

Linda Miller, founder and co-president of the Newburyport Preservation Trust, presented a ses-
**Robert Lieberman ’71 Elected to NAE**

Robert Lieberman ’71, M.S. ’74, president of Lumoptix LLC, has been elected to the National Academy of Engineering and recognized for “innovation, development, and deployment of optical biosensors, physical sensors, and chemical sensors, and for support of international education in optical technologies.” Election to the academy is among the highest professional distinctions accorded to an engineer.

Lieberman began his career at AT&T Bell Laboratories working in semiconductor device development, physics research, and materials research. He then joined Physical Optics Corporation, where he became vice president and general manager for research and development. In 1998, he left POC to found Intelligent Optical Systems. Recently retired from IOS, he now consults through Lumoptix LLC and serves as chief technical officer of Taft Optical and president of Adaptive Computation LLC.

Lieberman holds 34 U.S. patents on biological, physical, and chemical sensors, and has chaired dozens of conferences on optical sensors, and has helped found more than five startup companies. A fellow of SPIE, the international society for optics and photonics, and a senior member of IEEE, Lieberman earned his bachelor’s and master’s degrees in physics at Rensselaer, and his doctorate in solid-state physics and biophysics at the University of Michigan.

The article continues with a list of RPI track and cross country hall of fame, including William “Ziggy” Bernfeld, and his four grandchildren.

—Seth Bergmann ’71; bergmann@rowan.edu

—1972—

I’m sorry to report that William “Ziggy” Bernfeld passed away on February 26, after a long struggle with lung disease. Ziggy graduated from the Lally School and received a commission from Army ROTC in 1972. He earned an MBA from the University at Albany and an M.S. in accounting from Pace University. He retired from the Army in 2002 after 30 years of service. He maintained a lock on the preservation of 18th-century houses. Linda moved to Newburyport in 1975 after completing her M.A. in architecture at MIT. Since then she has run her own firm specializing in the restoration and remodeling of older buildings.

RPI track and cross country hall of fame Bill Pollock of Hunt, N.Y., completed the 2018 Boston Marathon in 5:19:47, which was 383rd place in the M65-69 age group. The runners fought strong headwinds on a cold rainy day in Boston. Congrats, Bill! I completed the Haddadfield Adrenaline Run 5K road race on March 17 with a time of 21:34, which placed me second in the M65-69 age group.

—Bob Dvorak ’72; bobdvorak@hvc.rr.com

—1973—

Well, RPI certainly has a following at the Yale School of Engineering and Applied Sciences (SEAS). Our ’73 classmate Mitchell Smooke recently was named acting dean of Yale SEAS, succeeding Kyle Vanderlick, RPI Class of ’81.

Mitchell is the Strattonica Professor of Mechanical Engineering and professor of applied physics and has served as chair of the Department of Mechanical Engineering and Materials Science for over 12 years. He is a widely recognized expert in computational studies of combustion—especially investigating methods of quantifying combustion-generated nanoparticles from land- and air-based systems. I’m sure you have all been wondering what happens to those nasty nanoparticles when they are spewed in the air. Mitchell has developed models to know where they go and why. Congratulations to Mitchell on his appointment.

In other news, the Rensselaer Outing Club had a 40ish reunion of sorts with several members of our Class of ’73 present. (Yes, they went camping...of course...to the Mojave Desert at the Joshua Tree National Park). Campers included classmates Roger Harris, Carlos Barraza, Ginny Kania Solla, and Ginny’s daughter, Victoria, RPI ’11. No rain was reported, as it hasn’t rained in the Mojave Desert in years.

Finally, our old friend Michael Eckstut commented on Robert Bochnak’s LinkedIn blog recently on the most important qualities of board members. Michael says it’s important to “not try and run the business...recognizing that only in rare instances will you know more than management about specific business issues. Good advice.

I was looking forward to seeing many of you at our 45th Reunion in late September. We’ve been having a great time catching up...check www.rpi73.org for updates. —Gary DiCamillo ’73; garydicamillo@gmail.com

—1974—

45th Reunion: Fall 2019 Reunion 2019 is only a year away and we need your help to make it a success. Please let me know if you can volunteer some time to share your thoughts and ideas as part of the Reunion 2019 committee. This Reunion is an important predecessor to the big 50th Reunion in 2024 which coincides with the 200th anniversary of RPI. This is not a hard job and with all your retirement time maybe you can spare a few hours.

We generally conference call and decide where to have our class hotel and where to have our dinner (and what to eat!). Now this is something anyone can help with. If you didn’t like our choices in the past, now is your chance. A few of us make phone calls to get the rest of the class on board but that is not a requirement. The work starts a few months from now. So how about it, Class of 1974? Let me hear from some volunteers (please don’t make me beg). Remember, if you don’t volunteer you may get elected class president or something worse.

This past February I had the pleasure of lunch with Dr. Jackson as well as several members of staff and students when they visited Sarasota, Fl. They discussed the new Transformative Campaign with the purpose of raising $1 billion. While two of the three pillars are simply doing what was always done, i.e.—enhancing the student experience, developing world-class teaching and research—there were two new programs: CLASS (Clustered Learning, Advocacy, and Support for Students) and the Center for Science—a state-of-the-art laboratory/classroom building which would gather programs throughout the campus into one location and allow the expansion of the Jonsson Engineering Center and better coordination among engineering programs. Whether the Center for Science would be complete by 2024 (our 50th year and the Institute’s 200th) was not clear but certainly within possibility. I asked her if the naming rights were available and she smiled and replied, “Yes.” Anyone out there with several million dollars or perhaps a few thousand Bitcoins might want to think about it. For more info, visit transformative.rpi.edu.

George Jakobsche writes that after software engineering for 20 years he started attending law school to become a patent attorney, because DEC wanted to grow its in-house patent group. His boss said he would pay for tuition and books but halfway through law school, DEC laid off his entire department. After 18 months of “consulting,” he got a job at an intellectual property (IP) law firm in Boston. A couple of years later, his former boss asked if he was interested in applying for the company’s first-ever in-house patent counsel job. Going from being a first-year associate at a law firm to being in-house patent counsel didn’t hurt, either. After six years, he left to join a different law firm, then another, and finally ended up at Sunstein Law for over 10 years. He says he still writes code for fun (Arduino projects, and the like), and is still a ham radio operator.

George tells me he is living in Concord, N.H., with his wife of 30 years and they have two children, one a chemistry professor at Clark University, the other a photographer. “I like all kinds of beer, especially Belgian and Scottish ales. I always have at least a
dozen different kinds of beer at home in my beer fridge (a dorm refrigerator, whose thermostat I modified to run at beer temperature), and about 200 bottles of wine in the crawl space under my house addition. Hobbies include photography (beginning on astrophotography now), woodworking, and electronics projects.” George can be reached at gjaekobsche@sunsteinlaw.com.

One of our classmates is keeping very healthy while helping others with autism. Robert “Nick” Nickerson is in the process of running 3,000 miles to raise awareness for the need to fund research to find the cause(s) of autism before it becomes the disease/disability of the century. As of April, he had passed 1,300 miles and was still going strong—or at least as strong as anyone can at 72. For more info or to donate, visit his website 3000MilesForAutism.org. If classmates don’t remember him, it is because he has never been in Troy...he graduated from the RPI Hartford Graduate Center.

When the law firm of Dickinson Wright chose to open a branch in Silicon Valley, they picked Michael Ferrazano as the member for the office of patent agents and property attorneys. Michael brings his experience in computer networking, digital signal processing, integrated circuit design, and semiconductor device fabrication to the firm.

He is recognized as a “Top Lawyer” in intellectual property by Sacramento Magazine.

Duane Covino continues to make good use of time in his now almost 11-year-long retirement from full-time work. In October 2017 he joined an “Arts and Ceramics of China and Taiwan” tour, visiting such places as Jingdezhen, the “mecca of meccas” of Chinese pottery. He continues to study and practice pottery at his local community college, and is also finishing his third semester of Spanish language studies. During spring break 2018, he joined a weeklong guided tour of Portugal. While in line in the Geneva airport to change planes for Portugal, directly in front of him was RPI Class of ’84 alum Michael Gobeli, who noticed that Duane was wearing a light-grey RPI fleece jacket. (It pays to advertise!) —James C. Wernicke, P.E. ’74; wernickejc@yahoo.com

—1975—

Greetings to the Class of 1975! Got a note from Leland Deck last winter that just missed the cutoff for the Spring ’18 issue, so here it is:

“In October a group of ’70s-era Rensselaer Outing Club (ROC) members had a 40th-ish-year reunion (camping of course). Roger Harris, ’73 & ’76, wisely picked a place to go camping that (a) has stellar rock climbing and hiking, and (b) where we could absolutely count on it not raining; California’s Mojave Desert. The 11 ROC alumni attendees in Joshua Tree National Park for four days graduated from RPI from ’71 to ’78 (our 12th camper is a courageous wife who’s tolerated ~40 years of bizarre ROC tales and ROCer visits...surely earning honorary ROC status the hard way).

“The campers who managed to remain hale, hearty, and crazy pulled out the ropes, carabiners, etc., and tackled JT’s spectacular red granite formations, while the saner ones hiked and explored Joshua Tree. No ROC gathering could ever be complete without a slide show, of course, JT NP is a designated International Dark Sky Park, providing a spectacular backdrop to share old and new pics of our wilderness adventures around the world and reminisce.

“While planning, we heard from dozens of other ’70s-era ROCers, who offered lame excuses like ‘I’m hiking in Peru’ or working the grape harvest, or the so-so sad ‘still have an office job’ affliction. As we packed up we started planning for another reunion in 40 years, but some talked us into trying to do better than that. As long as we’ll be at another rain-free campground, we’ll likely make it.

“PS: A special shout out to Victoria Solla ’11. Not only did she follow both her parents’ path to RPI, but she was also a hard-core ROCer; a certified double-barreled RPI-ROC legacy!” To see who attended, see photo, at left.

Big news from the Stark household is the engagement of my older son, Chris. Maureen and I won’t be going on any big vacations this year—the wedding will be in October.

Send news and updates. Cutoff dates are May 1 for the Fall issue, and November 1 for the Spring issue. —David Stark ’75; dstark@hotmail.com

—1976—

After 20 years as an avionics consultant in support of USAF surveillance aircraft (E-3 AWACS and E-8 JSTARS), Nelson Gomm, M.S. ’76, retired last August. Now living on Cape Cod with his wife, Laurie, he has resumed a hobby he had ignored for over 50 years—ham radio. “RPI and NCE gave me the education, tools, and confidence to become an independent contractor.” He can now spend more time with family and boating in the summer.

John McManus was promoted to senior vice president, environmental services, at American Electric Power in March. He is responsible for directing the development of environmental policy for AEP, assuring compliance and overseeing environmental support services for AEP’s generation and energy delivery facilities.

Robert Saia, M.S. ’76, was named senior vice president, business development, at Cadence Aerospace, a provider of highly complex aerospace components and assemblies to manufacturers of
A plea to our Facebook page—RPI Class of 1977—brought in a little news I can share with you. From Vic Vitek: He and his wife are in the process of selling the house they have lived in for over 25 years and are having a retirement home built in New Hampshire. They hoped to be in it by September. Good luck with the move, Vic!

Rick Brodzinsky retired last June after being with IBM for 34.5 years. Congratulations, Rick!

Jim-Bob Williams joined an improv troupe and will be doing stand-up comedy soon. All of us know he will be great at that and wish him the best. I was delighted to see him at Reunion last fall. We hadn’t seen him since our wedding!

Bryon Harry Rakoff wrote that he retired last fall from full-time work. He was an airport planning consultant in the private sector for 27 years and then was with the Federal Aviation Administration Airports Division for 13 years, and is now working part time. He and his wife, Linda, are enjoying semi-retirement and are planning numerous trips including one to Poland and Russia and a cross-country drive. He is still very involved with theater, most recently in a local production of My Fair Lady. As a former RPI Player, he writes that he still knows “which way is up”!

Barbara (Compaine) Cobuzzi left her former health-care billing company and really likes being back on her own again. Bob Cobuzzi is still working at AT&T as a project manager for new tech and human performance management services. They enjoyed a vacation to the Dominican Republic in March and really enjoyed our 40th Reunion last October.

That's it for this time! Now—while you are thinking about it—send me a note! —Maureen H. Regan Robinson ’77, maureen7221@aol.com

—1978—

Expect to have lots of stuff to write about in the next edition from our 40th Reunion. If you weren't able to attend, please send me a quick email, as we would love to hear from you!

Donna Hamlin has been appointed to the board of directors of DailyPay. Dr. Hamlin is an internationally known authority in human resources, and has provided strategy, change management, and human performance management services for Fortune 500 global enterprises in more than 44 countries. DailyPay enables an employee to transfer earned wages when the employee needs them, rather than waiting for a weekly or biweekly paycheck. This provides a first step for the employee toward financial security, resulting in a 40 percent reduction in voluntary turnover within three months, accompanied by an increase of 87 percent in employee satisfaction and a reduction in employee absenteeism of 26 percent. Dr. Hamlin is currently a CEO of Boardwise LTD and board chair of Hamlin Harkins Ltd., and has worked with Citibank’s Associates First Capital, Trident Systems, Asyst, and Texaco.

Anthony DeLio has been promoted to senior vice president, corporate strategy, and chief innovation officer of Ingredion Inc. Most recently serving as senior vice president and chief innovation officer, Anthony is responsible for further developing the company’s strategy, identifying growth opportunities, and pursuing partnerships and acquisition opportunities. He joined Ingredion in 2006 as divisional vice president and general manager, North America. Prior to Ingredion, he held senior leadership positions with ADM, Mars, and Nestle. Ingredion is a global ingredient solutions provider, turning grains, fruits, vegetables, and other plant materials into value-added ingredients and biomaterial solutions for the food, beverage, paper, brewing, and other industries. Serving customers in over 100 countries, their ingredients make crackers crunchy, yogurts creamy, candy sweet, paper stronger, and add fiber to nutrition bars.

I enjoyed a great ski season here in the Northeast and had a good ski trip with my wife and friends to Morzine, France, in March. Mountain biking season is now upon us and I’m focused on not going over the handlebars or hitting trees! —Mark Keough ’78, mark.keough@cox.net

—1979—

40th Reunion: Fall 2019 Paul Vitucci writes that while he was seriously considering retiring in the next year or two, he received an offer he could not refuse. He left American Bridge Co. after 22 years and started working as the quality manager for Brightline, a new express rail service in South Florida. His focus will be on the east-west rail line construction in the undeveloped corridor from the Florida east coast to the Orlando airport.

Nick Miller has won a Lifetime Achievement Award from the Utility Variable-Generation Integration Group for his work integrating wind and solar energy into electrical systems. Nick has worked for GE for 37 years and is a senior technical director of GE’s Energy Consulting Group. He has spent more than 15 years working as an inventor and technology developer for GE’s wind equipment business, focusing on making wind and solar power grid-friendly, including developing several patents.

And has it really been 40 years since we received our diplomas from George Low? Plan to join us at Rensselaer for our Class 40th Reunion next October—the exact date hasn’t been set as we go to press. —Paul Sicard ’79, psicardl@entergy.com

—1980—

Bob Schuetz was promoted to operations vice president at Energy Northwest in April. Before joining Energy Northwest in 2013, he served as maintenance manager at the Institute of Nuclear Power Operations. Bob served as a submarine officer in the Navy for 28 years, including time as commanding officer of the attack submarine USS Hyman G. Rickover and deputy commander and chief of staff for the Submarine Force U.S. Pacific Fleet. —Kathy Pratt Harrington ’80; kpharrington@gmail.com

—1981—

I heard that Larry Landon and Jack Colucci got together in Niagara Falls, when Jack was up there for a hockey tournament. I am informed that after 37 years, Jack still has it! He can still make plays! And speaking of Larry Landon, he is the...
executive director of the PHPA—the Professional Hockey Players Association. They are celebrating their 50th anniversary, and have only had two executive directors. Larry has been in this position since 1993. In celebration, two YouTube videos were made and you can see the great work done by our classmate Larry; www.youtube.com/watch?v=DwTVbHMI5hI&feature=15s and www.youtube.com/watch?v=Ufaisoy62Tw.

What great tributes these are. Lou Lamoriello and the hockey night Canada legend Don Cherry have some great things to say about Larry and the PHPA. This is a true tribute to my friend. Hat's off to Larry.

Cliff Meiselbach (BSME) has retired after a 36-year career at IBM, including positions as CFO of its Greater China Region and its Microelectronics Division. He and his wife, Elizabeth Katz (M.S. Psch), reside in Fairfield, Conn., and recently celebrated their 35th anniversary while on safari in South Africa. They plan to increase travel and family time, while plotting their next career moves.

Frank Scavo sent news that Gustavo ‘Gus’ Santelli passed away May 15, 2017. His career included two decades at DuPont, and almost 15 years at Lead Time Technology, where he became president and CEO.

Marc Glasser ’81, mglasser81@gmail.com

—1982—

Please join us on Facebook: www.facebook.com/groups/RPIClassof82.

A. Curtis Pagano is the VP of quality and regulatory compliance at Delavau Pharmaceutical Partners in Philadelphia, Pa. He is expecting to retire in late 2018 and looks forward to new and exciting non-work-related things.

Naomi Shields shared that she is “...beginning over! Amazing at almost 60! I’ve been in Wichita since 1994. Tremendous reputation and good friends made in residency while in the Air Force in San Antonio. My adopted parents now have some health issues, so the plan is to go back to Texas in June 2018 and join San Antonio Orthopaedic Specialists. There are a few mission trips during my transition; Costa Rica with Health Volunteers Overseas in February, then Haiti and Vietnam in May. I’m teaching a couple of Clinician Patient Communication workshops as well. Oh, and I hate moving and the boxes!”

Don Maynard (B.S. ’82, M.S. ’88) is still working for the Johnson Co. in Montpelier, Vt., after 30 years. Don’s work is focused primarily on cleaning up hazardous waste, these days in the National Parks (Anacostia River, D.C.; NYC landfill), and also public water supply development and dam engineering. He’s married to RPI engineer Parks (Anacostia River, D.C.; NYC landfills), and has one grandchild.

Lou Alongi noted that he designed a very low-tech drip irrigation system that’s “user-friendly” for senior citizens. The system is very green because it uses gallons of water per hour and not per minute. Lou also casually mentioned that he was—ahem—a bit “seasoned” when he graduated and is currently 88!

Diane Ozovik Howard retired in 2016 after 34 years in industry. She started at IBM as a computer engineer in Endicott, N.Y. Eventually she transferred to IBM’s Federal Systems Division in 1992 and worked the remainder of her career in the defense industry with roles of increasing responsibility for IBM, Lockheed Martin, Thules, and Northrop Grumman. She retired from Northrop Grumman as VP, operations—Cyber Division. Upon retirement she made a quick retreat from the Washington, D.C., area with her husband, Don (Col. (R) U.S. Army, and also a retired Lockheed Martin executive) to Sarasota, Fl., where they are both enjoying the sunshine along with many visitors escaping the winter cold from the North. Diane continues to volunteer for RPI as chair for the Annual Fund Volunteer Leadership Council and enjoys her frequent visits to campus—“RPI is amazing!!!” Diane also stated that “...our 35th Reunion weekend was a lot of fun last fall, although sparsely attended from the Class of ’82! (Our 40th will be just around the corner—hope we can get more of our class to campus)”

Stephen Mohr moved into the Applied Research group at OSIsoft. Stephen shares that his “...son Matthew finished his RPI degrees in May. By coincidence, his master’s project and some of my research are in the same area of graph theory. Matthew likes to point out that he got better grades than me!”

Ernest Grey retired as a lieutenant colonel in the U.S. Army National Guard, after decades navigating C-130s to Earth’s polar regions between their respective brutal winters.

William “Bill” Meaney was appointed to the board of directors of State Street Corp. Bill is the president and chief executive officer of Iron Mountain Inc., a global provider of storage and information management services.

Gordon Davidson was hired as the executive director of the Mount Washington Community Development Corp. in Pittsburgh, Pa. His responsibilities include implementing a new strategic plan, developing new programs and plans for community needs, developing multiple funding strategies, and developing strong communications with community members and stakeholders.

George Lukacs Jr. reported that “I find myself river running, swimming, eart-golfin’, and deep powder snowmobiling a whole lot more than back-country skiing in Utah’s Wasatch Mountains between entrepreneurial ventures these arthritic days.” On a somber note: George Lukacs let us know that Ed Carey III passed away unexpectedly in February “...doing what he loved most, alpine skiing!” Also, Rob Peterson shared that Lisa, his wife of 32 years, passed away after a long battle with cancer.

Mark Begor ’83—1983—

Mark Begor was named CEO at Equifax Inc. Mark spent 35 years at General Electric serving in a variety of roles leading multibillion-dollar business units of the company, including president and CEO of GE Energy Management from 2014 to 2016, president and CEO of GE Capital Real Estate from 2011 to 2014, and president and CEO of GE Capital Retail Finance (Sychnology Financial) from 2002 to 2011. Most recently, Mark was a managing director at Warburg Pincus.

Materials engineer turned comedian (yes, you read that right) Eric McMahon was back in Troy this past year to perform at the Troy Savings Bank Music Hall during the New Year’s Eve celebrations. Eric, now residing in central New Jersey, has been featured on ESPN and NBC. As he told the Troy Record, “It’s always good to come back to Troy and see how much the area has changed. Even though I’ve been gone more than a few years now, I’m in the area every year at least either to perform or to ski or both. Troy also helps me find new material—it’s got a never-ending supply. The city seems to have had some highs and lows, and I’m happy to see that it’s currently on one of the highs.”

Don Hubicki ’83, hubicki.don@gmail.com

—1984—

35th Reunion: Fall 2019 I encourage everyone to send in their updates as I have not received any recently! I know there is plenty going on; it is the time in our lives for exciting changes! Instead, you are left to read about my RPI endeavors because I have nothing else to report.

Kevin and I had a delightful dinner and evening with Kaitlyn Loumbury ’15 who was the southern representative from the Alumni Office.

I had lunch in Berkeley, Calif., with lab partner Mark Mitchell. It was great to catch up on 34 years of “life.” Mark takes exceptional pictures of birds/animals and posts them on Instagram. He still is a consultant for pharmaceutical companies in “trouble.”

I also enjoyed two weeks in the small town of Schleidorf, Germany, where roommates Chrissy Krempel lives. We hiked daily in the mild spring weather thanks to the foehns (look that one up). Chrissy is changing from project manager to marketing manager for EOS GmbH, a 3D printing company. She is a great host if you get to the area.

I’ve been emailing with Gary Rapp. He has quite the RPI legacy and his son Kent, currently attending, is in Germany. Kent was selected for the Congress-Bundestag Youth Exchange for Young Professionals. The program provides 75 American and German students between the ages of 18 and 24 the opportunity to spend one year in each other’s countries, studying, interning, and living with hosts on a cultural immersion program.

The opportunities available to students today are truly amazing. My son Andrew will be studying abroad this fall in Copenhagen; if we have any
alumni who are living over there, let me know. Lastly, I am a grandma, Darling Hannah Anne Updegrove was born in November. Ready or not, time to move on to the next phase of life! Please send some news! —Diane Updegrove ’84, kupdle@sbgglobal.net

—1985—

In March, Greg Travelstead (Geol.) was appointed executive director of the Sawtooth Society located in Hailey, Idaho. Formed in 1997, the nonprofit and nonpartisan Sawtooth Society is the only organization dedicated exclusively to protecting, preserving, and enhancing the 756,000-acre Sawtooth National Recreation Area (SNRA). Greg has served as the Sawtooth Society’s stewardship coordinator preserving open space in the scenic Sawtooth Valley and Stanley Basin; he has worked with policymakers and the public to address threats facing the SNRA. Additionally, he has consulted with the government, and private and nonprofit clients, on land and water planning issues while working for the U.S. Forest Service on trail maintenance. Good luck!

After retiring from the Air Force in 2016, Col. Hans Ritschard (Chem.) joined the staff at the Cheyenne Regional Medical Center where he is now the director of performance improvement. He leads a variety of initiatives that ensure a culture of continuous improvement, and facilitates projects that increase efficiency and promote the highest quality of health care. In the greater community, he has served on the Cheyenne Frontier Days General Committee as the Military Chair, and he currently serves as a board member of the Greater Cheyenne Chamber of Commerce.

Col. Ritschard also has M.A. and Ph.D. degrees from Fuller Theological Seminary, two master’s degrees from Air University, a postdoctoral fellowship from Harvard Medical School, and a public policy fellowship at the Rand Corporation.

During his Air Force career, he served as a child psychologist at Wiesbaden Air Force Base in Germany and RAF Lakenheath, England. He has also commanded Medical Operations and Ancillary Services Squadrons in both Idaho and Ohio and has served as the director of the Department of Defense Psychological Health Strategic Operations for the Deputy Assistant Secretary of Defense at the Pentagon.

Biogen, in Cambridge, Mass., has appointed Mark Hernon (Ind. & Mgmt Eng.) as senior vice president and chief information officer. Biogen discovers, develops, and delivers worldwide innovative therapies for people living with serious neurological and neurogenerative diseases. In his new role, Hernon leads the global information technology organization and is responsible for accelerating and supporting Biogen’s operations through delivery of innovative technology tools and systems.

In prior years with Takeda Pharmaceuticals, Hernon served as regional CIO for the Americas and global head of R&D, QA, and HR systems as well as VP of operations for the Cambridge site. He was most recently the global head of R&D Site Strategy and Operations, where he led the global transformation of Takeda’s R&D footprint. Hernon holds a B.S. & M.S. in industrial and management engineering and an MBA from the Lally School of Management.

Alumni often ask me about the difference between the RAA Endowment and the RAA Scholarship; let me clarify our philanthropic initiatives. When you give to the RAA Scholarship Fund, your dollars go directly to assist student scholarship. In 2016, the RAA launched a student scholarship initiative that directly assists today’s students. This endowed fund is used to financially support scholarships for worthy undergraduates. When you give to this fund, you help students succeed at Rensselaer. When you give to the RAA Endowment, your dollars fund programs that benefit our current and future alumni. It sponsors an annual award to a rising junior or senior who is a leading member of the Red & White Student Organization, and it subsidizes the annual Freshman BBQ to instill in them the importance and advantage of the connection that unites all alumni. To promote alumni career advancement, the RAA Endowment sponsors a staff position in the Office of Alumni Relations whose duties include providing career and professional development services (RAA Connect) in a world of fast-changing technologies.

Got news? Send it here. —Patricia DeLauri ’85; pdelauri@sbra.com

—1986—

The Albany Times Union recently published an article about women entrepreneurs overcoming the hurdles of starting a business, featuring RPI grad Lynn Momrow-Zielinski (B.S. Chem.Eng., M.S. Mgmt.Eng.), who co-founded Extreme Molding, a silicone and plastic injection molding manufacturing company in Watervliet, N.Y., in 2002. The business partners leveraged their savings to purchase their first injection molding machines. Their products range from dog collar buckles to pacifiers, following strict health and safety guidelines for multiple baby products. Sales have reached at least $5 million annually and sometimes twice that. Lynn’s philosophy, “when times get tough, go bowling,” has served her well.

Dr. Alec Gallimore (B.S. Aero.Eng.) has been named to the ANSYS Board of Directors. ANSYS is the global leader in Pervasive Engineering Simulation software, enabling imaginative and innovative product design across a myriad of aerospace and consumer products. Dr. Gallimore holds several posts at the University of Michigan, including professor of aerospace engineering. He is director of the NASA-funded Michigan Space Grant Consortium, co-director of the Plasma Dynamics and Electric Propulsion Lab, and has served on the U.S. Air Force Scientific Advisory Board. Alec also holds an M.S. and a Ph.D. in aerospace engineering from Princeton University.

Although he did not compete at RPI, Ed Neighbour (B.Arch, B.S. Bldg.Sci.) has become an avid long-distance runner. He is president of the Morris County Striders after fulfilling two terms as president of New Jersey’s USATF and as division chair of the Long Distance Running Committee. He has competed in several New York City marathons, as well as Philadelphia, Rome, Madrid, Buenos Aires, and the Big Sur in California.

Christopher Fontes, staff scientist at Los Alamos National Laboratory, has been elected a fellow of the American Physical Society for his pioneering contributions to a broad range of physics problems including nuclear fusion and astrophysics. His most recent work includes trying to understand the light that is emitted from neutron star mergers, in connection with the recent gravitational wave observation announced in August 2017 and the
George Pastrana (BME) has been named the new president and chief operating officer for Dogfish Head Craft Brewery. He transitions there after working at ACH Food Companies for six years as the chief marketing officer and vice president of marketing and innovation.  

Raffi Garabedian (EE) has been named an outside director of Covalent Metrology to assist in its mission to create an enabling and democratizing one-stop-shop for rapid, diverse, high-quality metrology and characterization data and advice. He currently works as chief technology officer of First Solar Inc. and has held that position since May 2012. He joined First Solar in 2008 as director of disruptive technologies and served as its vice president of Advanced Technologies since 2010. Previously, he had founded Touchdown Technologies Inc. and served as its CEO. He worked in the semiconductor and microelectromechanical systems (MEMS) industries for over 15 years developing new products ranging from automotive sensors to telecommunications switching systems. He holds 20 issued patents.  

Mike Peralta (EnvE) has been named executive vice president, Central Sales Operations, for Criteo, S.A., where he will oversee the central sales team to drive forward revenue operations and demand for Criteo’s newly launched products, including Criteo Audience Match and Criteo Customer Acquisition. Prior to this position, Peralta was president and CEO of AudienceScience. Previously he held numerous executive positions in the U.S., Europe, and Asia, including roles as the CRO of MediaMath, COO of Magnetic, CRO of Tumri, and an EVP at AOL and Advertising.com.  

Gary Borda, who earned multiple master’s degrees from RPI, recently retired after a 35-year career at Eversource Energy/Northeast Utilities. During his tenure there, he held positions of increasing authority and responsibility in engineering, account management, conservation and load management, and customer and asset management. Since his retirement, he joined his family’s energy business. He has also spent time visiting his paternal family roots in Italy, and planned to visit maternal roots in Ireland during summer 2018. —Grace Vitagliano Roth ’88; grace@abcmworldvacations.com  

Martin Grohman (Chem.E.) was featured in the March 25 edition of the Portland Herald Press. It’s an interesting read and it’s not the only time he’s been written about—he’s a state representative from Biddeford, Maine. He is the director of sustainability for GAF, one of the country’s biggest roofing companies, and he has championed recycling the asphalt shingles used in roofing jobs into paving materials.  

Dr. Judy Cezaux, ’89 Ph.D., was selected as the next dean of the Arkansas Tech University College of Engineering and Applied Science. At the time of her appointment, she was chair of biomedical engineering at Western New England University.  

David McIntyre, M.S. ’89, was one of the 2018 Silver Beaver Award recipients awarded by the Boy Scouts of America. Recipients are recognized for their distinguished and noteworthy service of exceptional character to youth by Scout leaders.  

Gregory Allen (Chem.E.), a member of the Department of Defense, was recently profiled by the Army Chemical Materials Activity group where he works. His interesting background shows how he was able to pursue his dreams and break stereotypes.  

Congratulations to everyone! Find us on Facebook—“RPI Class of 1989”—Joseph Hom ’89; josephhom@flash.net  

—1990—  

Greetings from Houston! Allow me to play the averages here and wish many of you a happy 50th birthday this year!  

Bianca Mancinelli (B.S. Math) shared some fantastic news: their son Dante will attend RPI beginning this fall! Dante joins Bianca, Paul ’90 (B.S., Phys.), and sister Chiara (May, 2019) in what is becoming an RPI family. With their youngest son entering high school this fall, the adoption of two kittens, and Paul’s 50th birthday, 2018 is shaping up to be an amazing year.  

Rob Mueller (B.S. ECSC), also a “Nifty 50” this year, has been active. After crossing skysdiving off his bucket list in 2016, he and wife Sharon had a great time scuba diving during Pirates Week in Grand Cayman last fall. Rob and Sharon spend about one month each winter working remotely from Florida, and are starting to plan a Disney vacation with their three grandparents over Halloween. All that activity and his passion for hockey finally caught up to Rob this spring, when he elected to have hip replacement surgery. Not one to sit for long, Rob was up and about in no time and dancing again only three weeks after his surgery.  

Here in Katy, last December Dianne and I enjoyed a rare touch of winter in the form of 1.5 inches of snow. We followed that up with a spring break trip to Breckenridge, where we decided to hang up the skis and join our son on the snowboard. We enjoyed having both kids home from university at various times this summer. If you find yourself in the Houston area, please be sure to let us know! —Rob Sherman ’90; robsherman@hotmail.com  

—1991—  

Hello, Class of 1991. Been awhile since I wrote a column, but a good batch of articles in the email bag and from the Institute this time. Lately, I’ve been pretty busy still working as a senior HVAC engineer at New York State Office of General Services in Albany, and my wife Jenny and I are busy with our two sons, Teddy (born in 2015) and Josh (born September 2017). Now on to all of you:  

Beth Sienel was appointed by the Nuclear Regulatory Commission as the new resident inspector for the Nine Mile Point nuclear power plant in Scriba, NY. Beth joined the NRC in 1990, and has previously been a reactor engineer in the Division of Reactor Safety and a resident inspector at the Pilgrim, Millstone, Vermont Yankee, and James Fitzpatrick stations.  

Joe Lamisera rejoined Eigen X as principal owner. In 2012, he co-founded Eigen X, a CRM, analytics, and agile technology company. Previously, Joe was president and CEO of Anexinet.  

Darold Londo, MBA ’91, is the new CEO of Lac du Flambeau Business Development Corp. and has 25 years of management and CEO experience. He has a military background, having graduated from West Point prior to attending RPI, and has also attained a JD from the University of Wisconsin Law School in Madison, Wis.  

Philip Kahl writes: “After graduation from RPI, I went on to get an MSME from UC Davis while working on robotic solutions for highway repair for the California Department of Transportation. After UC Davis, I was commissioned in the U.S. Navy and did a tour aboard the USS Rentz (FFG-46) including a deployment that took me all over Southeast Asia. I left the Navy in 1996 and spent many years working as an IT consultant, climbing, skiing,
and traveling. I eventually settled down in the Puget Sound region, where I live in a house among the trees with my wife, Andrea, our three children, and several cats. I currently work as a software engineer in the local tech industry, and can be found on LinkedIn.”

Rebecca Whitemore Kreider writes: “I recently earned my doctorate from New Jersey City University in educational technology leadership. In 1991, I graduated from RPI with a B.S. in science & technology studies and in 2001 from Stevens Institute of Technology with an M.S. in information management. Currently I am working on a makerspace/STEM lab build-out at Mount Olive Middle School in Mount Olive, NJ.”

Funny story is that we discovered through our discussion that we had worked together in an EMAD CAD project sophomore year and I had photo evidence of that in my scrapbook.

Even funnier is that I ran into Charles Havasy last year at my milestone high school reunion in New York City, because his wife, Meredith, was 10 years behind me and in a different milestone class! He sent a photo (see page 58) from his USAF retirement ceremony last year that includes John Marsh ’90, Steve Mare, Melissa Wong ’92, Charles, and Ed Bellem ’89. Charles now works for The MITRE Corp. in McLean, Va., conducting defense-related studies. John is working at the F-35 Program Office, Steve is working for the Northrop Grumman Corp., Melissa is at the Applied Physics Lab, and Ed is at the Defense Intelligence Agency. All live in the greater Washington, D.C., area.

Charles writes: “I have been enjoying my time at The MITRE Corporation—I’m actually spending more time at the Pentagon now than when I was in uniform. It has been an easy transition as I am still doing defense-related projects.”

Remember, you never know who from RPI you’ll run into in life and where and when! Until next time, cheers, and keep those updates coming! —Richard Vehlow ’91; rev1969@gmail.com

—1992—

James Petrosky was re-appointed Air Force Technical Application Center Endowed Term Chair for Nuclear Materials. A professor of nuclear engineering and the M.S. curriculum chair in the Air Force Institute of Technology’s Dept. of Engineering Physics, he has expertise in radiation effects on electronic devices, EMP, experimental design, radiation detection, and nuclear weapon effects.

Lawrence Jordan, president and co-owner of Wi-Tronix, was featured in a January 2018 article in Crain’s Chicago Business. The article discusses Violet, the Wi-Tronix product being field-tested by seven major U.S. freight lines to improve safety and efficiency.

Coots, a leading industrial thread manufacturer, has appointed Keith Dupont as president of performance materials. Keith is responsible for delivering the overall strategy for performance materials, including operational and commercial activities, and meeting sales and organic growth targets, as well as developing talent. —John Trammell ’92; johntrammell@gmail.com

—1993—

Keisuke Hoashi was invited by Dean Mary Simoni of RPI’s School of Humanities, Arts, and Social Sciences to speak at the HASS commencement on May 18, 2018. He has an update of film and TV roles that have been booked recently, and aired in the last year or so: Late & Order True Crime (NBC), Stunt-Jp (Crackle Network), Will & Grace (NBC), Adam Ruins Everything (animated series), Most Likely to … (ABC), Ghosts of Tsushima (Sony PlayStation), The Detour (TBS), Big Little Lies (HBO), and Brokeman (IFC), a comedy series starring Hank Azaria.

iPartnerMedia was named Start Up of the Year by the Lee County (Fla.) Economic Development and Horizon Council at the annual Industry Appreciation Awards. Randy Mitchelson (vice president, marketing and sales) joined iPM founders Mark Pace and Albert Arguelles to accept the award, which honors local business and nonprofit organizations.

Express Scripts Holding Co. announced that Mike Cirillo has been named president of myMatrixx, an Express Scripts company. Mike has more than 25 years of leadership experience in worker’s compensation, claims management, and pharmacy. Most recently, he served as president of Specialty Solutions Rx, where he helped deliver cost-reduction solutions to national accounts and payers by enabling better patient outcomes.

Kevin Hunt, M.S. ’93, Ph.D. ’03, was presented Goldey-Beacom College’s Annual Excellence in Teaching Award. He is assistant professor of English and humanities and chair of the Arts and Sciences Department. His students say he takes the time to get to know each one of them and finds ways to keep them focused. Known for developing new programs, he was an original architect of the college’s academic boot camp program taught each summer for potential students. —Ileana Gonzalez ’93; igonzalez2@ualr.edu

25th Reunion: Fall 2019
Tiffini Eugene Jones, M.S. ’94, a sustainability consultant and doctoral candidate at Prescott College, has been selected to be in a cohort of 80 female scientists participating in a yearlong global leadership building project. “Mother Nature Needs Her Daughters” is the sentiment behind the Homeward Bound 2019 Project. Based in Australia, the HB2019 program culminates in a two-week expedition to Antarctica studying climate change science with scientific innovators and leaders in the field. Tiffini is part of a global collaboration with a goal of having 1,000 women in STEM to inform and shape policy and decision-making in support of climate change issues.

Edward Gumina was named president and CEO of Precision Roll Grinders, which specializes in high-tolerance regrinding and repairs for industrial cylinders used in various industries, including textiles, flooring, film, and chocolate. —Bill Wheeler ’94; William_Wheeler@yahoo.com

—1995—

Please keep the updates coming. Kaan Aslansan was named managing director with the corporate transformation services practice at the Alvarez & Marsal firm. Tim Fiore was appointed chief procurement officer at Ryder Systems Inc. Bill Garabiti was appointed regional director, business development, of Ameresco’s U.S. East Region Sales Organization. Douglas Hembd was selected for the Navy Meritorious Service Award at Naval Undersea Warfare Center Division Newport for his exceptional record of process improvement and workforce development. LTC Joshua Green was the keynote speaker at the Foxboro High School annual Veteran’s Day service. —Michael Van Poots ’95; Michael@Vanpoots.com

—1996—

In this issue we turn to a few updates from fellow Lambda Chi Alpha brothers.

Michael Wojcik has moved from Logan, Utah, to Kirtland Air Force Base in Albuquerque, N.M., to support the Air Force Research Laboratory Space Vehicles Directorate as a systems engineer. Mike confirms that the food in New Mexico is satisfyingly more spicy.

Steve Lee came out to visit over the last weekend of February and join me for his first-ever American Birkebeiner ski race. The point-to-point ski race travels over the hills of northwest Wisconsin for 50 winding kilometers, all the way from Cable to Hayward. There are almost 1,400 meters of total climb in the race, so it’s a major accomplishment.

Proving that you can find RPI just about anywhere, Steve was wearing an RPI cycling jacket while we did a little recovery skiing the day after the race when a complete stranger skied up to us to let us know he graduated from RPI in the early ’90s and was now working as an engineer in Milwaukee. It was a great weekend of skiing and catching up, capped off with a get-together with fellow Twin Cities-based brothers Piet Hansel ’91 and Mark Schlichenmeyer at a Saint Paul’s Flat Earth Brewing Co.

Here’s to hoping everyone had a safe and enjoyable summer. Keep the updates coming! —Hank Carbone ’96; hcarbone@hotmail.com

—1997—

Our intrepid reporters have discovered that Scott McNeal has been appointed vice president of information technology for Terex Aerial Work Platforms (AWP), the business unit of Terex Corp. that includes the Genie brand. In this role, he is responsible for all Terex AWP IT tactical planning and operational execution, making IT a strategic
asset to drive improved customer experiences through faster innovation and improved business processes. He will also drive the transformation of IT into an enterprise-enabling function. He is based in Redmond, Wash.

I was able to catch up with a few RPIers at a fundraiser in April, too. Neha Biggs was in town from Chicago to support Camp Kesem’s Magic Ball in Boston (she’s on the national board), where they raise funds to support the operations of Camp Kesem, an organization that supports children through and beyond their parent’s cancer via awesome summer camps run by the most enthusiastic undergrads you’ll ever meet. Alicia (Sopko) Kabir is Camp Kesem’s COO and she and Taric are also on the Boston board of the organization.

My husband, Brian Fitzpatrick, and I were there to support them, along with fellow Class of ’97 classmate Jason Federspiel. Jason is director of technology at AMAG Pharmaceuticals; he and his wife, Rebecca, have two kids, Elly and Tad, and are neighbors to Kyle and Pamela Hollasch up in New Hampshire.

That’s it for now! —Kristen Fitzpatrick ’97; kf Fitzpatrick@mba2003.hbs.edu

—1998—

Allegra da Silva joined the engineering and construction firm Brown and Caldwell as regional water reuse leader. She was previously water reuse practice leader, Rocky Mountain region, for Stantec. She earned her B.S. in chemical engineering at Rensselaer, and M.S. and Ph.D. in environmental engineering at Yale. —Mike Johnson ’98; mj johnson@alum.rpi.edu

—1999—

20th Reunion: Fall 2019 Nava Cretu-Kessel and her husband, Barnet, welcomed their third child, Joel “Joey” Reuven, on December 24. Their other kids are 6 years and 4 years old, and they live in Newton, Mass. Nava recently celebrated her five-year anniversary with TripAdvisor, where she oversees business intelligence for TripAdvisor Flights and ScoriGuru. She was really looking forward to being on the RPI campus in early May for an advisory board meeting of RPI’s M.S. in Business Analytics program. —Erica Kulesza ’99; erica.kulesza@yahoo.com

—2000—

Jeffrey Langer joined the law firm Stites & Harbison, PLLC, as a partner in the Intellectual Property & Technology Service Group. He was previously managing partner for an IP boutique firm in its Alexandria, Va., and China offices and is proficient in Mandarin Chinese. He also spent four years in Switzerland with Philip Morris International as in-house sr. counsel. Jeff earned B.S., M.S., and Ph.D.

Growing up watching space shuttle launches on TV, Deb Ocejo ’95 was bitten by the space bug. At Rensselaer, she was part of a team that designed an unmanned helicopter. After pursuing graduate studies at Georgia Tech, she worked for Boeing, Pratt & Whitney, and then Orbital, where she worked on the Pegasus Rocket. That sealed her destiny as a rocket scientist. Today, Ocejo is chief engineer for the Common Boost State (CBS) rocket motors at Orbital ATK.

degrees in electrical engineering at Rensselaer.

Chris Latreille was promoted to principal in the Finger Lakes office of Ryan Biggs Clark Davis Engineering & Surveying. He is currently designing the clinical lab addition on Bailey Road for the University of Rochester. —Bridget Olson ’00; Bridget@alum.rpi.edu

—2001—

Bill Fioravanti has been named director of economic development for Orange County, N.Y. He served most recently as the Orange County Partnership’s director of business attraction and is a former associate executive director of the YMCA of Middletown, and executive director of the Boys & Girls Clubs of Orange and Sullivan Counties. —Mike Cooke ’01; themikecooke@yahoo.com

Jennifer Keyes was selected as NASA Langley Research Center’s Executive Officer (XO) in April. In this role she serves the deputy center director and associate center director in the implementation of centerwide and institutional strategies. She writes: “Also new for Dennis ’03 and me is that in the fall of 2017 we purchased an oceanfront condo in Kill Devil Hills, N.C., on the Outer Banks. It is available for rent and if you are ever looking for a place to escape: www.firstflightrentals.com/booking/flg.308-keys-to-serenity.10.” —Elizabeth Trawinski Aitken ’02; ejello@alum.rpi.edu

—2002—

Allison Shannon, senior associate at SWBR, received the 2018 Rochester chapter of the Construction Specifications Institute Starlight Award. A project manager in SWBR’s education studio, she manages projects for K-12 districts in New York.

—2003—

—Ed DerGurahan ’03; dergue@alum.rpi.edu

—2004—

15th Reunion: Fall 2019 Nathan Cook (Comp.Sc) recently received his MD degree from Wayne State University in Detroit, Mich. Nathan has relocated to Mt. Lebanon, Pa., for his pathology residency at the Pittsburgh Medical Center with an intended focus on genomics. Between RPI and medical school, Nathan worked for IBM doing software performance testing, completed a post-baccalaureate pre-med program at Harvard University, worked in a neuroscience lab at Yale University, and was a credited contributor to a number of published research papers.

Richard Off was promoted to project coordinator at Hoffmann Architects, where he has provided architectural support for projects at New York City’s historic First Presbyterian Church, Washington Irving and Countryside Library, and the 1385 Broadway “Bridal Building.” He earned his bachelor of architecture degree at Rensselaer and a master of architecture and urban design at Columbia.

Matthew House, M.S. ’04, was appointed vice president of homeland security and national security at eGlobalTech, an IT solutions, cybersecurity, and management consulting firm in Arlington, Va.

Heather Gozdiskowski was named assistant project manager at Grand Canyon Development Partners, a Las Vegas-based construction and real estate development and construction management company. A registered architect, she previously worked in project management with Shamwut Design and Construction, executing multimillion-dollar projects in the hospitality industry. —Send news to alumnimag@rpi.edu

—2005—

Buongiorno, Class of ’05! I am writing from sunny Sicily to reconnect us all from around the world. If you have updates to share...life goals you are working on...we want to hear them. Please email me @ katiekavfus@gmail.com!

Jonah Brown, a U.S. Air Force Major, has flown F-15 jets since 2007 and served two three-year tours at Kadena Air Base in Okinawa, Japan, as well as a solo six-month mission in 2013. In June he made a low-level flyover in an F-15 fighter jet in his hometown, Catskill, N.Y., on his way to attend an air show in Niagara Falls. The flyover was dedicated to all those who serve in the military and who inspired him to follow in their footsteps, he told the online newspaper Hudson Valley 360.

Maj. Alexander Turner was inducted into the Chelmsford High School Alumni Association Hall of Fame. A U.S. Air Force major, he served tours of duty in Asia, Europe, and the Middle East. While deployed during Operation Odyssey Dawn in 2011, he flew what is believed to be the longest Viper combat mission on record at 13-1/2 hours.
He spent two years as lead solo pilot with the elite Thunderbirds Air Demonstration Squadron.

Alyssa Kent joined the board of the Tiny Miracles Foundation in January. She is co-chair of the NICU Family Advisory Council at Yale and was formerly the chair of the CT March of Dimes Family Teams. In 2016 she was named CT AIA Emerging Architect of the year. She lives in Fairfield, Conn., with her husband, Heath, and three children. —Katie Karaffa ’05, katiekaraffa@gmail.com

—2006—

Lina Dureza, who earned an M.S. in management at Rensselaer, became the administrator at Hughes Health & Rehabilitation in West Hartford, Conn. She was previously Hughes’ director of nursing. —Meghan Kate ’06; rpi06news@gmail.com

—2007—

Jesus “Laz” Montano, MBA ’07, was named head of enterprise information risk management (EIRM) and chief information security officer at MassMutual. He has nearly 30 years of technology and cybersecurity experience. —Alex Salinsky ’07; alexsalinsky@gmail.com

—2008—

Caitrin (Donnelly) Facini and her husband, Adrian, celebrated the birth of their daughter, Louisa, in February. Congratulations to you and your family, and welcome to parenthood, Caitrin!

On July 3, former women’s ice hockey captain Kelly Barbera married Darius Felli in the beautiful mountains of Canmore, Alberta. In attendance were former women’s ice hockey players Brooke (Thompson) Warren, who served as matron of honor, Ellen McNamara, who served as maid of honor, Sarah (Daniel) Danielsmith ’07, and Melissa Boik ’09. Blake Huovic was also in attendance to help celebrate with his former roommates. Congratulations, Kelly! Great to see RPI friendships that last a lifetime.

Please keep your updates coming and make sure to like our Facebook page at facebook.com/RPIClassOf2008, follow us on Snapchat, and join us in our weekly class reunion using your VR headset. —Trent Gillaspie ’08; trent@alum.rpi.edu

—2009—

10th Reunion: Fall 2019 Kendra Krueger founded 4Love + Science, a workshop and educational program designed to arm students with the tools gleaned from science, sustainability, social justice, and art to develop new modes of thinking and existing in a complex world. Trained in facilitation, permaculture, anti-oppression, and mindfulness meditation, she facilitates trainings, workshops, and research and learning programs that cover a wide variety of disciplines. She was featured recently in a publication by Lenovo, because the ‘ThinkPad has been an integral tool in her work.

The Class of 2009 is now looking for a volunteer to serve as class correspondent. If you are interested in writing the class notes column, contact alum. mag@rpi.edu.

—2010—

Hello, Class of 2010! I hope all is well. Can you believe it has been eight years since we graduated? Things have been a little quiet here on the magazine front—my apologies for that. Over the past 12 months, I got married to Chris Moukler, we moved to Dubai for my job, and recently moved back to Cincinnati—lots of fun adventures around the world! While in Dubai, my husband and I hosted the first alumni event in Dubai with President Jackson. It was a wonderful gathering overlooking the Burj Al Arab with about 15 alumni and parents of current students. We would love to hear more about your adventures and life updates—please make sure to send them my way!

A huge congratulations to our fellow alum, Army Captain Christopher Smith, who was selected as the commander for Bravo Company, 522nd Military Intelligence Battalion in Wiesbaden, Germany. His company is responsible for providing all-source intelligence support to United States Army Africa. Before his selection, he was deployed in support of France’s Task Force Barkhane to counter violent extremist organizations in the Sahel region of Africa. Looking forward to hearing your stories! —Meghan Lenihan ’10; lenihan@alum.rpi.edu

—2011—

Congratulations to JP Trasatti, who got engaged to Steven Sankel last December 2 on the top of Buck Mountain in Lake George, NY. They currently both work in the Albany area and recently moved into a brand-new home in Saratoga County. Wishing all the best for two great people!

The New York engineering firm Barton & Loguidice announced in February that Jeanne Rice joined their Albany office as a project engineer in the Facilities Group. In her previous role, she worked as a structural design engineer on residential, commercial, and utility structures. Darcie Cook became the new science content developer for the Cape Fear Museum of History and Science this past spring. After graduating from RPI, Darcie received her Ph.D. in immunology from Emory University and was a historic collections associate at the CDC Museum.

In April, Andrew Cook hosted a webinar on “Threat Hunting Versus Compromise Assessments: What’s the Difference?” to help IT and information security professionals better understand and address the fact that malicious hackers and cybercriminals are always refining their techniques to avoid security tools and controls. Andrew is currently a manager at Delta Risk, a cybersecurity consulting firm, and was a prior active duty Air Force Officer and spearheaded cybersecurity teams that discovered and countered advanced persistent threats to critical national assets.

And in May, Derek Foster was profiled as part of the Albany Business Review’s 40 Under 40 class. He is president and CEO of Daigle Cleaning Systems

From left, Joey, Monica, Jonnie, Michael, Lou, and Anna Leszczynski, and Mark Thibodeau.

Connecticut Manufacturer Is a Rensselaer Family Affair

The Leszczynskis decided as a family to launch K4 Machining, a new precision parts manufacturer in Waterbury, Connecticut, with the goal of fostering manufacturing in the state by engaging young professionals in the business. Parents Lou and Anna Leszczynski, who each had 30-plus years of experience in manufacturing, were looking for a new challenge that would get millennials excited about the field.

To begin, they needed look no further than their dinner table. All four of their children are involved, including three with Rensselaer ties: Michael Leszczynski ’16 earned his B.S. in industrial and systems engineering at Rensselaer; and Jonnie Leszczynski ’21 is currently a mechanical engineering student. Joey, still in high school, also plans to join the company.

K4 Machining specializes in precision machining of metals and plastics utilizing CNC (computer numerical control) milling, turning, and mill/tum multitasking capabilities to produce simple and complex parts by developing innovative manufacturing solutions.
Inc. and is looking to grow the business through franchising.

If you have any notes you’d like me to share, please remember to send them—we’re far along in that post-graduation period of “newly management,” “newly married,” and “newly parents,” and many of us would like to hear what you’ve been up to! —Michael Zwack ’11; zwack@alum.rpi.edu

—2012—

Congratulations to Nick Krutz, who was recently awarded the Young Engineer Award from the avation division at General Electric. Nick was recognized for his expertise in the area of materials process modeling. He is currently working toward his Ph.D. at Ohio State University.

Please continue to share 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—

This year’s reunion—a milestone for our class—coincides with continued, significant milestones for our classmates. In addition to the marriages following engagements from past updates—I hear your wedding bells, Paul and Veronique Parker-Malek!—more than a couple of new couples crossed my radar this year.

You won’t find Mary Ciufò on Facebook anymore, because she’s Mary Arntz now. Mary and Eric Arntzen ’14 met on campus, started dating in 2013, and married in April 2017. Trading places with one of her own bridesmaids, Mary will be in the wedding of Nicole Christenson—shout out to my co-adviser from Student Orientation 2010!—when Nicole marries Jeffrey Lowery this August.

Last September, Tyler Campbell and Hannah Narcross married in Montreal. The freshman sweethearts met while painting a fence during freshman orientation. Today, they live in Atlanta where Tyler develops software and Hannah is pursuing her Ph.D. in chemical engineering at Georgia Tech. May there be as many anniversaries for these couples as we have class reunions.

I spoke to Hannah’s freshman roommate, as well. Alison Blair Reid has returned to the books and has added fabric bolts to her library. She studies fashion marketing at Parsons School of Design in the city. Upon graduation, she intends to return to her hometown of Baltimore and open her own boutique.

Following her undergrad and grad work in slopes, dams, foundations, soil, and sub-surface investigations—a gamut of expertise to my novice mind—Elizbeth Wroe earned a geotechnical engineering position with Gomez and Sullivan Engineers in Utica. We wish you stability in the job, Elizabeth.

To commence the commencement announcements and blow this update out of the water: Christina Provenza has graduated from West Virginia University School of Medicine and is now in her residency for general surgery at the University of Connecticut. We’re thankful for her and for our many classmates who tirelessly pursue careers that prioritize health care.

In the close-to-home category, I caught up with my post-grad roommate Lindsay Poirier when she attended a research conference in Berlin earlier this year. Lindsay has defended her thesis, earning her Ph.D. in science and technology studies at our alma mater. Continue your applause to congratulating her on accepting a tenure-track faculty position at the University of California at Davis. We’ve only seen the beginning of Lindsay’s impact.

Please—when I say “please,” it means I would be really grateful to not stalk the web for news—send updates! —Stephen Nock ’13; stephen.nock@gmail.com

—2014—

5th Reunion: Fall 2019 Elizabeth Plowman joined Phillips Lytle LLP as an associate in the firm’s Buffalo office. She earned her J.D. from William & Mary Law School and practices in the area of commercial litigation.

Bianca Wentzell was appointed assistant professor of biology at St. Thomas Aquinas College. She earned her Ph.D. at Rensselaer and conducted postdoctoral research at both Montclair State University and Kean University and specializes in wetland ecology and plant biology. —Thomas Thayer ’14; tthayer802@gmail.com

—2015—

The FAA’s Next Gen office, a nationwide program to modernize the national air transportation system, presented Jocelyn Rudsill with the 2017 Rising Star Award. —Sarah Spellane ’15; sarahspellan@gmail.com

—2016—

Greetings, RPI classmate! I hope these class notes find each and every one of you doing well and hopefully putting your positive mark on the world! We have many new and exciting stories to share from our classmates in this edition. Those of you who would like to share with us your success and accomplishment, please feel free to reach out to me at my email listed below.

First, we would like to extend our congratulations to our fellow classmate, Joshua Thomas, who was appointed to Barton & Loguidice’s (B&L) Environmental Group as an engineer. Joshua previously worked as a project manager at Casella Waste Systems. Great job, Joshua, and best of luck on your future success!

We would like to also highlight the huge success story of Alexa Gruschow who in March was announced as the National Women’s Hockey League’s Most Valuable Player! An RPI 2016 grad, Alexa studied biology, before going on to play for the newly developed NWHL. She led in scoring for the season with 22 points on nine goals, 13 assists, with 1.38 points per game. She plays for the Metropolitan Riveters, so if you’re ever in the Tri-State area, be sure to go out and cheer her on (don’t forget to pick up one of her jerseys, too).

Best to all the RPI 2016 grads. Goodbye, summer, and hello, fall. See you at Homecoming! —Maggie Murphy ’16; margaret.murphy1029@gmail.com

—2017—

Averi Chan, who started at the Chazen Companies as an intern in summer 2016, was recently named an assistant project engineer in the Land Development Group. —Conrad Moss; conrad.moss@gmail.com
Bernard Eichwald '42, chairman of B. Eichwald & Co., which provided electronic facilities for the UN, including its patented earpiece for simultaneous translations; May 2018.


Robert T. Barnes '44, propulsion engineer for Pratt & Whitney, GE, Bell Aircraft, and Raytheon, and WWII Army veteran; March 15, 2018.

Robert L. Calvin '46, retired senior systems analyst, Pratt & Whitney Aircraft Group, and U.S. Navy veteran; April 28, 2018.


Robert L. Calvin '46, retired senior systems analyst, Pratt & Whitney Aircraft Group, and U.S. Navy veteran; March 1, 2018.


Therese A. (Garry) Zeh '48, Navy civilian draftsman, NASA volunteer, HOA board leader, and active alumna; June 28, 2018.

Ralph D. Fisk '49, founder of Fisk Gas Service and Hartford Manufacturing, national LP gas board representative, and WWII Army veteran; May 17, 2018.


Herbert L. Kee '50, family physician and community leader in Chinatown, New York City, who treated all regardless of their means to pay; March 15, 2018.


Kenneth A. Frassa '52, retired after 35-year career in management positions with Mobil Oil Corp., and petroleum consultant; May 21, 2018.

John MacPhee '52, retired senior scientist and former VP, Baldwin Technology, with over 20 inventions in nuclear, industrial, robot, and graphic arts industries; Dec. 1, 2017.


Lee Harris Pomeroy '54, renowned founder of Lee Harris Pomeroy Architects, known for focus on adaptive reuse, and restoration of NYC subway stations; Feb. 19, 2018.

Douglas S. Barrie '55, retired president, international, Wm. Wrigley Jr. Co., following 28 years at Procter & Gamble; May 9, 2018.


Louis H. DuBois '56, former senior vice president, Ensorch Exploration, exploration manager at Mobil, consultant, youth hockey coach, and U.S. Navy veteran; April 7, 2018.

Paul A. Goldstein '56, MMG '66, civil engineer, NYS Office of General Services, specializing in water and waste management; Feb. 17, 2016.


Paul Nepf '56, retired manager, IBM Poughkeepsie, longtime church organist and choir director, and hospital volunteer; Feb. 10, 2018.

George M. Benson '57, engineer, bookseller, urban homesteader, harmonium player, and lover of music, peace, and justice; April 8, 2018.


Robert E. Schulz '59, retired president and CEO, LNP Corp., a global leader in engineering thermoplastic compounds; March 27, 2018.


Frank Manna '60, former CEO of electrical contractor Fischbach & Moore; June 4, 2018.

Robert H. White '61, retired project engineer, Pratt & Whitney, and scout troop chairman; Feb. 6, 2018.


Michael A. Skibo '66, retired director of computing and former flight test engineer, Boeing where he worked on airliners, military aircraft, and AWACS; March 3, 2018.


Anthony R. Kane '67, retired executive director, Federal Highway Administration, and director of engineering and technical services, AASHTO; May 15, 2018.

James M. Clapper '68, M.S. '70, retired president, Aladdin Temple, former professor, Wake Forest University, and dean; July 31, 2017.

Ralph J. Rascati '69, research scientist in virology, professor and dean of university college, Kennesaw State University, Feb. 3, 2018.

Jens A. Orndahl '70, retired senior mechanical engineer, Raytheon Company; March 28, 2018.

William “Ziggy” S. Bernfeld '72, Army ROTC, retired Army colonel, and retired certified public accountant; Feb. 26, 2018.

Nelson R. Corby Jr., M.E. '72, D.E. '76, research scientist at GE, awarded 50 patents for work in robotic vision and more; April 1, 2018.

John D. Enderle '75, M.E. '77, Ph.D. '80, professor emeritus, University of Connecticut, biomedical researcher, and fellow of many technical societies; April 2, 2018.

Jeffrey M. Turner '78, M.E. '79, senior technical staff member, IBM, where he achieved a level 5 patent plateau; April 18, 2018.

Gustavo G. Santelli '81, former president, Lead Time Technology, following a 20-year career in management at DuPont; May 15, 2017.


Theresa M. Benedetti '93, architect, IBI Group-NYC, active in the American Institute of Architects and as volunteer for New York Cares; March 18, 2018.

Caine M. Goyette '01, decorated U.S. Marine Corps major, who served in Okinawa, Bahrain, and Africa; July 10, 2017.

Matthew P. Wentland, M.E. '10, retired environmental scientist and engineer at GPI in Vermont, and avid outdoorsman; Feb. 9, 2018.

Sorab K. Ghandhi, professor emeritus, electrical, computer, and systems engineering, who pioneered in microelectronics technology research; July 6, 2018.
Scholarship support enables students like Adam to dream big, work hard, and pay it forward. Scholarship support does more than change the world for one student—it inspires confidence, fosters community, and unleashes the potential of our talented students, and future alumni and alumnae, to discover how they, too, can change the world.

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Adam is a recipient of the Kay and Edward E. Hood, Jr. Scholarship.