HIGH PERFORMANCE COMPUTING POWER — PUTTING DOWN ROOTS IN TROY — CELEBRATING SISTERHOOD

MAKING MUSIC

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The Future of Cognitive Computing

Rensselaer and IBM came together in November to launch the Cognitive and Immersive Systems Lab (CISL) at the Curtis R. Priem Experimental Media and Performing Arts Center (EMPAC). CISL at EMPAC is a new research initiative that uses the infrastructure of EMPAC to further expand the intellectual and artistic discourse at the intersection of digital technology and the human condition. A “virtual ribbon-cutting” was done by John Kolb '79, vice president and chief information officer at Rensselaer; John Kelly III '78, Rensselaer trustee and senior vice president, solutions portfolio and research at IBM; President Shirley Ann Jackson; and Hui Su of IBM Research, a prominent researcher in the area of cognitive user experience who will lead CISL at EMPAC. For more, see page 4.
Situations Rooms

The new Cognitive and Immersive Systems Laboratory brings together humans and machines to tackle complex global challenges

Since this is Rensselaer, we take on the hard problems, those stubborn barriers to progress on a global scale.

Among them are: the fact that the genomics revolution has not yet fully personalized the practice of medicine, and that doctors still struggle with therapeutics that fail in a high percentage of patients; the fact that education does not sufficiently recognize that we learn with our hands, our ears, our eyes, our palates, our noses—as well as with our reason; the fact that architects and designers do not have elegant tools that allow them to work collaboratively on different aspects of the same project, at human scale; the fact that businesses considering new investments find it difficult to account for extreme possibilities in their valuations—yet we live in a world of extreme possibilities that can be triggered by climate change, by the rise of non-state actors, or by the likelihood of financial contagions in a global economy; and the fact that the most sophisticated nations on Earth cannot yet predict and prevent strikes by terrorists on innocent civilians.

Clearly, these are complex problems, requiring the merging of expertise in many different domains. At Rensselaer, we enable collaborations capable of addressing interconnected global challenges, in part by creating the tools that can undergird group learning and decision-making. This fall, in partnership with IBM, we launched a new effort to discover and to develop such tools, the Cognitive and Immersive Systems Laboratory, or CISL at EMPAC. CISL initially will focus on Situations Rooms that bridge human perception with intelligent systems in an immersive, interactive setting—enabling environments such as a cognitive design studio, a cognitive boardroom, a cognitive medical diagnosis room, or a cognitive classroom.

To create Situations Rooms, we are convening experts from IBM and from all five of our schools, talented people in an extraordinary range of disciplines. When I say that we like the hard problems at Rensselaer, that includes great technological challenges, as well as great global challenges—including the challenge of imbuing meeting rooms with two kinds of intelligence.

First, they must use cognitive computing and advances in artificial intelligence, data science, network science, and other domains to amass enormous amounts of pertinent information—and to find answers for us within it.

Here is what makes CISL particularly ambitious: We are not using cognitive computing at the scale of a single cognitive agent, such as you might find in your smart phone. Instead, we will build upon technologies designed originally for individuals, to enhance group cognition and group decision-making. This makes IBM—which focuses on business-wide solutions, and which understands deeply the value of collaborations—the ideal partner in such an endeavor.

At Rensselaer, we enable collaborations capable of addressing interconnected global challenges, in part by creating the tools that can undergird group learning and decision-making.

To contribute to group interactions, these cognitive agents must be truly sophisticated, able to capture the ambiguities, unclear references, interruptions, and exclamations with which we all are familiar from our own experience of meetings—and convert them into understanding—even into understanding the underlying intent of what is being said. These agents must not just answer questions, but also anticipate the need for information, so the room can visualize it in the most expressive ways.

The second kind of intelligence our Situations Rooms require belongs to the rooms themselves. In them, we are enhancing cognition at the human scale—not at the level of small devices, but within multimodal spaces that take in visual cues, verbal cues, and movement, and translate this information into symbolic inputs for the cognitive agents, whose results it will then communicate back in the most enlightening way, using visual, auditory, or haptic modes of communication, allowing users to perceive and to comprehend through multiple sensory pathways.

This requires computer vision capabilities that allow participants to be recognized by their faces, and then to be followed around the room, and auditory capabilities that can capture what each is saying. Gesture recognition is important, as well. Finally, the room should be able to use these sensory cues to follow the flow of a meeting—even to pick up mood, biases, degrees of power and interest, and when and whether a decision has been made, or a consensus reached.

Ultimately, CISL at EMPAC will bring together humans and machines in much more subtle and sophisticated ways—so that machines, with their ability to absorb enormous amounts of data, and to employ that data for calculation, analysis, representation, prediction, and hypothesis generation, can enhance those gifts that belong uniquely to human decision-makers: creativity, courage, insight, and the desire to make the world a better place.
Eric Ameres ‘88, EMPAC senior research engineer, and Gordon Clement ‘14, EMPAC media systems integrator, have created the Campfire, a new computing interface that allows a small group of users to collaboratively consider information.

When we need to consider information as a group, most of us turn to a computer projector and a mouse. The world may be round, but our only digital option for exploring it in a meeting is on a flat screen. Surpassing that limitation—by creating new computer interfaces that allow people to intuitively share and manipulate data—vastly expands the power of computers in collaborative decision-making situations.

The Campfire is a new computing interface that allows a small group of users to collaboratively consider information. The Campfire is one of the first tools in the new CISL at EMPAC lab (see page 4).

As suggested by its name, the Campfire is a projection device shaped like a cylindrical fire pit, about six feet in diameter and two feet high. A wide rim surrounds the top of the cylinder, allowing users to gather around the Campfire and view data projected onto the walls and flat circular floor of the device. Related data sets or images can be projected onto different locations inside the Campfire, with the edge between the surfaces acting as a blending site.

“Because of the way that you’re arranged, you immediately feel like you’re engaged in the same content,” says Ameres. “Multiple people can be looking at the same thing, and at any point, I can look up and see your eyes and see where you’re looking. It may sound trivial, but being able to observe someone else’s attention is something we do as humans all the time, and is central to collaboration.”
IN DECEMBER, THE WHITE HOUSE ANNOUNCED that President Barack Obama has selected President Shirley Ann Jackson to receive the National Medal of Science, the highest honor for scientific achievement bestowed by the United States government. The award recognizes individuals deserving of special recognition for their outstanding cumulative contributions to knowledge in the physical, biological, mathematical, engineering, or behavioral or social sciences, in service to the nation.

“All of us at Rensselaer Polytechnic Institute are very proud that President Jackson has been chosen for the nation’s pre-eminent award for research and leadership in science,” says Arthur Gajarsa ’62, chairman of the Rensselaer Board of Trustees. “This honor is truly deserved. In addition to the important contributions Dr. Jackson has made in condensed matter theory, she has advocated vigorously for science and technology within the public realm, and, at Rensselaer, has established a new model for scientific and technological education, designed to address the great global challenges of our day.”

The award was scheduled to be given on Jan. 22 in Washington, D.C. A celebration in President Jackson’s honor was held the evening before, on Jan. 21, and alumni, alumnae, friends, and Rensselaer community members turned out in force to honor her. Unfortunately, the White House postponed the induction ceremony on Jan. 22 when a major snowstorm buried Washington and much of the Northeast.

Since joining Rensselaer in 1999, President Jackson has undertaken a transformation of the university’s pedagogical approach with the implementation of The New Polytechnic, emphasizing collaboration across disciplines, sectors, and regions to address key intersecting challenges and opportunities in energy security, health, food, water, and national security, as well as the linked challenges of climate change and allocation of scarce resources so critical to our future.

“Dr. Shirley Ann Jackson has worked tirelessly in the pursuit of research, STEM education for all students, in service to our government, and for Rensselaer,” says Wanda Denson-Low ’78, Rensselaer trustee and former senior vice president at the Boeing Company. “Dr. Jackson has been a role model for all women globally, not just for those who wish to pursue science and engineering, and she has inspired all those who have crossed her path.”

“Dr. Jackson was my first physics teacher at MIT in 1969,” says S. James Gates Jr., University of Maryland Distinguished University Professor. “She has been a ‘north star’ to many colleagues over the years as she modeled exceedingly well something she says: ‘Even smart people have to work very hard to accomplish something great.’ She is the epitome of this statement in so many diverse areas and deserves a hearty congratulations from all the communities she has touched.”

The National Medal of Science was established by the 86th Congress in 1959. A committee of 12 scientists and engineers appointed by the President evaluates the nominees for the award.

Since its establishment, the National Medal of Science has been awarded to 487 distinguished scientists and engineers whose careers spanned decades of research and development.

President Jackson was congratulated by S. James Gates Jr., University of Maryland Distinguished University Professor, who studied under her at MIT.

NATIONAL RECOGNITION

President Shirley Ann Jackson To Receive National Medal of Science
Amparo team members and consultants are working to perfect the device.

**BIOMEDICAL ENGINEERING**

**Student-Led Company Receives Grant for Prosthetics**

Doctoral candidate Matthew Dion ’12 and his partners in Amparo have been awarded a prestigious EXIST-Gründerstipendium (EXIST Business Start-up Grant) to help fund their invention—an inexpensive device that could make prosthetic legs readily available to amputees in developing nations.

A program of the German Federal Ministry for Economic Affairs and Energy, EXIST provides awards of up to 200,000 euros to help students, graduates, and scientists bring innovative projects and services to market. The grant will enable Dion and his partners to officially launch Amparo early next year.

Amparo has developed a prosthetic socket that makes it easier and cheaper to connect a patient’s residual limb to a prosthetic leg. The socket is made of a thermoplastic material that becomes pliable when heated and, as a result, offers significant advantages.

Amparo can be reheated and remolded to maintain the proper fit—an important consideration because the size and shape of residual limbs fluctuate over time. And, Amparo can be mass-produced, resulting in significant cost savings.

“We wanted to design a socket that would be extremely inexpensive and that amputees could be taught to adjust themselves,” Dion says. “In many developing countries, the government will provide a prosthetic leg every four years. But the residual limb can change drastically in the first six months, leaving the patient with a prosthetic leg that’s no longer comfortable or functioning properly. One of our goals is to give patients the freedom and flexibility to reshape the socket, on their own.”

Eric Ledet, associate professor of biomedical engineering and Dion’s doctoral adviser, is extremely supportive. “It is very gratifying to find students willing to dedicate their own time to a project that doesn’t directly benefit them but has the potential to provide enormous benefit to people in need,” he says. “As a professor, I get a great deal of fulfillment from providing a platform for these students to demonstrate what they’re capable of.”

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**HUMANITIES, ARTS, AND SOCIAL SCIENCES**

**Dissecting the Environmental Health of Six Cities**

A $300,000 National Science Foundation (NSF) grant awarded to faculty in the School of Humanities, Arts, and Social Sciences will be used to examine how science is applied in six cities, and how it is used to manage air quality. Of significance is the fact that the study of science-based policies in six cities is being conducted through the lens of the humanities.

“This is an attempt to characterize the governance styles of officials, scientists, nonprofit organizations, and concerned citizens,” says Kim Fortun, professor of science and technology studies and principal investigator on the project. “There are remarkable differences between, say, Houston and New York, which partly result from the political and cultural history of the places.”

In addition to those two cities, the two-year project, “Environmental Health Governance in Six Cities: How Scientific Cultures, Practices and Infrastructure Shape Governance Styles,” will study Philadelphia, Pennsylvania; Albany, New York; Bengaluru, India; and Beijing, China.

Teams in each city will examine policy governing the environment, health, transportation, and education. Researchers, coordinated by the core team at Rensselaer, will do extensive interviews with the stakeholders to see how they approach and apply science to address air pollution and other health threats. Goals include developing an open-access data archive with material that characterizes and illustrates the different “thought” styles of the policymakers, along with the factors that shape decision-making.

The project continues Fortun’s project “The Asthma Files,” which focuses broadly on how societies deal with environmental health problems. She says that while this NSF-funded project has a broad application, providing a model for collaborative research, the cities involved will also benefit directly.

In addition to the NSF, the research is supported through a Rensselaer Knowledge and Innovation Program (KIP) seed grant and by the Research Data Alliance (RDA).
ATHLETICS

Joé Juneau ’91
Receives NCAA Silver Anniversary Award

RENSSLEAER HOCKEY STANDOUT JOÉ JUNEAU ’91 was one of six recipients of the prestigious NCAA Silver Anniversary Award for his collegiate and professional achievements. The Silver Anniversary Award annually recognizes distinguished individuals on the 25th anniversary of the conclusion of their college athletics careers. Juneau is the first Rensselaer alumnus to receive this award.

“I offer my deepest congratulations to Joé Juneau as a recipient of the NCAA 2015 Silver Anniversary Award,” says Lee McElroy, director of athletics. “This honor recognizes not only Joé Juneau’s outstanding athletics and academic feats but also his character and leadership qualities.”

When Juneau arrived at Rensselaer, he spoke only French. He learned English while on campus, and also earned his aeronautical engineering degree in just three years. Juneau contributed immediately on the ice for Rensselaer, leading the team in assists and points in his first season. He was drafted by the Boston Bruins but elected to continue to play in college and went on to become just the second player in school history to exceed 50 assists in a single season.

Juneau was a finalist for the Hobey Baker Award (college hockey’s highest honor), garnered multiple All-America honors, and graduated as the only player in school history to lead the team in scoring all four years.

He also represented Canada in the 1992 Olympic Winter Games in France, where he led all Olympians in scoring with 15 points and led Canada to a silver medal. He went on to a successful National Hockey League career, where he played for 13 years with six organizations. His 70 assists tied the NHL record by a rookie, and is still the NHL record for most assists by a left wing.

EMPAC

Australia Council for the Arts Joins Residency Program

THE AUSTRALIA COUNCIL FOR THE ARTS, THE Australian Government’s arts funding and advisory board (equivalent to the National Endowment for the Arts in the U.S.), has enlisted the Curtis R. Priem Experimental Media and Performing Arts Center (EMPAC) at Rensselaer as a host venue for a new international arts residency program. Along with host organizations in Paris, Rome, London, Berlin, Helsinki, and Nashville, EMPAC will support the first of these artistic production residencies between July 2016 and June 2017, with all funding and an additional hosting sum provided by the Australia Council.

The council’s International Residencies Program was created to forge “partnerships with some of the best residency providers in the world to deliver a suite of residencies that enable the development of individual artists, arts mediators, groups, and organizations.” Organizers will work in tandem with EMPAC curators to select a project that fits EMPAC’s programming trajectory and best utilizes its technical infrastructure. The chosen applicant will be awarded a $10,000 production grant and be allowed two residential periods of up to three weeks to develop “time-based arts, with an emphasis on integrating technology as artistic means.”

EMPAC was approached with the offer because of its internationally renowned production environment that “supports the realization of complex works at any stage from inception to completion. Along with a state-of-the-art facility, it offers residents the support of a staff of experts in audio, video, interactive interfaces, and stage technologies.” While EMPAC often works with outside granting and co-commissioning organizations, this contract is a first for the Rensselaer program, and uncommon in the industry, given that EMPAC itself will be awarded funding.

“This is an indication of the national and international position created with and at EMPAC,” says EMPAC director Johannes Goebel of the contract.

EMPAC has worked extensively with international artists since its inception, including with the Australian dance companies BalletLab and Chunky Move. With this arrangement, EMPAC has further established itself within the top group of international production, research, and performance facilities, developing multidisciplinary art with the integration of high-end technological tools and support by an interdisciplinary team of experts.

EMPAC has hosted the Australian dance company BalletLab several times.
The CASE project is using coconut husks, an agricultural by-product, to create non-toxic wall modules that can help cool buildings passively.

In Ghana, like many tropical countries around the world, people widely use and export coconuts for their fruit, milk, and cooking oil. The husks are thrown away by the millions, leaving to waste what might instead be transformed into a multifaceted building material.

“The coconut is not just any waste product; it has a lot of great properties,” says Josh Draper, an architect and clinical professor at the Center for Architecture, Science, and Ecology (CASE), which hosts Rensselaer’s graduate program in Built Ecologies. “The question is ‘what if we could take it and make it into something useful and something beautiful for our buildings?’”

For seven years, Rensselaer researchers at CASE in New York City and in the School of Architecture on the Troy campus have been developing building products from coconuts and other agricultural waste as a sustainable, low-energy alternative to plywood and other materials made with synthetic adhesives. They are using coconuts to create non-toxic wall modules and an acoustical panel system that can help cool buildings passively.

Ghana is a target country because construction is booming, building materials are largely imported, and coconuts are commonly used and their by-products are discarded.

Supported with numerous grants, the research has taken Draper—and co-principal investigators Demetrios Comodromos and Gustavo Crembil, doctoral candidate Mae-Ling Lokko, and several architecture undergraduates—to Ghana several times, and more trips are planned this year.

The wall panels have been prototyped and are in the early stages of patent review. In August, members of the Rensselaer team will build a kiosk with the panels to display at the Chale Wote Street Art Festival in Accra, Ghana. The festival is a forum for showcasing experimental ideas in art and design.

The ropelike coir fiber extracted from a coconut husk is very strong. And the coir can be pressed with the coconut’s pith, a dust in the husk that acts as a natural binder, to form a biocomposite that is as strong as plywood.

In addition, Draper says, the coir and pith are desiccants, which remove moisture and pollutants from the air. CASE researchers and other Rensselaer collaborators are developing an acoustical panel with these materials, which could save energy and money by reducing loads on air-conditioning.

Lokko says she came to CASE in 2011 specifically for the opportunity to take part in such research. Following her initial study of coconuts and their potential, she took part in a professional co-op term with renowned Ghanaian architect David Adjaye.
Alumni Hall of Fame Welcomes New Members

Seven new members have been inducted into the Rensselaer Alumni Hall of Fame, bringing the total membership to 79. The induction ceremony was held on October 2, as part of Reunion & Homecoming weekend.

“The Rensselaer Alumni Hall of Fame is a relatively recent innovation at Rensselaer, its inaugural class dating just back to 1998,” said President Jackson in her remarks. “As we approach the 200th anniversary of our founding in 2024, we want to ensure that our history resides, not merely in books and in library archives—but also in the consciousness and aspirations of the entire Rensselaer family.”

2015 INDUCTION CEREMONY

William Gurley  
CLASS OF 1839

Lewis E. Gurley  
CLASS OF 1845

In 1852, the Gurley brothers founded W. & L. E. Gurley, one of the first manufacturers of precision measuring instruments in the United States. The innovative company, based in Troy, N.Y., met the growing demand for quality surveying instruments and grew to international prominence.

David L. Noble  
CLASS OF 1940

David Noble conceived and led the design and development at IBM of the 8-inch flexible floppy disk and associated disk drive mechanism, which launched a major new segment of the computer industry. The floppy disk icon became a universal symbol for saving files.

An image captured by Michael Deagen, a graduate student and research assistant in the Center for Lighting Enabled Systems & Applications, recently earned first place in the Artistic Microscopy, Black & White category of the 2015 International Metallographic Contest sponsored by the International Metallographic Society (IMS).

“During my Versa Scanning Electron Microscope training, I took an image of one of the standard samples, a cross-section of a 500-um diameter cylinder of rolled graphene,” Deagen says. “At 5,000 times magnification under a 20kV beam, the image was rather striking and reminded me of the brushstrokes of a van Gogh painting.”

The International Metallographic Contest and Exhibit is being held in conjunction with the Microscopy & Microanalysis 2016 meeting and the 49th Annual IMS Meeting in Columbus, Ohio, July 24-28, 2016. The contest features the best work of metallographers and microstructural analysts from around the world.
MAKING A DIFFERENCE

Pathway to Success

Sometimes, the pathway to success and fulfillment can take us in an unexpected direction, particularly during the college years. For parents, this can be an exciting time, as their son or daughter becomes truly independent, and discovers new interests and a sense of self. Aldo and Robyn Manzini, parents of senior Thomas Manzini ’16, are no exception.

The Manzini’s credit the supportive environment at Rensselaer with their son’s development and success. During his four years as a computer science major, Thomas also began an important and enriching experience with RPI Ambulance that developed his passion for helping others and creating lasting friendships. Now, as captain of the RPI Ambulance team and a certified New York State EMT, Thomas is thriving academically and socially, and with plans for graduate school after Rensselaer, his future is filled with unlimited possibilities.

Thomas’ parents believe that his experience at Rensselaer helped to develop that love of learning. “We have seen our son blossom at Rensselaer,” the Manzini’s say. “This is, in large part, due to the academic opportunities available to him and the quality of the faculty and their engagement with the students, as well as his ability to become involved in several research projects. Tom has expanded his horizons to leverage that learning into three wonderful internships, and used these experiences to help him network with other Rensselaer alumni.”

Their enthusiasm and support for Rensselaer go well beyond their son’s positive experience as a student, as they look to provide opportunities for other families and students to experience all that Rensselaer has to offer. The Manzini’s co-chair the Society of Families, a leadership giving society at Rensselaer, which recognizes gifts from families of $2,500 or more to the Rensselaer Annual Fund.

Membership in the Society of Families provides the opportunity to connect with faculty, campus leaders, and other parents at special receptions and events. “We are involved with the Society of Families to provide this opportunity for future Rensselaer students. The involvement of all parents can benefit their students, and other students as well. We have had unexpected access to Rensselaer leadership, thanks to the Society of Families. There is a clear willingness on the part of this leadership to engage with students and parents, and for that, we are grateful,” the Manzini’s say.

“Robyn and I understand that whatever Thomas ends up doing in his professional career, Rensselaer is now part of his life,” Aldo Manzini says.

To learn more about the Society of Families, please go to giving.rpi.edu/.

William M. Klages
CLASS OF 1947

Bill Klages established his reputation as a lighting designer in the early days of television and has lighted landmark shows, entertainment specials, and events. The recipient of seven Emmy Awards, he was inducted into the Academy of Television Arts & Sciences Hall of Fame in 2012.

Stephen E. Harris
CLASS OF 1959

A member of three national academies, Stephen Harris has been recognized for his pioneering contributions to the science of light, including groundbreaking research in nonlinear optics, and the first observation of electromagnetically induced transparency and its use for slow light.

John F. Schenck
CLASS OF 1961

John Schenck was a key member of the research team at GE that developed the first high-field MRI scanner in the early 1980s. The 1.5 tesla magnet his team chose for the prototype became the industry standard, and MRI became a vital and widely used medical diagnostic tool.

E. Trifon Laskaris
CLASS OF 1974 Ph.D

The pioneering contributions of E. Trifon Laskaris to the design and construction of superconducting magnets have had a major impact on magnetic resonance imaging, a technology that has helped revolutionize modern medicine. As chief scientist at GE, he holds over 200 patents.
IDEA, EMPAC Fuel
NEW Concentration

As one of the first programs of its kind in the nation, Multisensory Data Design breaks new ground in preparing students for careers in big data. The newest Electronic Media, Arts, and Communication (EMAC) concentration will equip Rensselaer graduates to present data in multiple ways—including visual, sonic, and other sensory representations—that better communicate the stories behind the data and its potential to improve everyday life.

Communication and Media Professor Patricia Search, who helped develop the new concentration, sees enormous demand for those who can tap multiple senses to unlock, interpret, and communicate the myriad information contained in today’s complex data sets.

“We get caught up in the numbers, but data is really about narratives,” she says. “When you use multiple senses to represent data, you develop more intuitive ways to interpret the data—to help others see important relationships and make the human connection.

Launched last fall, Multisensory Data Design is the latest option for students pursuing a B.S. in EMAC. The new concentration integrates two platforms that are unparalleled worldwide for their capabilities and innovation: the Rensselaer Institute for Data Exploration and Applications (IDEA) and the Curtis R. Priem Experimental Media and Performing Arts Center (EMPAC).

With IDEA and EMPAC, students enrolled in the concentration will benefit from the world’s most advanced supercomputing, data visualization, and large-scale virtual reality systems. Students also will work with world-class researchers to help create data representations that diverse audiences can understand. Most of all, students will move beyond analyzing and presenting data on a computer screen to showcasing the relationships that could help unlock the data’s potential.

PHYSICS, APPLIED PHYSICS, AND ASTRONOMY

A Detector Shines in the Search for Dark Matter

RESULTS OF THE XENON100 EXPERIMENT are a bright spot in the search for dark matter. A team of international scientists involved in the project—which includes Rensselaer researcher Ethan Brown—have demonstrated the sensitivity of their detector and recorded results that challenge several dark matter models and a longstanding claim of dark matter detection. The results are published in the journals Science and Physical Review Letters.

Dark matter is an abundant but unseen matter in the universe considered responsible for the gravitational force that keeps the Milky Way galaxy together, says Brown, assistant professor of physics, applied physics, and astronomy.

“Dark matter, which is the cosmic glue responsible for the formation of galaxies, is all around us,” says Brown. “Most of the time it passes right through the tiny spaces between the subatomic particles that make up our bodies and the Earth, but occasionally it will bump into an atom, knocking it backward ever so slightly.”

Scientists from a dark matter project named Dark Matter Large Sodium Iodide Bulk for Rare Processes, and referred to as the DAMA/LIBRA project, claimed to have detected dark matter in 1998. The team observed a signal that varied with the seasons, as is expected for dark matter as the Earth’s orbit around the sun changes the speed at which it passes through a halo of dark matter that envelops the Milky Way, says Rafael Lang, assistant professor of physics at Purdue University who was involved in the research.

However, other teams searching for dark matter did not observe the same signal, even though their experiments were more sensitive than DAMA/LIBRA. The DAMA/LIBRA team suggested that those groups could be blind to the signal because the dark matter was interacting with the atoms of the detector in an unexpected way, which they were not equipped to register, such as scattering off of electrons or creating photons in the detector. Most experiments have been designed to search for a scattering of dark matter off the nuclei of atoms of the detector material, as predicted by most theories, and are therefore not well tuned to distinguish the more exotic signals from radioactive backgrounds. But given the incredibly low background of XENON100, the detector would be able to distinguish those signals,
“Urban Swales” proposes a series of medium-scale urban excavations throughout Los Angeles that provide a new typology of shaded “urban caverns” for human as well as nonhuman forms of occupation.

A RENSSLEAER STUDENT PROJECT HAS BEEN selected as the second-place winner in the Dry Futures competition, sponsored by Archinect. The competition was designed to address the unfolding drought crisis in California. Archinect launched the competition last summer—in the fourth year of California’s ongoing drought—asking for bold design proposals that could mitigate the over-consumption of water.

“We believe architects possess a remarkable set of tools and skills that uniquely establish the capacity to adapt to a problem that is both multifaceted and enormous. We are looking for the imaginative, the pragmatic, the idealist, and the dystopian,” Archinect stated.

The competition was divided into two categories: one for speculative projects and the other for pragmatic responses. The “Urban Swales” project received second place in the speculative category. The project was conceived by Muhammad Ahmad Khan, a graduate student in the Geofutures Post-Professional Program in Architecture and Urbanism in the School of Architecture, as part of an advanced design studio conducted by Chris Perry, assistant professor of architecture, head of graduate studies at the School of Architecture, and director of the Geofutures program, and Ted Ngai, a lecturer at the School of Architecture and a studio instructor in the Geofutures program.

According to Khan, “Urban Swales” proposes a series of medium-scale urban excavations throughout the city of Los Angeles, micro-reservoirs that, in addition to collecting periodic storm water runoff for remediation, storage, and redistribution to local communities, provides a new typology of shaded “urban caverns” for human occupation. “As such, Urban Swales functions not only as a distributed form of water management infrastructure, the general ambition of which is intended to relieve the city’s excessive dependence on imported water, but as a new form of public space and wildlife refuge as well,” Khan says.

“The Geofutures advanced design studio established coastal flooding and drought as principal architectural problems for consideration by each of the graduate architecture students,” says Perry. “The students were challenged to develop new types of utility in a time of environmental crisis, but new forms of visual and spatial aesthetics as well.”

“Urban Swales” is designed to subvert the conventional quest for water as an act of drilling wells into the landscape. Rather than excavating and tapping into existing water reserves or aquifers, it instead activates the potential of dormant urban hydrologies.

According to Perry, the Geofutures graduate program “endeavors to convert crisis into opportunity by harnessing both the pressures of a planet at risk and emerging environmental technologies to generate a broad spectrum of possible, if not probable, urban and architectural futures for the 21st century.”

EMPIRE STATE DEVELOPMENT (ESD) HAS ANNOUNCED three new Digital Gaming Hubs in New York state at Rensselaer, New York University (NYU), and Rochester Institute of Technology (RIT). The Digital Gaming Hubs, selected through a request for proposals process, will receive $150,000 each per year for three years.

“The new Digital Gaming Hubs will encourage students and businesses to create new innovative technologies,” says Empire State Development President, CEO, and Commissioner Howard Zemsky. “This funding will also help entrepreneurs and startups develop new products and spur economic growth throughout New York state.”

Objectives of the Digital Gaming Hubs are to: create collaborative activities that bring together industry, higher education, nonprofit organizations, students, and individuals to foster the creation of new games or companies; provide resources and mentoring to encourage students and entrepreneurs to enter the growing industry; assist existing companies with gaming concepts, technologies, and trends; host events focused on assisting the gaming community; and increase the economic impact to New York as a result of fostering innovation.

According to Ben Chang, associate professor of arts and director of the Rensselaer Games and Simulation Arts and Sciences program, “There is tremendous talent and creativity in games, here in the Tech Valley region and throughout New York state—university researchers discovering new ways of using games in education and health care, nonprofits teaching game design to kids and building creative communities, and game developers of all kinds constantly reinventing the medium. We’re honored to be selected as one of three Digital Gaming Hubs, and excited to be working with our partners in the local community and across the state to take game development in New York to the next level.”
Ray Tomlinson invented email as an engineer for Bolt Beranek and Newman in 1971. While working on a contract to create ARPANET, a communication network that would allow scientists and researchers to share each other’s computer facilities, he hit on the idea to merge an intra-machine message program with another program developed for transferring files among ARPANET computers. Unforeseen at the beginning of ARPANET, Tomlinson’s creation of email became the future Internet’s most popular application.

“Ray Tomlinson fundamentally changed the way that the world communicates,” says President Shirley Ann Jackson. “With a stroke of a key, we can now speak directly and instantaneously to friends, family, colleagues, and business partners across borders, states, countries, and oceans. He invented email, and he was the first to use the @ symbol to communicate—a symbol that is foundational for nearly all of the social networking platforms we use today. We now rely on his invention to communicate with our families and our colleagues, to coordinate informal meetings and summits of world leaders, to forge multibillion-dollar deals and to ratify multinational agreements to reduce nuclear arsenals and combat climate change. The Rensselaer community is saddened by the loss of Raymond Tomlinson, and we are grateful for the incredible contributions that he made to the world.”

Over the course of his career, Tomlinson received many awards and honors. In 2001, he was inducted into the Rensselaer Alumni Hall of Fame. That same year he received a Webby Award from the International Academy of Digital Arts and Sciences for lifetime achievement. In 2002, Discover Magazine awarded him its Innovation Award. In 2011, he was listed fourth in the MIT 150 list of the top 150 innovators and ideas from MIT. And, in 2012, Tomlinson was inducted into the Internet Hall of Fame by the Internet Society.

“Most people today don’t realize that email was invented long before the Web browser, the personal computer, Google, the cell phone, and most of the other computing innovations we take so much for granted today,” says James Hendler, Tetherless World Professor of Computer, Web, and Cognitive Sciences.

“The fact that he designed the system in such a way that it was able to scale to the literally billions of users on today’s Internet demonstrates what a visionary he was.”
FRANCINE BERNAN, the Edward P. Hamilton Distinguished Professor in Computer Science, has been appointed by President Barack Obama and confirmed by the U.S. Senate to serve on the National Council on the Humanities (NCH), a board of 26 distinguished individuals who advise the chairman of the National Endowment for the Humanities (NEH). Berman is an international leader in data science whose work focuses on the development of sustainable infrastructure for digital stewardship and preservation.

JAMES HENDLER, Tetherless World Professor and director of the Rensselaer Institute for Data Exploration and Applications (IDEA), has been appointed to the Homeland Security Advisory Committee. The committee provides scientific and technical advice to the undersecretary for science and technology on matters related to the expansion of technological capabilities across the homeland security enterprise.

AUDREY BENNETT, associate professor of communication and new media, was named the 2015 Andrew W. Mellon Distinguished Scholar at the University of Pretoria, South Africa. Bennett traveled to South Africa to visit the university to collaborate with the faculty and staff involved with the University of Pretoria Department of Visual Arts Visual Technologies project, which explores critical encounters with the digital, curatorial, archival, creative, and theoretical dimensions of technology in contemporary society.

STEVEN CRAMER, the William Weightman Walker Professor of Polymer Engineering, has received an American Chemical Society (ACS) award in Separations Science and Technology. The ACS awards program is designed to encourage the advancement of chemistry in all its branches, to support research in chemical science and industry, and to promote the careers of chemists. Cramer is a recognized global leader in chromatographic bio-processing. His research focuses on developing new methods and technologies to separate and purify biological compounds, both of which are major challenges facing drug discovery.

LINDA TIEITELMAN MCCLOSKEY, director of the Archer Center for Student Leadership, has received the National Association of Student Personnel Administrators (NASPA) Region II Outstanding Contribution to Student Leadership Programs Award. NASPA annually recognizes individuals who have made significant and outstanding contributions to their campus, student affairs, and the field of higher education.

B. WAYNE BEQUETTE, professor of chemical and biological engineering, has been named a fellow of the Institute of Electrical and Electronics Engineers (IEEE). Bequette, a modeling, design, and controls expert, was recognized for contributions to design and control of chemical and biological systems. Much of his recent work has been toward the development of a closed-loop artificial pancreas for individuals with Type 1 diabetes. Fellowship in the IEEE is conferred upon persons with an outstanding record of accomplishments in any of the IEEE fields of interest.

TESSA POCOCK, senior research scientist in the Center for Lighting Enabled Systems & Applications, delivered the keynote address at the 2015 U.S. Department of Energy Solid-State Lighting Technology Development Workshop in Portland, Oregon. Pocock discussed how the ability to tune the spectrum of LED light sources has opened up new possibilities for horticultural lighting—to improve indoor plant production and associated energy use as well as plant nutrient and pharmaceutical value.

NANCY DINIZ, assistant professor of architecture, has been awarded a residency fellowship at the Eyebeam art + technology center in New York City, under the center’s newly launched program “New Works from Innovators at the Intersection of Art and Technology.” Diniz’s main research and teaching interests question traditional scale boundaries between design disciplines—product design, architecture, and computer science.

MICHAEL SHUR, the Patricia W. and C. Sheldon Roberts ’48 Professor of Solid State Electronics, has received an Institution of Engineering and Technology Achievement Award for pioneering contributions to deep ultraviolet light-emitting diode technology. The awards recognize individuals from around the world who have made exceptional contributions to the advancement of engineering, technology, and science.

JOHN LYNCH, head women’s cross country coach, was selected as the 2015 Liberty League Coach of the Year. Lynch led the Engineers to the Liberty League championship, their first in 14 years, as Rensselaer placed five runners in the top 12, compiling 34 team points. At the national championship, Rensselaer placed ninth, which was the highest-ever finish in the history of the program.
THE POWER OF COMPUTATION

BY JODI ACKERMAN FRANK
Over the last decade, unprecedented capabilities in computation have unlocked enormous opportunities for discovery, innovation, and policymaking in areas ranging from energy, health, and manufacturing to the environment and cybersecurity.

Enter the era of high performance computing (HPC), in which supercomputers and other advanced computational systems are computing, capturing, analyzing and interpreting, storing, transferring, and visualizing vast amounts of unstructured data into a tangible resource for major impact across society.

At Rensselaer, high performance computing to process data in ever more efficient and enlightening ways has advanced rapidly in areas ranging from advanced manufacturing to new cancer screening tools. At the heart of all this activity across the university’s schools and disciplines is the center for computational innovations (CCI).

WORLD-CLASS SUPERCOMPUTING
A top 50 supercomputing center of any kind in the world, the CCI serves as a vital resource for providing the technical capability along with the expertise to perform low-cost, high performance cluster computing, bringing together academia, industry, and government for major impact and global transformation.

“The CCI is a platform on which Rensselaer is building a world-class hub of computation and data-related research, innovation, and education,” says CCI Director Christopher Carothers.

The CCI was established in 2007 with an initial $100 million partnership with IBM and New York state. The center, with its core 33 faculty, supports a large network of researchers, faculty, and students from 50 universities, government laboratories, and companies across a diverse spectrum of disciplines. Researchers perform a broad range of computational simulations, from the interactions between atoms and molecules all the way up to the behavior of a complete device. Industry collaborators include IBM, Boeing, GlobalFoundries, Intel, and Xerox, as well as many smaller companies.

A central feature of the CCI is the advanced multiprocessing optimized system (AMOS), the most powerful university-based supercomputer in New York state and the Northeast, and among the most powerful in the world. The IBM Blue Gene/Q petascale supercomputing system has the ability to perform more than one quadrillion calculations per second and has a network bandwidth of more than four terabytes per second across the system—more than the combined bandwidth of 2 million home Internet subscribers. Additionally, the CCI offers two state-of-the-art Intel processor-based compute clusters and provides over two petabytes of high performance disk storage for its users.

With this unique computational and storage platform, the CCI plays a multifaceted role on campus.

“These systems are designed to support the data analysis and simulations needs of Rensselaer faculty who are performing leading-edge research that addresses key scientific, societal, and industrial problems,” Carothers says. “The CCI also provides an environment for the development of next-generation data analytics and simulation methods.”

The CCI also serves as a unique educational platform that introduces students to writing software for systems like AMOS. In addition, the CCI supports the transition of HPC research developments for use by practitioners in industry and government laboratories.

The CCI is home to Watson, a version of the IBM cognitive computing machine that became famous in 2011 for besting the...
all-time champions of the game show Jeopardy! Watson, which IBM provided to Rensselaer in 2013, has the ability to understand the nuances of human language and sift through vast amounts of data.

Through the longstanding partnership between Rensselaer and IBM, the CCI is also exploring ways to couple its HPC systems with the IBM TrueNorth neuromorphic chip technology for new hybrid forms of computation. Modeled on the architecture of the human brain, TrueNorth is highly energy efficient and adept at image and pattern recognition.

The CCI, which supports $60 million in research, has well-established partnerships with major federal research laboratories, state government-supported entities, and universities across the country.

In fall 2015, Rensselaer joined forces with the Lawrence Livermore National Laboratory [llnl] to help American industry and businesses expand the use of HPC. The agreement allows the two institutions to work more closely together to better support the National Strategic Computing Initiative, announced by President Barack Obama in summer 2015, to foster public-private collaboration to maximize the benefits of HPC.

Rensselaer is also the lead partner in the New York State High Performance Computing Consortium. The consortium of universities and research labs works with New York companies to optimize current products, design next-generation technologies, and train staff in HPC methods.

The Rensselaer investments in computational and data science have enabled the university to participate on the global stage. In 2013, the national science foundation [nsf] awarded a five-year, $5 million grant to Rensselaer and partners to expand United States leadership and engagement in the international data community through the research data alliance [rda]. The RDA, led by Francine Berman, the Edward P. Hamilton Distinguished Professor in Computer Science at Rensselaer, is accelerating the development of global infrastructure for data sharing and exchange among diverse research areas—including tools, code, institutional policy, and best practices—that provide the foundation for new data-driven insights and discoveries.

These collaborations and partnerships are made possible through the CCI’s symbiotic relationships with many centers and facilities across campus, including the Rensselaer Institute for Data Exploration and Applications, or the Rensselaer IDEA.

Established in 2013, the Rensselaer IDEA is designing new approaches to leverage the computational horsepower and unprecedented networking capabilities of AMOS and Watson to develop new technologies that enable Rensselaer faculty and students to work with data, whether in traditional databases or in documents on the Internet, in new ways at larger scales.

In addition, the CCI works hand-in-hand with the scientific computation research center [scorec], which has developed and applied advanced simulation technologies over the last 25 years. The CCI also has strong ties with the Center for Biotechnology and Interdisciplinary Studies and the Curtis R. Priem experimental media and performing arts center [empac]. EMPAC recently launched the Cognitive and Immersive Systems Laboratory, or CISL at EMPAC, to combine advances in artificial intelligence and cognitive computing, using sensor- and actuator-rich immersive technologies.

CCI EXPERTISE

The CCI allows researchers to perform advanced calculations, modeling, and simulations that generate results within a few hours, instead of years, that less powerful computers would need to complete the same tasks. That’s because AMOS computes in parallel.

Parallel computation divides large problems into smaller ones, which are then solved at the same time, thus increasing the scope of research that can be embraced. However, incompatibility issues with other computer systems and software programs present huge hurdles that Rensselaer faculty are addressing head-on to translate design, engineering, and manufacturing data into usable code for AMOS.

“The particular methodologies that we are developing are some of the most challenging type to run on parallel computers, but these computers are absolutely necessary to effectively solve the classes of problems we’re looking at,”
Among the areas in which Maniatty under normal wear-and-tear conditions. such as an airplane wing or a replacement products. The goal is to predict the tools to model the behavior and evolution engineering, develops computational simulating the blood fl. Current application areas for which are computationally intensive, and AMOS of grains are polycrystals that contain multiple curved faces, edges, and corners. Research suggests that when grains stick together, they attach to only a small subset of a practically infinite number of available arrangements.

The 3-D shape of grains is similar to soap bubbles that form when mixing water in a nearly empty dish-soap bottle and then shaking it. Bubbles of different sizes froth around the bottle neck in a seemingly unorganized fashion. On average, however, three bubbles meet at a junction, and the angle between the bubble surfaces is similar throughout the froth.

“The boundaries between the metal grains are just like the boundaries between the bubbles,” Lewis explains. “It’s those boundaries between the metal grains that give the material its strength.”

Lewis, who is also the director of the Fuel Cell and Hydrogen Research Lab at Rensselaer, uses this research, among other ways, to understand the degradation processes in fuel-cell materials.

“I couldn’t explore the microscopic patterns that give materials their strength and other great properties without high performance computing,” Lewis says. “Learning how these patterns form is only accessible through computational material approaches.”

“AMOS is our engine for discovery and product development that’s available right here on campus,” Carothers says. “Having such a supercomputer on-site means that students, faculty, and postdocs have immediate access to conduct research, instead of having to wait in line for weeks or months to use a supercomputer at a state or federal research lab.”

“The particular methodologies that we are developing are some of the most challenging type to run on parallel computers, but these computers are absolutely necessary to effectively solve the classes of problems we’re looking at.”
Lewis is passionate about his work in materials science. He also pushes his students to increase their knowledge in computer technology so they have a competitive advantage in the increasingly high-tech workforce. As part of this effort, he has worked within his materials science and engineering department to improve students’ ability to use computational materials science tools.

A few years ago, he oversaw upgrades to an open-source software program to run on AMOS as a way to accelerate his research team’s endeavors. Trevor Keller, Ph.D. ’15, was an integral part of this software development, with the help of a parallel computing and programming course that Carothers teaches.

“The class teaches our students how to use all of our computer capabilities, and especially the supercomputer,” says Carothers, who has specialized in parallel computing over the last 20 years. “Every student gets an account and they are all able to use AMOS. They receive hands-on experience in writing their own parallel programs that execute on a petascale supercomputer. No other private university in the world does this.”

“At the time I signed up for the class, my research code was already running on AMOS, but any time it tried to write results to disk, the program crashed. Fixing that bug became my term paper for the course, with help from three other graduate students in mechanical engineering, physics, and computer science,” says Keller, who performed large numerical simulations of grain growth to determine why metal grains are biased in the edges they choose to stick to.

The CCI is also in the process of developing a fellowship program with LLNL as a way to continue to attract the
“Every student gets an account and they are all able to use AMOS. They receive hands-on experience in writing their own parallel programs that execute on a petascale supercomputer. No other private university in the world does this.”

best and brightest students and enhance HPC literacy across the curriculum.

“This touches on the ‘Quiet Crisis’ that Rensselaer President Shirley Ann Jackson has spoken about, in that there are not enough people with a STEM [science, technology, engineering, math] background. HPC is a microcosm of this overall STEM workforce gap and the growing need for our students to be HPC savvy,” Carothers says.

Having such skill sets gives students a competitive advantage to work at large companies, which are looking for massively parallel computing skills, or to continue their research at national laboratories because they have the experience of working on AMOS.

ENHANCING THE BIOSCIENCES

The biosciences at Rensselaer are also benefiting from fast computing. Assad Oberai is associate dean for research and graduate programs in the School of Engineering. He is developing a computational technique called bio-mechanical imaging BMI, which maps the mechanical properties of tissue. BMI is being used in conjunction with ultrasound to improve breast cancer diagnosis. The research is supported by the Department of Defense Breast Cancer Research Program, NIH, and NSF.

Although better detection, diagnosis, and treatment have decreased breast cancer death rates, misdiagnosis via mammography and MRI is still common, leading to unwarranted biopsies or cases in which tumors diagnosed as benign were actually cancerous.

BMI creates images of the stiffness of tumor tissue, which Oberai believes offers a more accurate diagnosis by measuring the mechanical aspects of tissue at a level that can’t be seen or felt otherwise.

Specifically, researchers are using BMI to infer the shape and stiffness of individual collagen fibers to determine the outlook of a tumor. The fibers tend to be wavy in benign tumors and straighter, and thus stiffer, in cancerous tumors.

“We hope that this technique will improve the accuracy of a diagnosis, thereby reducing the number of unwarranted biopsies,” Oberai says. “Also, since this technique relies only on ultrasound, it is less expensive, more portable, and safer than the X-ray-based mammogram.”

Oberai’s research team collaborated with Tim Hall, professor of medical physics at the University of Wisconsin, and Paul Barbone, professor of mechanical engineering at Boston University, to test BMI on 10 patients at the University of Kansas and Charing Cross Hospital in London. They were able to correctly diagnose nine out of 10 tumors. The research team is now working with the Mayo Clinic to set up new testing on a larger cohort of patients.

Other Rensselaer researchers are using supercomputing to delve into the molecular world of water and proteins. In fact, AMOS is part of the IBM Blue Gene computer series that was originally built to help biologists observe protein folding and gene development.

Dean of Engineering Shekhar Garde specializes in understanding the role of water in a variety of biomolecular interactions. He employs molecular simulation and statistical mechanical tools to investigate, among other things, how water molecules drive proteins to fold into their unique 3-D structures and how they interact with other molecules.

“Water molecules organize themselves in peculiar ways around proteins, DNA, and other biomolecules, leading to special water-mediated interactions between them,” Garde explains. “Quantitative modeling of such interactions is important to a host of biotechnology and pharmaceutical applications, from developing new drugs and designing new proteins, to creating biologically active materials to improve the stability of bone implants.”

Garde’s group has used AMOS to perform atomically detailed simulations of structure and dynamics of water molecules in a variety of nano- and bio-systems, and even inside of a carbon nanotube.

These studies have provided new insights into how high pressure affects biological systems and the nature of water flow through tiny pores (e.g., carbon nanotubes) can be dramatically different from the flow of water at the macroscopic level.

“Such exciting research is possible largely because of the tremendous computational power of AMOS, which provides a high-resolution window into the dynamics of the molecular world,” Garde says. “The confluence of HPC, data, and new algorithms is bringing a new revolution to modeling of molecules, and it is all happening here at Rensselaer.”
Rensselaer is working to develop a new degree, a Bachelor of Science in Music, that is

With sophisticated performance spaces, seasoned music faculty,

and exciting new course offerings,

Rensselaer is working to develop a new degree,
MUSIC TO OUR EARS

by Nicole St. Clair Knobloch

photos by Mark McCarty
The piece was the triumphant cap on an already rich program that afternoon, performed almost entirely by undergraduates. Audience members arriving and finding their seats were treated to a strings and accordion quartet playing pre-concert tangos, many by 20th-century composer Astor Piazzolla. The Rensselaer Concert Choir offered choral-arranged folk songs from Hungarian, Bulgarian, and early American traditions, then raised their voices with the Rensselaer Brass Choir to fill the hall—the main concert stage at the Curtis R. Priem Experimental Media and Performing Arts Center, or EMPAC—with the ringing harmonies of Gabrieli.

The concert’s theme, “Old Worlds and New,” was meant to describe the range of origins of the program’s music, from Europe to the Americas. It might also have referred to the setting—classical music performed in a state-of-the-art performance space while being live-streamed online. It was certainly relevant to the university’s bold new push to make the arts an integral part of undergraduate education at Rensselaer.

The concert itself sent the intended message to students: Don’t leave your instruments at home.
WHEN STUDENTS COME TO college they think that they’re too busy to continue their love of music. They leave their instruments at home, and don’t think there are opportunities at Rensselaer,” says Curtis Bahn, composer and graduate program director in the Department of the Arts. “One of the first things we ask them is whether they had a music involvement that they stopped when they went to college. We encourage them to get their instrument out, brush it off, and start practicing.”

Bahn is part of a faculty committee in the School of Humanities, Arts, and Social Sciences (HASS) working to develop the undergraduate music program, including a new degree, a Bachelor of Science in Music. The effort is part of a larger campuswide initiative, led by President Shirley Ann Jackson and supported by HASS Dean Mary Simoni, to use the arts to enhance students’ capacity in their chosen majors, from mathematics to biology to engineering.

THE interplay between the arts and the sciences has always been central to human advancement, says Simoni, who became dean in 2011. She gives as examples Michelangelo’s Pieta, in the late 15th century—which drew on the sculptor’s intensive study of human anatomy—and the sculptural span of the Brooklyn Bridge in the 19th century, which rose from John Roebling’s mathematics.

“Both exist and may be regarded as a thing of beauty, a historical artifact that epitomizes the pinnacle of creativity and human expression at a moment in time,” she says. “Art is a vehicle for discovery. It may be in understanding and employing a new methodology, expanding the imagination through ideation, or even about persistence when the way forward is unknown.”

Art_X learning opportunities are now being introduced throughout the curriculum, from interdisciplinary lectures at EMPAC and the Center for Biotechnology and Interdisciplinary Studies to incorporating design considerations into engineering courses.

WHEN EMPAC OPENED ITS doors in the autumn of 2008, the soaring building was celebrated as an interdisciplinary laboratory of sound and visual media. Rensselaer had long been renowned for the nation’s first program in electronic arts—including computer music—adding a Ph.D. program in 2007 to the existing MFA program. The experimental research and performance center, complete with the main stage, a theater, and labs, was designed to facilitate breakthroughs in these new media—while inviting use of its vanguard technologies for visualization and other experiments from researchers on campus and beyond.

Though the building arced skyward with the 1,200-seat concert hall at its center, Rensselaer did not yet offer performance ensembles for credit. Music has flourished on campus for decades, but most classical, jazz, rock, and other performance opportunities were the province of faculty-student collaborations and student clubs. Many of the clubs were formed through the student-run Rensselaer Music Association (RMA), which was formed in the early 1990s. During the ‘90s, when budgets were tight, says DeMaison, the group kept opportunities for performance alive.

“The Rensselaer Music Association bulked up its efforts to keep music opportunities available to students,” he says. “The orchestra today would not exist if that had not happened.”

That the RMA thrived during those lean years demonstrates that, for many students, music is a natural entrée to the intersection of art and science.

“We have a lot of these students already happily living between the left and right brain—what I’m calling the sweet spot,” says Simoni. “They might have studied piano for a number of years, and they come here and still want to keep up their music.”

Simoni herself inhabits that “sweet spot.” As a technologically
savvy composer, arts administrator, pianist, and music theorist, she understood Rensselaer needed a 21st-century music program to underpin and interact with the experimental new media.

She began by investigating the existing Rensselaer music culture, supported by faculty with wide-ranging interests and expertise. In addition to Bahn, who also has formal training in Hindustani music and the sitar, music-related faculty include Professor Michael Century, a renowned composer who studied with Nadia Boulanger in Paris and is also a jazz pianist, accordionist, and critical theorist who is leading the effort to seek accreditation for the new degree; Associate Professor Tomie Hahn, an ethnomusicologist with expertise in Japanese culture; Assistant Professor Robert Hamilton, who specializes in gaming and live electronics; Professor of Practice Eddie Ade Knowles, who specializes in African, Afro-Cuban, and New World percussion; and Professor of Practice Pauline Oliveros, an internationally renowned composer and founder of the Deep Listening Institute.

Simoni discovered thriving faculty-student musical collaborations, such as an Afro-Cuban percussion group run off-campus by Knowles. While serving as vice president for student life, Knowles also taught a popular course, Introduction to Afro-Cuban Percussion, from 2000 to 2011. When students and graduates pressed Knowles for more advanced opportunities, he decided to create a group, Ensemble Congeros.

Simoni asked him to bring the ensemble onto campus and offer it as a class—an endeavor complicated by the fact that alumni and alumnae were involved and the group had begun to perform professionally. Knowles instead agreed to develop a new course, The Roots of Africa Music Ensemble, for credit, along with two sections of the introductory course.

When DeMaison was hired in 2013, he brought the Rensselaer Orchestra and the Concert Choir forward to be offered as classes, added in a Chamber Ensemble course that could accommodate various iterations of smaller groups, and began developing and conducting a concert series each semester.

“Having an orchestra and a choir and a chamber program that are functioning at a high level is really important for letting people know that we take all of this seriously,” says DeMaison. “In a way it’s a flagship endeavor, but it’s actually just sort of to the side of the focus. When the Bachelor of Science in Music launches, the hope is that it will become something unique in the field—people will seek it out as a non-conservatory, technologically focused program.”

For students like violinist and physics major Weilu Shen, the ensembles have been more than that—providing a welcome chance to clear their minds amid heavy course loads.

“It’s been the highlight of my time here, as much as I love physics,” says Shen, who is graduating in May. “I guess for some people it’s easy to get caught up in problem sets and the different courses at RPI, but I think in order to be really good at something, you need to be able to gain perspective by being able to step out of that zone.”

Sophomore flutist and chemical engineering major Jacob Walker agrees. “It’s not hard to fit in to my schedule because it is actually a reprieve from everything else,” he says. “I have hours of classes every day where I have to, frankly, do math for long periods
of time, which is a lot of brain power. Orchestra is two hours of work with other people to create something together.”

Shen describes as “exciting” the process of putting together a symphony. “The notes aren’t always hard to play, but putting it together is,” she says. “I am constantly amazed by how we put things together in rehearsal.”

As DeMaison teaches his students how their individual parts and phrasings fit into a symphony, Knowles teaches his students all parts of the rhythm of creating a percussion piece.

“Students come to my course with no prior knowledge of folkloric African and Afro-Cuban music,” says Knowles. “Clave, cowbell, shekere, drums—in my course, you’ve got to learn all of the instruments and all of the music. It is always very dynamic in terms of people being challenged to learn all of the rhythms and all of the instrumental parts.”

The learning experience of contributing one part to a musical whole is one of the cognitive benefits of playing music, particularly for students who will find themselves in what Simoni calls a “trans-disciplinary” field such as biomedical engineering.

**THE ENSEMBLES ARE** only the beginning, however, of how Rensselaer students can participate in the creative and collaborative possibilities of music making.

“We have a very active undergraduate music culture,” says Bahn. “Most are not arts majors. But they might have played an instrument in high school ensembles, formed their own bands, or worked in their own home studios. At Rensselaer, they now might want to join ensembles, form new bands, make music on their laptop, or try new things out with the technologies that surround them.”

Bahn takes time from his work advising MFA and Ph.D. candidates, his own composition, invention, and research, and his sitar practice and performance, to offer a new course to undergraduates called **Music and Sound**.

The course ranges from the physics of sound to western classical music theory, world musical cultures, and musical technologies. It also introduces students to the myriad music opportunities available on campus, including at EMPAC. Through this exposure, Bahn helps broaden students’ concepts of what music is, how it might be made, and how they might get involved.

Approximately 60 students have taken the course per semester, divided almost evenly, Bahn says, between those going on to a minor in music or a major in electronic arts, gaming and simulation studies, or electronic media arts and communication, and those who are majoring in other disciplines. That latter half, says Bahn, come from schools all across campus. At the end of the course, students are expected to compose a musical composition according to their background and interests.

“Students in the orchestra could try their hand at writing a string quartet that they can play with their friends, or members of an a cappella group can arrange a vocal composition,” says Bahn. “Many of the students might have a mathematics or science or economics background and have never made music, so we think about, ‘What is their expertise and how can sound enhance their interests?’”
THE MOST EXCITING AND BOUNDARY-BREAKING COMPOSITION AND INVENTION BY FACULTY AND STUDENTS AT RENSSELAER STILL RELIES ON MATH—THROUGH COMPUTER CODING.

One example he gives is “sonifying” data, such as biological data or real-time stock market data. “The goal is to help students find their voice and get their feet wet at trying to be creative with the possibilities of music and sound in their work and lives.”

In a way, sonifying data is not far removed from the earliest concepts of music. The ancient Greeks, or Pythagoreans, treated music as a sonic expression of mathematics, including ratios and proportions. Though, as with mathematics and science, musical structures have evolved, bent, and stretched over the ensuing millennia, certain ratios identified in the Pythagorean curriculum—the fifth, fourth, and major and minor thirds—form the basis of chords familiar to music from Gabrieli to the Rolling Stones.

The most exciting and boundary-breaking composition and invention by faculty and students at Rensselaer still relies on math—through computer coding.

“The intersection of music composition and computer science gave rise to algorithmic composition,” says Simoni.

“Musical traditions and practices,” says Bahn, “are now extended through computer-generated sounds, computer-aided composition, creative coding, and new possibilities of interaction and musical integration into games.”

Many of the HASS faculty participate in an international conference devoted to research in human-computer interaction applied to musical instruments, called New Instruments for Musical Expression (NIME). Instrument developers apply new technologies ranging from embedded micro-controllers and sensors in traditional instruments to the development of musical robots that perform with live musicians. Both Bahn and Simoni have recently experimented with embedded sensors in instruments—in Bahn’s case, his sitar, and in Simoni’s, a violin and cello enhanced by Hot Hand™ technology worn by the performers as a bracelet—which tracks the performer’s movements and uses the data to generate live accompaniment and alter the sound of the instrument in real time.

Students and faculty even pursue development of the ways in which sounds and music can move through space in performance. Composers develop 3-D audio algorithms to make the location and perception of sounds key—and expanded—features of musical composition, and utilize the technologies at EMPAC, such as computer-controlled multi-speaker arrays, to realize them.

But even computer-generated music can require the collaboration of human beings—in the form of an orchestra, for example. Electronic arts Ph.D. candidate Kelly Michael Fox is one of two graduate students who have tested and premiered computer-generated compositions with the Rensselaer Orchestra. Rather than developing a fixed piece of music, he codes a composition that will set a boundary around a “character or tone or idea the music inhabits.”

“It’s a song, but it’s composed within a certain realm of possibilities,” Fox says. “It won’t be the same every time, but it will be recognizable.”

When Fox runs his code with an orchestra, through four sets of screens, it produces a new score within that boundary each time, which the musicians then perform by sight-reading.

“My first attempt was an experiment: Can I really do this for orchestra?” says Fox. “The players took it very seriously.”

The project, which DeMaison calls a “workshop for composers,” signaled the emerging range of Rensselaer’s music education, far beyond what a traditional conservatory or music department might offer. The Rensselaer Orchestra performed Fox’s full piece twice, giving him the chance to iron out glitches while exposing the student performers to new worlds of composition.

AS THE MUSIC PROGRAMS expand, the entire campus community will experience more sophisticated interdisciplinary musical experiments—and suddenly algorithmic composition can help illuminate the laws of nature. One example was Fox’s collaboration in 2014 with visual media MFA candidate Raven Kwok on a light and sound-based environment called “Algorithmic Menagerie” in an EMPAC studio. Using algorithms to create light-displays of “creatures” with dynamic cellular structures, the work, still available to view on the website Vimeo, is a feat of geometry that helps demonstrate basic structures of biology.

Projected onto a screen and the floor, moving within a bendable 3-D grid of light, the amoeba-like creatures sprawl, spin, and spawn, accompanied by electronic sounds coded to respond to their ever-changing shapes and relationships. The sound is new and yet somehow deeply recognizable as correlating to the visual display because both sight and sound are derived from the same mathematics.

“You could imagine writing down a piece of music, but you don’t understand it until you actually hear it,” says clarinetist Steven Tignor, a dual major in physics and chemistry in his junior year. “In just the same way I feel you can’t just write a physics equation down—you have to see it. You have to have some sort of visualization.”

Yet perhaps the most compelling feature of the installation—as of any piece of great music—is its beauty. That, in turn, can inspire total absorption: a gateway to learning, making connections, and creating.

Jacob Walker expresses it when he compares the experience of playing in an orchestra with his initial discovery of chemistry.

“When I was in high school, I took my first chemistry class. I loved seeing how everything fits together and how the universe was
created, and how these little tiny molecules could have such a big effect on what goes on in our lives,” he says.

“MANY TIMES PEOPLE TALK about specific correlations between the arts and the sciences, such as how a certain design can benefit a certain technological development,” says Bahn. “But one very important thing about the arts is the practice—the focus and dedication it demands.”

The practice of music, he says, is one of the clearest examples of what the university terms “lifelong learning”—even for those who don’t choose music as their primary field of study.

For the students, the chance to perform at EMPAC seems to cement that commitment.

“Whenever we have rehearsal before a concert, I like to show up two hours beforehand and just practice and play in the space,” Tignor says. “I’m only here a short time. How can you pass that up? How can you not play in that space?”

DeMaison has seen the impression that the building makes on his students.

“When we go over to EMPAC, those rehearsals to me are the absolute pinnacle of joy,” he says. “You’re in this amazing space and you can feel their focus level go up. When you get to EMPAC nobody touches their phones—you look around the room and they’re all here, they’re just here, just trying to make the best music they can make.”

I’M ONLY HERE A SHORT TIME. HOW CAN YOU PASS THAT UP? HOW CAN YOU NOT PLAY IN THAT SPACE?  STEVEN TIGNOR
Thanks to efforts by Rensselaer and others, alumni and alumnae are putting down roots in Troy.
When the founders of eight-year-old Appenda—a software development company drawing millions of dollars in venture capital and clients such as Boeing—began considering a move from suburban Saratoga County in 2014, it was company employees who lived in Troy who lobbied for the move here.

Abe Sultan ’03, vice president of engineering at Appenda, was wary. As a Rensselaer student, the city didn’t impress him and he spent little time downtown.

After an alumni event at Rensselaer, Sultan says some Appenda co-workers convinced him to meet for dinner. “I was reluctant, but agreed to meet,” Sultan recalls. “We went to [restaurants] Bacchus and the Lucas Confectionery and, honestly, they changed my thinking entirely. I couldn’t believe places like this were popping up in Troy.”
Now, Apprenda occupies 33,000 square feet of Hedley Park Place on River Street. The Hudson River view, free parking, proximity to the interstate, and the great lineup of restaurants in the city were factors in moving from the suburban Clifton Park office park, says Sultan, who co-founded the booming software development company in 2007 with Sinclair Schuller '04.

“Part of our view is to the river and part is to RPI,” explains Sultan, who studied computer science and math. “We have six interns right now and we expect to use internships as a recruiting tool. We want to draw RPI students and it was difficult to do that from Clifton Park.”

Sultan is now among the city’s most prominent boosters. He enjoys showing guests Appenda’s riverfront offices equipped with a gym and locker room and pointing out that the company orders lunch from a different restaurant every Friday. But as a Rensselaer student, he did not spend much time off campus.

“Troy was not the place it is today,” says Sultan. “Now, I think it would be hard for us to replicate what we have here anyplace else.”

IN DOWNTOWN TROY, innovative businesses and organizations are increasingly taking their place alongside new specialty shops and trendy restaurants and bars like Bacchus and Lucas. There is a vibrant arts culture, thriving Farmers Market, and dozens of festivals and events held throughout the year. Victorian-era buildings that 20 years ago stood as crumbling eyesores in a city on the verge of bankruptcy are now sought after for offices, housing, and retail.

A one-time leader of American industry, the city is gaining traction as an intellectual and creative hub. And Rensselaer is playing a significant role. In the past decade, the Institute has financed and renovated high-profile properties, while engaging its students in preservation and neighborhood initiatives.

Now, a new generation of Rensselaer graduates, along with faculty, is making an imprint in enterprises that include engineering, management, economic development, architecture, technology, energy, manufacturing, real estate, and media arts.

The businesses they spearhead range from software company Appenda to the Sanctuary for Independent Media, a center offering an expansive collection of arts and community programs that has taken root in Troy’s north central neighborhood.

As high-end shops and businesses prosper in the center of Troy, the Sanctuary is carving out a community that brings families in the poor neighborhood into contact with Rensselaer professors and alumni, along with artists and organizers from throughout the region.

“The Sanctuary owns seven lots on one block a five-minute drive from RPI in one of the most economically disadvantaged neighborhoods in New York state,” says Branda Miller, a Rensselaer professor of media arts and a Sanctuary co-founder. “It is offering innovative creative projects in the shadows of Rensselaer, and is founded by the professors and alumni of the arts department.”

AT FOURTH AND CONGRESS STREETS, where police were once called frequently to break up fights, Kevin Blodgett ’02 is converting the old Trojan Hardware and adjacent buildings into a hip new restaurant, brew pub, market, home goods boutique, and apartments.

“In an article in The New York Times that featured five Troy businesses, two were ours,” says Blodgett, who owns one, The Shop, and leases space to the other, Rare Form Brewing Co. The two businesses are often filled with hipsters looking to try a unique menu or specialty brew. “It still gives me goosebumps after all the hard work we did to see it in The New York Times.”

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Across the river in Watervliet, Thomas Rossi ’04 and John Blackburn ’05 have transformed a 100-year-old former ladder factory into The Tilley Lofts, 62 apartments outfitted with geothermal wells and other energy-saving technology that have earned the building LEED Platinum status. In Troy, Rossi and Blackburn, proprietors of Redburn Development, have completed the 21-unit River Street Lofts and will soon redevelop an empty school in the industrial north central neighborhood.

After graduating from Rensselaer, Rossi and Blackburn launched the hugely successful BullEx Digital Safety, which makes fire extinguisher training systems and firefighting training centers. In 2012 they sold the company and as they considered their next venture, became impressed by Troy’s growing Farmers Market, new restaurants, and rich architectural stock.

Today, they apply their technical education to building environmentally sustainable housing that doesn’t price out most renters.

“It’s obvious we need to be more sustainable as a nation,” notes Rossi, who earned his B.S. and M.S. in mechanical engineering. “And that doesn’t have to make a project too expensive. We can have upscale, high-tech apartments for reasonable prices.”

CENTRAL TO MANY significant projects downtown is architect and real estate developer David Bryce ’86, who studied architecture at Rensselaer.

Bryce, a Troy native, began purchasing important but dilapidated buildings in the late 1990s, and procuring grants and financing to renovate them. He, with his children and staff, also did a good amount of the demolition, restoration, and design work. He says it was both opportunity and civic duty that had motivated him.

“I acquired the buildings and then found that they were in bad shape—my due diligence had stopped at the front door,” he explains. “It was more about making a neighborhood. We started by getting control, then found the tenants, then designed the space to fit the tenants’ needs.”

Once he purchased the Troy Atrium, the New York State Department of Labor renovated the space into offices for hundreds of employees. Bryce also purchased, renovated, and repopulated the Frear Building, the Market Block, and the Quackenbush Building, projects that aligned him with other Rensselaer graduates.

He and educational video game developer Tobi Saulnier ’84 renovated a decrepit ballroom in the Market Block building where, four years ago, Saulnier relocated her company, 1st Playable Productions.

For both alumni, the location, just down the hill from the campus, was a factor. Saulnier notes, for example, that 1st Playable was launched on campus in the Incubator and maintains strong ties to the school.

In 2006, when Saulnier moved her company downtown, there were not a lot of creative businesses. Troy sponsored fewer events and upkeep of the streets was haphazard. But the city had a feel she appreciated.

“TROY WAS NOT THE PLACE IT IS TODAY. NOW, I THINK IT WOULD BE HARD FOR US TO REPLICATE WHAT WE HAVE HERE ANYPLACE ELSE.” Abe Sultan ’03
“We used to have monthly coffee hours at which the small companies would gather and share news and challenges,” she recalls. “It was already a great place to locate.”

Today, Saulnier points to the growing number of game developers in Troy and envisions a vibrant “tech village” emerging there. But given the lack of amenities a decade ago, she says she might not have considered a building downtown if the school had not paved the way.

“The city did not yet have a concerted effort to recruit companies—but the RPI Incubator team did,” she notes.

“Rensselaer started in a single building. The city was rich and powerful and gave it financial support,” says Joseph Fama ’70, an architect and former executive director of the Troy Architectural Program (TAP), a nonprofit preservation and neighborhood advocacy organization.

Typical of American universities, Rensselaer expanded away from the city center in order to establish its own identity. By the mid-20th century, the country in general had turned away from its cities. The federal dollars went to highway construction and the GI Bill spawned suburban housing developments.

Rensselaer students largely tended to think of Troy as “down the hill,” Fama says. But the Institution maintained a strong connection to its home city. Architecture students and faculty, for instance, established TAP in 1969.

Rensselaer and various nonprofit organizations like TAP have a long record of collaborations. Barbara Nelson ’80, recently named TAP executive director, taught a community design course in the School of Architecture that invited students to work with neighborhood associations.

Today, she says, as Troy becomes a more attractive destination to live and work in, the school and city have only become more intertwined.

“RPI is now one of the top five employers in the county. With nearly 2,000 employees, a high percent are city residents, and Troy’s downtown renaissance has influenced that percentage upward,” says Nelson. “This causes more faculty and administrators to

“IT IS VERY APPROPRIATE THAT WE ARE NOW A TENANT IN THESE BEAUTIFULLY RESTORED, HISTORIC LANDMARKS.” Claude Rounds

“As an extended part of the Incubator, we enjoyed bus discounts and access to campus resources such as the Mueller Center, which were very important to employees.”

WHEN RENSSELAER WAS FOUNDED IN 1824, it was a small institution in one of the nation’s wealthiest cities. Troy boomed as a port and manufacturer of textiles and other goods.

As Troy’s manufacturing base faded and factories closed, families moved, leaving outside investors to buy up empty buildings.

Rensselaer students largely tended to think of Troy as “down the hill,” Fama says. But the Institution maintained a strong connection to its home city. Architecture students and faculty, for instance, established TAP in 1969. Rensselaer and various nonprofit organizations like TAP have a long record of collaborations. Barbara Nelson ’80, be rooted in the community. They tend to direct more research and service work by students right here in the city.”

Rensselaer has also devoted significant funds to revitalizing Troy. In the last 15 years, Nelson says, the school spent more than $7 million in streetscape and utility work as well as homebuyer incentive and renovation grants. The downtown commercial real estate market has benefited from the relocation of roughly 100,000 square feet of administrative space off campus.
After renovating the Gurley Building to include laboratories and offices, for example, the Rensselaer Lighting Research Center opened there in 2000. Through partnerships with private developers, Rensselaer has built housing off campus, including the Howard N. Blitman, P.E. ’50 Residence Commons for undergraduates, and the College Suites at City Station complex for graduate students, who study up the hill on campus and eat and shop downtown.

And today, the school can take credit for restoring a key section of Troy’s center. After investing $1.5 million and a decade of work in stabilizing the old Proctor’s Theater and nearby Chasan Building, Rensselaer recently sold these high-profile buildings to a developer and is leasing back space in both buildings, alongside other prosperous organizations.

“It is very appropriate that we are now a tenant in these beautifully restored, historic landmarks,” says Claude Rounds, Rensselaer’s vice president for administration.

Fama notes, though, that full-scale revitalization has been slow to come to Troy. Even as individuals, community organizations, and Rensselaer saved so many buildings, there was simply not enough outside interest.

“Prior ‘revitalizations’ were almost all talk and damage control,” he says. “They were promoted as the beginning of the great turnaround but the climate around them was not appropriate.”

Now the climate has shifted. Young people, corporations, artists, families, and empty nesters favor cities, particularly those like Troy with history and a walkable downtown. This time, Fama and other stakeholders say, the revival goes beyond a hip new restaurant or a few headlines, because people from outside the city are coming to Troy.

And, thankfully, much of the architectural landscape that might have been lost has been stabilized and restored.

“Rensselaer is the biggest citizen in this wonderful redevelopment that’s going on,” Fama says.

Vic Christopher and Heather LaVine rehabbed a downtown building into a wine bar and named it the Lucas Confectionery, after a business that occupied the site in 1883. Around the corner is their new restaurant, Peck’s Arcade, a nod to the department store that opened on the site in 1883.

Tobi Saulnier ’84, who earned three degrees from Rensselaer, moved her video game development company, 1st Playable Productions, to the Market Block building in downtown Troy four years ago. Market Block was rehabbed by developer David Bryce ’86, who studied architecture at Rensselaer.

Kevin Blodgett ’02 moved back to Troy with an interest in rehabbing properties. He is re-inventing the former Trojan Hardware store, which now is home to The Shop, a bar serving upscale comfort food, and Rare Form Brewing, a startup craft brew company and tap room.

John Blackburn ’05 and Thomas Rossi ’04 founded Redburn Development to build affordable and environmentally sustainable housing. Their current project is an adaptive reuse and historic preservation of the School 1 building in Troy to create 28 market-rate apartments.
Celebrating Two Decades of Sisterhood
Sigma Delta Sorority marks their 20th anniversary at Rensselaer

April 2016 marked the 20th anniversary of the Sigma Delta Sorority at Rensselaer. It will be a memorable year for the group, as it represents two strong decades that the organization has been able to grow and develop at the Institute.

On April 12, 1996, Sigma Delta Sorority was founded as the first multicultural sorority on the Rensselaer campus. Many of the founders of Sigma Delta came to Rensselaer from outside the United States. Their vision was to grow the sorority into a student and alumnae community in the same way that many historic fraternal organizations had succeeded in doing.

Founded in the midst of the 1990s and the rise of the Internet and modern globalization, the organization was launched by 10 young women with a mission of providing a welcoming environment for women who identified, appreciated, and embraced their own cultures, as well as those of others. Their purpose was to promote basic values such as honesty, compassion, self-pride, professionalism, and hard work among women. Women who share the values of Sigma Delta are encouraged to join the sorority, regardless of their background.

This sisterhood is comprised of women who have, throughout their careers at Rensselaer, served as leaders in organizations such as Phalanx, Order of Omega, Panhel Council, Society of Hispanic Professional Engineers, and the Society of Women Engineers (SWE). They have received notable awards including the Simon Bolivar Leadership Award, Emily Roebling Scholarship, and the Founders Award of Excellence.

On an annual basis, Sigma Delta hosts Founding Week, where the sorority organizes several events to engage the community in helping domestic and international humanitarian causes, as well as “Nuestra Belleza,” a pageant displaying a performance from each participant’s traditional culture, a talent showcase, and a question-and-answer session centered on “How would you change the world?”

Congratulations to the actives and alumnae of Sigma Delta on their two decades of sisterhood! For more information about the 20th anniversary of Sigma Delta, contact Jessica Alvarado ’10 at alvarado.jessica0@gmail.com.
SEEKING NOMINATIONS FOR THE RENSSELAER ALUMNI HALL OF FAME

The nominations process has begun for the 2017 class of inductees into the Rensselaer Alumni Hall of Fame, which is designed to permanently preserve, celebrate, and widely communicate Rensselaer’s long and exceptional heritage. We invite you to submit the names of worthy alumni for consideration by June 3, 2016. Additional information, including the current members and a nomination form, is available at alumni.rpi.edu/hof.

GO RED! GO WHITE! GO GREEN!

Most alumni programs and services are advertised 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 events and benefits offered exclusively to Rensselaer alumni. Write to alumni_update@rpi.edu, or visit alumni.rpi.edu/gogreen with your email, social media user name, and updated contact information.

RAA VISA CREDIT CARD

The RAA Visa card is offered through a partnership with U.S. Bank. The card features no annual fee and your choice of benefits and rewards. A percentage of each purchase goes directly to support RAA programs. Visit alumni.rpi.edu/service for details.

WORLDWIDE TRAVEL PROGRAM

Visit exciting destinations with people who share your interests. Go to alumni.rpi.edu/travel for a listing of upcoming trips, or contact Michael Wellner ’64 at captmike46@aol.com or (212) 486-3064.

SUCCESS STORY

Alumna Among “Most Powerful Female Engineers”

In honor of National Engineers Week in February, Business Insider highlighted “26 of the most powerful female engineers in 2016.” Intel Corporation’s Sumita Basu, who earned her Ph.D. in chemical engineering from Rensselaer in 2002, is among those featured.

Basu is a strategist and technical assistant to the Intel general manager, running the technical group for client computing. “One of Basu’s most impressive accomplishments is that she invented the world’s first lead-free patterning process, allowing Intel to become the first chip company in the world to limit the use of that toxic substance in its manufacturing processes,” the article stated.

Basu was also selected as an “emerging leader” by the Society of Women Engineers (SWE) in 2015. “These are the role models who lead by example and inspire the current and next generation. We are honored to have them as part of our mission,” said Colleen Layman, president of SWE.

Rensselaer is proud to count Basu among its more than 100,000 alumni and alumnae who truly are changing the world!

2016

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Amazing!!! Still writing a column at almost 98! Sad News: Earl Ray Lewis Jr. (BIE), age 97, passed away Oct. 17, 2015. Profession, engineer; former director of the Glass Packaging Institute. He was dedicated to many charitable causes. I corresponded with Earl for a number of years, but not lately as he became busy with other projects. Earl spent his whole career as “top dog” in the glass industry.

Sad News will probably continue to be the first thing in my column, as most 1939 graduates are over 98 and not that many are left or have stopped communicating.

I still communicate with Dick Trepp, who keeps me informed about his being (not too well), but he’s still working on clocks and attending meetings pertaining to clock associations.

Once in a while I hear from Jay Miller in Seattle. He still stays where he lives in an extended care facility and keeps his mind busy with various types of puzzles.

Now for a few predictions: Our main problem in the future is fresh water! All over the world the aquifers (underground water) are dropping at an alarming rate and reducing the kinds of crops some farmers can grow (only those that depend on rain). Pumping water from underground is using about 15 percent of our total electricity, and the reduction of fresh water may cause famine and war over food.

Another one of my present hobbies is space. Although the universe is less than 14 billion light years old, its diameter is by some estimates 94 billion light years across and still expanding.

I have been writing this column for almost 15 years and will continue as long as I am able!

Send news to: Lou Shornick ’39, 108 Royal Garden Terrace, Madison, MS 39110-7637; loushori@gmail.com; website: www.loushormick.com

Representing the Class of ’45 celebrating the 70th Reunion, Ed Oertel and I walked arm in arm with President Jackson to the 50-yard line with the Class of ’65 alumni for their induction into the 50 Year Club. It really hit us that it really had been 70 years (+) since we graduated. RPI won the football game! That was a nice climax of our 70 Class Reunion. We had attended a “live” class on campus studying thermodynamics, a lab where they were working on projects to “make a product” (including use of “3-D” printing), a presentation by President Jackson on the State of the Institute, a very nice dinner for the alumni from ’45 and ’50, where Jack Westbrook and his son, Ed, and Charlotte Oertel, Wayne, my son, and I enjoyed our Class of ’45 gathering, a panel on the future of outer space with President Jackson, NASA Administrator Charles Bolden, and our own RPI astronaut Reid Wiseman ’97. We followed that by visiting the RPI model train layout to see how they have developed a scale model of the Troy area (outstanding and worth a visit), then we rode through the Troy area with a stop at the Approach to see the changes. Then we had to go watch the hockey team play a Canadian team from St. Thomas University. It went into overtime and St. Thomas won, but there was a good crowd and an exciting game. There were all kinds of events going on all the time, so you had to make your few choices that you would have time to attend. Oh yes, the foliage in the trees painted a beautiful backdrop everywhere you went! It was a great time for the Reunion.

It was great to get the following career story from Robert (Bob) Nagel (Chem): “It’s been a long time since I have been in contact with anyone from our Class of 1945. Last time I was up at the campus was for the 50th Reunion.

“I was a Chem.E. in the V-12 program. Two of my roommates were Al Crapo and Pepper Crenan. Graduated in August 1944. By the time I finished midshipmen school, received my commission, and got out to the Pacific area, the war with Japan was just about over. The following is about some interesting duty in post-war Japan before discharge.

“My ‘ride’ has been full of all sorts of memorable experiences, and I have also learned that I have never met anyone who has not had meaningful experiences in their lives. One that may have some interest for others, has to do with my being assigned for duty in Nagasaki, Japan, by the U.S. Navy, only a few months after the second atomic bomb was dropped there, that brought an end to our war with Japan. After the war ended there were many Japanese troops, and some families stranded all over the areas they had occupied, and a plan was developed to bring them back to Japan. There were many empty ‘Victory’ and ‘Liberty’ ships, sitting idle after being so busy ferrying cargo all over the Pacific theater. The plan was for the Navy to ‘loan’ those ships to the Japanese government, who would find ways to refit those cargo ships, to be used to bring all those Japanese back to the home islands. The refurbishing task was given to the Mitsubishi shipyard in Nagasaki. That very large shipyard had received some damage that very large shipyard had received some damage...
Neal Barton '58 and his wife, Carolyn, dropped the puck at the fourth annual Mayor’s Cup hockey game at the Times Union Center, January 23. The Engineers beat Union College, 5-2.
by conventional aerial bombing during the war, but was relatively untouched by the atomic bomb blast. That bomb had exploded some distance away from the shipyard, in a shallow valley area, which was surrounded on either side, and toward the shipyard location, by some low hills. A portion of the city of Nagasaki was on the other side of that hilly area, and the blast which was fearsome in the valley area, and in the valley's upper end, was resisted by the hilly terrain, and certain areas were spared.

“I, an ensign at the time, another engineer, a Lt. j.g., and a petty officer, were assigned to be the liaison between the Navy and the Mitsubishi Co. We were sent some spare parts by the Navy, and set up a system to manage distribution as needed. That was quite an experience, especially in getting to know the Japanese people working in our office. Since no one had warned us about possible contamination processes, I took the opportunity of walking around the devastated area looking at the skeletons of steel structures trying to guess where ground zero was by the angles of the skewed steel girders, etc. It was quite an experience for a 21-year-old. I remember that I had nightmares for years as I pictured a mushroom cloud rising over Manhattan Island.

“After the war I went to Cornell Grad School looking for a master's in Chem.Eng., but left before completion as I began to make decisions about a professional life that did not include academia or corporate careers. I was interested in the field of protective coatings, started taking courses in that field, then jobs in various companies to get the experience to prepare me to start up my own business as an entrepreneur.

“Really liked starting up a new enterprise, which was not well capitalized, so had a slow start, but we grew and eventually prospered. I was the CEO, but after about 20 years, began to lose my excitement with the world of business, and sold my interest in my business. I soon realized that being retired at age 47 was much too early, became interested in the field of human behavior, took some training in organization development, and did some consulting. I decided that I needed to be better trained in the field of human behavior, and took a master's in social work, with a major in community development. During that time, I discovered that I was more interested in clinical work. And so became a psychotherapist, working with individuals, families, and groups.

“I continued that work, as staff in a hospital and clinic setting, as well as having a private practice. It was all very different from the world of business, exciting, challenging, and often frustrating. I retired from the hospital setting in '86, continued my private practice in '91, but still had the yen to stay productive. By that time, my wife and I had become ‘snow birds,' half the year in NY, and half in Florida. Two years ago, we moved permanently to Florida. I have still done work, on a pro bono basis, as a therapist, but am finally running out of steam.”

As Bob says, “I've never met anyone who has not had meaningful experiences in their lives,” which should stimulate you to come forth with your interesting career story too! Email or mail it to me, at the addresses below.

Send news to: Herb Asbury '45, 4435 Foxenwood Lane, Santa Maria, CA 93455-6718; asburyh@aol.com

46 70th Reunion: Oct. 6-9, 2016

Wouldn't it be cool if we could get a few of us together for our 70th class reunion! It will be October 6-9, 2016, and I will try to make it. My son Nick (Class of '79) plans to help and perhaps make arrangements for some decorations and wheels for the parade of classes. He also plans to recruit some honorary Class of '46 members, so we ought to have a full table.

So get in touch with me and the 'Tute. We may not set a record for old-timers but we will make a splash and have fun doing it.

Send news to: Ed Miller ’46, Apt. 113, Belltrone Living Center, 6 Winners Circle, Albany, NY 12205; milleren4300@gmail.com

49 Send news to: Fred Grob ’49, 4 Albatross Lane, Smithtown, NY 11787; fredgro478@gmail.com

50 Send news to: Herbert Kee ’50, 354 Broome Street, Apt. 6D, New York, NY 10013-5458; bkee9988@gmail.com

51 65th Reunion: Oct. 6-9, 2016

Thomas Bellatty passed away in April 2014. Tom was a retired civil engineer for the NY/NJ Port Authority. He was the co-captain of the 1951 RPI hockey team and an active participant in the annual RPI alumni hockey game for more than 60 years.

Send news to: Fred Williamson ’51, 23 Briarwood Drive, Old Saybrook, CT 06435; john_f_williamson@comcast.net

52 Mark your calendars; our 65th Reunion is about a year and a half away. The reunion planning committee will be working hard to make this a memorable reunion, so stay tuned. If you want updates from the committee, C.J. Nager needs your email addresses. He can be reached at cjager@gmail.com.

Don Husmann (B.E.E.) and his wife, Ann, have had enough of New England winters, so in December 2013, they gave away their snow shovels, sold their house, and moved to Jacksonville, Fla. Their transition from a four-bedroom house to a one-bedroom apartment was challenging, but doable. Their timing was exquisite since they missed the huge amount of snow which fell in Massachusetts during two consecutive winters. Don reports that despite his careful observations, he has not seen a single snowflake in Jacksonville.

Don picked up his volunteer tax preparation activities where he had left off in Massachusetts. His latest effort, from January to mid-April, takes place at the Jacksonville Naval Air Station. In addition, he continues actively in racquetball and table tennis. In July 2015, he participated in the national senior games, a.k.a. the Senior Olympics, in Minneapolis, where he took home two gold medals—racquetball singles and doubles. The best he could do in table tennis was a fifth-place ribbon. Way to go, Don.

In November the Husmanns were to move again, this time to Fleet Landing, a retirement community located just south of the Mayport Naval Station near the Atlantic coast. It is a continuing care facility, which ensures long-term care in addition to pleasant living conditions. They are really happy in Florida. Nonetheless, they visit New England and Long Island frequently, visiting relatives. Hopefully they will be able to get to our 65th in 2017.

Dave Dobson (B.E.E.) was the subject of the first-ever historic interview conducted by the Aerospace and Electronic Systems Society (AESS). Dave was the administrative editor for AESS publications for over 40 years. This first-ever historic interview was published in the IEEE Aerospace and Electronic Systems Magazine, Volume 30, Number 6, June 2015. It is too long to repeat here since it is eight pages long, but you should be able to view it in a technical library.

Dave enlisted in the Army in 1946 to avoid the draft when he was 17 and just out of high school. He wound up in the infantry and after basic training was sent to Korea to help move the Japanese occupiers out of Korea. He had applied to RPI before he enlisted, so when his hitch was up he went to RPI and got a degree in electrical engineering. To avoid being recalled and sent to Korea in 1950, he agreed to take ROTC and agreed to go back on active duty for a two-year hitch after he graduated, and was deferred until after graduation. The icing on the cake was the fact that ROTC had some pay every month, and adding that to his GI Bill helped him financially. After graduation he went back in the Army, this time as an officer, and was assigned to the Army Psychological Warfare Board at Fort Bragg. There are many interesting facts about this phase of his career, so get a copy of the magazine article and read all about it. If you can’t find the story and want more detail, get in touch with me.

Jim Schnabel (B.E.E.) notified me that George Sirilla (B.E.M.E.) passed away Oct. 28, 2015, in North Bethesda, Md. George is survived by his wife, Florianne, of 47 years, and his sons Michael and Joseph Sirilla, and nine grandchildren.

George served in the U.S. Army before attending RPI. Upon graduation with a degree in mechanical engineering, he settled in Washington, D.C., and worked as a patent examiner in the U.S. Patent Office. He enrolled in evening classes at Georgetown Law School, with the intention of becoming a patent attorney. George roomed with Frank Keegan (B.Ch.E.) and both of them attended Georgetown. He worked for Cushman, Darby and Cushman, a highly respected patent law firm, and became a partner following graduation from law school.

George felt called to become a Jesuit priest and entered the Society of Jesus Seminary in Wernersville, Pa., in 1960. Shortly before taking his final
The restored School #5 in Knox, N.Y., originally built in the late 1890s, is now on the National Register of Historic Places. This book includes information about the restoration, a summary of interviews with former students, and a transcript of school board minutes, 1824-1905, along with a description of contemporary historic events that take place in the schoolhouse.

Daniel Driscoll, M.E.‘64, is a retired acoustical engineer with the New York State Public Service Commission and the DOE.
and South Africa (check your map). Up at 5, land cruise looking for big five animals, 9:30 coffee at open spot on lookout for lions and other predators, back to camp at noon. Walking trips (with protection) in the afternoon, tea at 3, and evening game drive. They were in four bush camps and visited the magnificent Victoria Falls. They even took a helicopter scenic flight. The trip ended in Cape Town, South Africa, visiting Nelson Mandela’s prison for 18 years on Robben Island. Dick has recently signed up for a Big Sur marathon and finally a 100-mile sea kayak adventure in the Sea of Cortez (I am exhausted). One son is a lawyer with Electronic Frontier Foundation and another son is a CPA working in real estate, operating Air B&Bs, and does international election monitoring.

My adult teaching at Westchester Community College (WCC), for the last eight years, included a superb specialist in drones, Michael Wellner ’64. Others taught local and geopolitics, senior health, a CPA working in real estate, operating Air B&Bs, and does international election monitoring.

Our recent alumni weekend was as usual a great success and included a presentation from our own NASA Astronaut, Reid Wiseman ’97, who is back on Earth after six months in space. Last year he was on the space station and communicated with us via a big screen. Also on stage was Charles F. Bolden (‘88 Hon.), chief NASA administrator, and President Shirley Ann Jackson. The Q&A was outstanding. Next year, plan to attend the alumni weekend. It is very stimulating and great fun.

Send news to: Arthur Goldstein ’53, 940 Sylvan Lane, Mamaroneck, NY 10543; aguent@aol.com

60th Reunion: At an age where being anywhere is great, going to our 60th Reunion in October was a particular treat. In addition to football, hockey, 50 Year Club dinner, president’s address, and many other events, Marcia and I especially enjoyed the NASA program featuring President Jackson, NASA Administrator Charles Bolden, and astronaut Reid Wiseman ’97.

Thanks to Joe Pilaro for providing wine at our class dinner. Attending class members were Ted Baglin, Bob Beck, Bill Bernstein, Murray Bodin, Bob Boehringer, Tom Bolam, Bob Bozzone, Don Bunk, Phil Carroll, Don Finkelstein, Bill Ford, Jay Hamilton, Bill Herling, Chuck Hodges, Santiago Igleisas, Jim Ingle, Alex Ivanov, John Karatzou, Neil Krebs, David Levine, John Magadini, John Malanify, George McBride, Jim Murray, Martin Nachman, Joe Pilaro, Rick Setlowe, Don Sharrard, Ron Smith, Ned Spain, Bill Taubert, and yours truly. Let’s hang in there for a 65th!

Bob Archer enjoys making furniture, and when we spoke in December he was building a cabin for a full-length cheval tilt mirror. “I’m slowing down. What I used to do in one winter now sometimes takes two. And every once in a while I do a little destruction on my fingers.” After visiting all of the state capitals and most of the national parks, he and Nancy have sold their trailer, but they still volunteer at the Natchez Trace national park. Bob has a heart history involving four stents, and he keeps in shape by swimming a thousand yards each day. As I am also a lap swimmer this led to a discussion of distance and speed, with Bob’s conclusion, “We could probably have a fair race.” Read: equally slow. He had hoped to attend our 60th Reunion with Joe Buerk, but Joe’s knee surgery intervened, and Bob visited Joe in Hartford instead. “Joe is doing well now.”

Ted Baglin reports that he enjoys writing, “I missed my calling—journalism would have been a more appropriate career, but I don’t think I did too much damage in engineering. Nevertheless I’ve been very lucky and have enjoyed a really special life. Even now at age 86 I’m still able to continue doing many of my favorite activities such as skiing and scuba diving.”

Bill Bernstein says that he enjoyed our 60th Reunion. He and Joan attended the men’s foot- ball and the women’s hockey games. They spend winters in Florida and summers on Lake Winnipesaukee in NH, where they take their children and grandchildren out in their 33-foot boat. Bill also plays a lot of golf. “My wife wants me to work out. My problem with that is it’s boring.” He also plays duplicate bridge, but not with Joan. “It’s one way to keep the marriage.”

Rick Sedlowe visited me in Princeton in September, on his way to our 60th Reunion. Rick has written half a dozen novels as well as several plays, one of which involves Albert Einstein and Marilyn Monroe. A recent reading in Los Angeles featured Shelley Berman as Einstein. Rick arranged a private walking tour for several of us, visiting Princeton sites that had been frequented by Einstein and F. Scott Fitzgerald. The group topped it off by having lunch at the Institute for Advanced Study, Einstein’s working home from 1933 until his death in 1955. Einstein was much in evidence, but no traces of Marilyn turned up.

When Jim Shaughnessy attended RPI he lived right next door at St. Joseph’s Seminary, where his father was superintendent of buildings and grounds. “I just walked through a gate in the fence.” Jim’s career in civil engineering included the NY State Dept. of Transportation, teaching structural design for eight years at a community college, consulting on water and sewer projects, and finally director of environmental health for Rensselaer County. “I still do a little engineering” on projects to upgrade pump stations in Cohoes. Since retirement Jim has pursued a lifelong interest in railroads, publishing two history books and many magazine articles, and amassing a huge collection of photographs. When we spoke in December he was working on his quarterly article for Classic Trains magazine, this time covering West Side lines in Manhattan and the rerouting of freight patterns from Grand Central Station to Penn Station. Jim and Carol make frequent visits to Ireland. “We have dual citizenship. It’s fun to go to the short passport line.”
“My first work assignment following graduation from RPI was with the consulting engineering firm of Tippets-Abbett-McCarthy-Stratton in NYC. John Dunlap, former RPI registrar, introduced me to his TAMS colleague, Tom Fratar ’36, who graciously schooled me in the essential linkages between engineering, marketing, and finance. I spent 10 years at TAMS conducting economic feasibility studies for development projects around the world on behalf of numerous corporations and governmental agencies. Following a two-year stint in Malaysia, Tere and I returned to NYC where I joined the management consulting firms of Booz, Allen, and Hamilton and then, Knight, Gladeaux and Smith. While at KGS, I also returned to the University of Connecticut for my MBA degree and, thereafter, briefly taught marketing at the university. After KGS was acquired by Boeing Computer Services, my work venue shifted to Washington, D.C., where I spent five years conducting organization, management, and budgeting studies for a variety of federal agencies. Commuting from my home in Connecticut to Washington eventually convinced me, however, that it was time to stop consulting and get a real job. So Tere and I acquired a small outdoor advertising firm and moved to northeastern Pennsylvania. The business grew over the next 35 years to include advertising locations covering much of New Jersey and the Catskill region of NY. We sold the business in 2013, and are now in the process of moving to a cool apartment on the Hudson River overlooking the Tappan Zee Bridge. Over the years, we also developed an addiction to the collection of clocks, which is currently plaguing us. How does one move 30 grandfather clocks into an apartment on the Hudson River? Suggestions gratefully received!”

Charlie is our official class historian.

I gave John (Jack) Gilmore a call and he emailed back to me, “Jackie and I are retired in Aiken, S.C. We have three children, eight grandchildren, and two great-grandchildren. I spent 27 years in manufacturing, quality control, and safety positions in the man-made fiber industry. I retired in 2000 after working for 11 years in safety at the Savannah River Site in Aiken. I continued to compete in masters track & field until 2006. I am still involved in track as a volunteer coach at a local high school and a Junior Olympic club.”

I have been in touch with Bruce Laumeister about serving on the Reunion Committee. You may recall he was the person who arranged to have our yearbook picture placed on a T-shirt at an earlier reunion. He also hosted a great dinner for the class at his Bennington, Vt., facility during our 50th Reunion. He updated me on his career as follows: “I lived in Rexford for 12 years while I headed up all the GE electric vehicles research and built the Elec-Trak battery-powered, small tractor business in a Scotia depot building. I left to run J.T. Baker Chemical in New Jersey when they sold my baby to American Motors. After Baker, I turned around American Optical so it could be sold and did the same with ICC Primex in New Jersey. By then my contracts yielded enough money to go to Vermont to build my own five-company ‘empire,’ two of which I still operate.”

In 1968 Bruce founded Better Neighborhoods Inc., a Schenectady nonprofit housing corporation buying and rehabilitating derelict Hamilton Hill two-family housing to FHA standards, then selling the houses to low-income families who were made credit-worthy by his team of GE financial trainees. “We did over 110 homes without one cent of government money. BNI received the award from Nixon in 1970 as the most successful 501c3 housing corporation in the nation. It still functions today, but with HUD money, so I’m glad that I don’t run it now. GE gave me the first Chairman’s Public Service Award as a result and for my two terms on the Common Cause national governing board.”

Bruce also worked on an “experimental Delta car (Developmental Electric TOWN Auto), notice the emphasis on town, which the Big Three makers have finally recognized as the ideal mission for EVs. My 1968 DELTA was the first American hatchback and had more range than the CHEVY Volt or Nissan Leaf, built over 40 years later.

“I had to shut down my most successful business last year as the digital revolution killed the photo film processing industry that I operated in Vermont for the last 37 years. Sadly, my arthritis forced me to retire from Porsche racing last year—after 56 years experiencing tracks like Lime Rock, Sebring, Watkins Glen, and Phoenix International.”

When I called Wes Moody to ask him to serve on the committee he updated me on his life. As mentioned in a recent alumni magazine, his wife of many years had died. He met a friend of his wife, whose husband had died, and after a brief courtship they were married in early 2015. Her name is Joan and she has seven grown children who keep Wes busy. He reports he is in good health.

I talked with Richard Schmidt and he sent me a summary of his experience, which will have to wait for a future issue. Likewise, a note from Walt Schoob.

Send news to: Frank Griggs ’56, 30 Bradt Road, Rexford, NY 12148: fgriggs@verizon.net

Yes, the Class of ’57 is already planning its 60th for October 2017 under the leadership of our Reunion Committee chaired by Rex Krueger. We had our second tele-conference on Dec. 10, put more flesh on the reunion plan and had fun catching up. Rex shares below our planning to date, and we’ve added committee member write-ups on what they are up to.

From Rex Krueger, our ’57 Pres.: Hey, guys, as promised at the 55th, we’re stoking up the fires for the big six-oh! It’s great that the committee that has functioned so well for the past few reunions is still basically intact and eager to go for what may be our last big blast at the “Tute.” We have some excellent hotel options and will finalize on them shortly. We have discussed several favors including Charlie Zito’s “top of the head” suggestions including an RPI walking stick—good for raising cane at the alumni banquet—and a Rensselaer hearing aid—which lets you hear RPI fundraising phone calls. We settled on a bright Cherry Red fleece vest with a suitable logo. You can see I’ve got my hands full trying to control the enthusiasm of these guys! We had 139 classmates at our 50th and 64 at our 55th, both among record attendances. So let’s plan on setting a new record for a 60th by joining in that fun in Troy... and set the date on your calendar now for October 12-15, 2017!

Bob Aldrich: I sold my manufacturing business (Telechron Inc.) seven years ago. I retired to a cottage on beautiful Lake Waccamaw (a natural North Carolina lake about 5 miles by 8 miles). I am active on the local library board and on the foundation of the Southeastern Community College. I read at least one book a week (mostly fiction) and write limericks (I have published two books of them). Life is great!

Bruce Collopy: Al McEwan spent his career in Seattle at the Boeing Co. While there he continued his involvement with classic cars, which started in his teens, and he has become a well-known expert both domestically and internationally. Al has for the last 11 years led a group of classic car enthusiasts (Pebble Beach Motoring Classic) from Seattle down to the Pebble Beach Concours d’Elegance, where he is a judge. This summer he and his college roommate, Bruce Collopy, turned 80, like most of the Class of 1957. As a birthday present to Bruce, Al offered to let him and Jackie, his wife, join Al and Sandi, his wife, on the trip from Seattle to Pebble Beach in early August. Al drove his 1930 Hispano Suiza (see picture) and Bruce got to drive a 2016 Bentley ($250K), which Bentley loans to the Pebble Beach Concours d’Elegance. It was a great trip of nine days with some 30+ classic cars. On the trip down they had lunch with Karen and Rex Krueger near Bend, Ore, and Cathy and John Fisher in Monterey, Calif. It was a wonderful pre-event to our class’s 60th Reunion in 2017. Hopefully, everyone who can will be there.

John Fisher: Cathy and I are finishing our fourth year as transplanted Easterners in Palo
Peter Bohlin and his firm, Bohlin Cywinski Jackson, received the Pride of Place Legacy Award from the Greater Wilkes-Barre Chamber of Commerce last September. The architectural firm, formerly called Bohlin and Powell Architects, was founded in Wilkes-Barre, Pa., in 1965 by Peter and the late Richard Powell '51 and currently has offices in Pittsburgh, Philadelphia, Seattle, and San Francisco in addition to Wilkes-Barre.

John Dromsky wrote: "The Crows (brothers of Alpha Chi Rho) of 1958 held our seventh annual September Weekend Gathering, which was initiated after all had such a great time when we got together after so many years for our 50th class reunion. Since then we have continued with this annual event and will continue to do so as long as some of us are able.

"The gathering this year was hosted in Easton, Conn., by Dori Wollen, wife of Brother Roger Wollen, who sadly is no longer with us. To the great delight of all, Dori has continued to be an active member of our group, keeping in touch frequently, joining with us each year and this year being our hostess.

At the gathering were Dori Wollen, Terry Chase, Sue and Bob Kozub, Sunny and Fred Best, Pat and John Cox, Marian and Art Sutherland, and Jane and John Dromsky. We had expected to be joined by Lilly and Dave Eng and Caroline and Ted Rubsam, but late changes kept them from being with us. This is a very informal, low-key event centered around great food, plenty of wine, and endless good conversation, which ranges through reminiscences of our student days, our lives over the many years since, and even current events. We hope we can see even more brothers and their guests when we gather again next year."

Leon Sokol reports that his wife, Marilyn, and he are traveling extensively, which includes visiting their six grandchildren who reside in Shellburne, Vt., Wilmette, Ill., and Madison, N.J. Leon is still actively involved in the practice of law with his firm, Sokol Behot. They have offices in Hackensack and Princeton, N.J., and are involved in virtually all aspects of business and commercial law. They are completing their 29th year representing the New Jersey Senate, and for the last decade they have represented both the Senate and General Assembly with regard to all of their litigation. Leon remains in contact with class members Ed Weisselberg, Chet Vogel, Gerry Nelson, and Harvey Berman.

Send news to: Jim Augst '58, 22 General’s Way, Clifton Park, NY 12065; augstj@juno.com

For those who did not attend our 55th Reunion—and those who did, but have forgotten—Mike Salkind was the emcee for the banquet and awards night. He did an admirable job, considering the "rowdy bunch of campers" he had to work with.

I asked Mike (and anyone else) if they would
share with us the highlights of their lives and careers since leaving Troy-on-the-Hudson. Mike writes, “Got married in 1959 and had four children. Got divorced in 1979.” On the professional side, he stayed at RPI and got a Ph.D. Then went into the Army in 1962.

After the Army, he joined United Technologies Research in 1964, and was transferred to Sikorsky as chief of structures and materials in 1968. He then went on to be chief of structures at NASA HQ from 1976 to 1980, and director of aerospace sciences at the Air Force Office of Scientific Research from 1980 to 1990. He returned to the private sector as CEO of Ohio Aerospace Institute from 1990 to 2003.

He then tried retirement, but flunked out and is now principal of Indus International, helping U.S. companies to market in India.

Back on the personal side, he writes that in 1980, he met Carol Gill and they have been together ever since. Between them, they have seven children and eight grandchildren.

Heck of a career, Mike. Congratulations. If you have not looked at the website, do so. Would appreciate other comments and updates from class members. No more shrinking violets. Everyone in the pool!

Send news to: John Lindsay ’59, c/o Class Notes, RPI, 1000 Troy Building, Troy, NY 12180; britcards@alum.rpi.edu

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Finally received confirmation from Rensselaer Advancement that four students have received Class of 1960 Scholarships. The awards were funded by a few 1960 alumni and after much insistence were finally spent on needy students.

Our reunion was a success! Dean Garde of the Engineering School delivered an inspiring address to our class. Fifty-five years and counting! Amazing!

Dave Friday ’59, an old friend, died recently. A year ahead of me in high school, Dave was instrumental in me attending Rensselaer. He was a four-year letter-winning baseball player. Dave received an M.S. from Northeastern U. and worked at Raytheon for 42 years. His son Tim ’85 was a member of the Rensselaer national champs in ice hockey.

I hope you enjoyed the winter season. It is a time of reflection—especially about our good fortunes as Rensselaer alumni.

Send news to: Bill Blanchfield ’60, 2610 Sunset Avenue, Utica, NY 13502-6009; bblanchfield@hsettlement.com

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55th Reunion: Oct. 6-9, 2016

Paul Strudler, one of the great wits of our class, finally checked in with our information desk (it’s only been 54 years). Paul writes that following the Manhattan Project there was intense interest in the medical applications of radio isotopes. It was a “hot” item and funding was plentiful and easy to obtain. Paul learned the basics of radiochemistry from Herb Clark at RPI and then went on to do his doctoral work at Yale.

John D’Auria, the great lacrosse player, also earned a Ph.D. at Yale and was in the same research group as Paul. John consults to the Department of Energy and often visits Washington, where he sees Paul. Paul did a postdoc at Harvard where he served as assistant director of general education, but then went on to serve as special assistant to the chief of nuclear medicine at the NIH, followed by 15 years as the review administrator of the Radiation Study Section. His work over the years included radiation exposure analysis, traveling to the Marshall Islands in a study of cancer causation at Bikini. He worked at NIOSH for a couple of years staffing up studies of worker exposure to radiation from depleted uranium, uranium centrifuges, uranium mines, watchmaking, etc. He says that the greatest pleasure he derived was from three years developing a drug rehab program in Lowell, Mass. Starting from zero he raised over a million dollars/year in local, state, and federal funding to serve the needs of three hospitals and seven communities. He met his wife through a woman photographer who had come to take photos of the new mini cyclotron they had just installed.

Dennis Dupier and his wife, Gayle, continue to enjoy their retirements, spending winter and spring at their home in Fort Lauderdale and summer/fall in Virginia’s Shenandoah Valley. He is in regular touch with Delta Phi brothers Werner Diekmann, Bob White, Bob Forman, and Roger Mike. The latter continues to be very active on the Rensselaer alumni board. Dennis’s son Greg is with BOC-Allen in Northern Virginia where Dennis worked after retiring from the government. Daughter Lauren and her family live in Marietta, Ga. She is a pastry chef and helps manage a Whole Foods bakery department. Dennis and Gayle stop there twice a year as they journey between houses and get to see two grandsons. He is also doing some engineering-related work fixing up his boat in Solomons, Md.

Send news to: Brian McMahan ’61, 2109 Hidden Creek Road, Fort Worth, TX 76107-3510; brian44@sbcglobal.net

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Hazing was de rigueur during the start of our freshman year at RPI. Sophomores would come up to us and demand, “Tip your beanie, frosh!” Unknown to most students, there was an incident of reverse hazing. Fed up with the constant harassment, several freshmen captured a sophomore who had been tormenting them, dragged him into a bathroom in a freshman dormitory, threw him into the shower, and turned on the water. That might have been the precursor of waterboarding.

I received an email note from my former roommate Richard Abrahams regarding the ancient refrigerator that he and other students dragged into our suite (see Rensselaer, Fall 2015). Rich advised me that “Eric Roy was also a part owner of that enterprise.” He also said that he retired (presumably from gainful employment) last January and is still “realigning” his life. Incidentally, Eric purportedly is the nephew of the then president of Costa Rica.

Send news to: Jay Winderman ’62, 1868 Bridgeport Ave., Claremont, CA 91711-2520; jhubw@earthlink.net

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Send news to: Jack Titley ’63, 151 Hamilton Ave., Watertown, CT 06795-2402; rtp63@specialops.com

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Had a nice note from Bob Kaye to say that he and his wife are doing well in Cooper City, Fla., (near Ft. Lauderdale). His younger daughter (Robin) got married last summer in Oregon (at a winery, no less), and afterwards he spent a week in Colorado with his other daughter and grandchildren, and then toured Central Europe for two weeks. Life for this alum is good, indeed! But one sad note: This fall we mourned the passing of classmate and good friend Mac Muir. Get more info from Bob by emailing him at kayebob@gmail.com.

David Reading keeps busy managing a law firm in Fort Myers, Fla., after retiring from the Army as a lieutenant colonel. He spent the Thanksgiving holidays traveling to Puerto Rico with his daughter, who was adopted from China back in 2001. Drop him a note at work, where he is director of administration at Henderson, Franklin, Starnes & Holt, P.A., 1715 Monroe Street, P.O. Box 280, Fort Myers, FL 33902. Direct dial: (239) 344-1134. david.reading@henlaw.com.

Ted Creedon keeps busy building liquid cooled mini Xeon Phi supercomputers, has his pattern maker 3-D scanning in his old hand forged tools, and is upgrading his CAD tools to support terahertz physical integrated circuit layouts. He is still working with RPI/CIE Prof. Jack McDonald, as he has been for the last 25 years. His daughter Erin Storlie (RPI ’92) is a senior project manager for Anderson Construction in Portland, Ore., and has $500M in completed projects. Ted’s 3-year-old granddaughters Mary Jane and Johanna are budding hockey stars and figure skaters (MJ has her first penalty for cross check), 11-year-old Jack

Larry Weinberg ’65 stands at the 14,170-foot Challwaccasa Pass in the Andes, the first of five over 14,000-foot passes he crossed in four days of hiking. “Since we saw no other tourists while hiking,” he says, “I suspect having the Rensselaer flag at the Challwaccasa Pass is an international first!”
is a 4.0 lacrosse player, 5- and 7-year-old Ollin and Aksel are skiers learning Mathematics (via remote logins to grandpa’s servers), and 13-year-old ballerina Lizzy is headed for the Bolshoi. He and his wife Doris just celebrated 48 years of “life with father.” By the way, Ted has now added colon cancer to his collection of sometimes fatal diseases, but he’s hanging in. Say a few prayers because, as Ted says, Big Karma works better than Big Pharma! Write to him at creeddon@easystreet.net.

Jack Pica has made the big move to New Hampshire where the state motto is “Live, Freeze, and Die,” or something like that. Actually the move was to be closer to his kids and grandkids, and, at our age having somebody to cover your “six” is reassuring. Now he has dual citizenship: main base in Exeter, N.H., and another home in Brewster, on Cape Cod. Find out more by writing to him at jackp@comcast.net.

Harold Purdy reports that he has four children and nine(!) grandchildren—the ninth was born in the back of daughter Heather’s Honda Element while she drove her to the hospital as she was visiting him. The baby actually came a month early, but happy to say that Sterling Parker Jewell is a very healthy, very tall one-year-old. Aside from being a grandpa, Harold spends many hours working in his new (2013) workshop. He also serves as an elder at his church and on the missions committee and sings in the choir as well. Last November he celebrated 48 years of marriage to his wife, Patricia. Get more info by writing to him at purdy_lady_sury@yahoo.com.

Danny Gold sold his Westchester, N.Y., suburban house, where he lived for 40 years, and moved into Manhattan in January. Interestingly, he bought a co-op apartment in the building next to Michael Wellner. Danny is now enjoying his view of the East River and sampling the many visual, artistic, and food delights of NYC. He retired in December from IBM after 48 years(!) with the company having served in a variety of positions including sales, marketing, management, market research, business analysis, and finance. Get the latest NYC news from Danny at Dannygold25@gmail.com.

Clifford Cooper, (Architecture) wrote to say that he received an award from the Connecticut Trust for Historic Preservation for restoration and renovation of a three-generation dairy barn in Morris, Conn., turning it into an event center known as South Farms. Cliff says that he loves what he is doing way too much to retire. He celebrated Thanksgiving with his three wonderful children and one grandson, running with them all in the Thanksgiving Day Turkey Trot. Get all the details from Cliff at cliffordacoop@optonline.net.

Our very own webmaster Bob Burns, “retired” from a long stint in Alaska, and now living in Florida (like so many of us it seems), reports that he recently took a six-week road trip from Tallahassee to Nova Scotia and back. He just missed Al Silberman as he passed Onancock back in September and again in October. Bob and a few others of us are already making plans for our 55th—in 2019. Right now it seems really far away, but—as always—it’ll be here before you know it! Stay tuned for more details, and keep Bob (and me) posted on what you’re up to by emailing us. You can reach Bob at longpassages@hotmail.com.

Heard from another architect, Bob Shaffer, who wrote to say that he retired officially on the first of June, last year. But then in October, the firm found out that they really needed him, so he was off to China yet again. Now he’s back, and can tell you all about his adventures: rshaffer@johnsonfain.com.

Alex Hills wrote to say that he was recently inducted into the Alaska Innovators Hall of Fame, for his work building Alaska’s telecommunication systems and for leading the Carnegie Mellon team that built the world’s first large Wi-Fi network. This work is described in the new book Northern Innovators by Ned Rozell. An old time Alaskan, Alex continues to help the University of Alaska improve and build its engineering programs and also to work in developing nations, mostly in Africa, supervising Carnegie Mellon students’ projects and assisting non-governmental organizations (NGOs) in other ways. Learn more from Alex at alex@cmu.edu.

Not long ago I had the opportunity to have a nice year-end lunch with Barry Wintner, who reports from Pennsylvania that life on his end continues to be sailing along with few bumps. He and his wife are babysitting as often as possible for their (somewhat) new grandchild. And Barry is already plotting and planning for our 55th (no kidding), so drop him a line (halowan222@verizon.net) and find out what he is thinking of…And plan to join us all back in Troy!

As for me and my wife, I can report that life continues to be quite rewarding. I am spending most of my time as president of the (NY) City College Life-long Learning program, called Quest. It is a four-day-week gig that I find very rewarding—keeps me out of trouble. We have 250 students, ranging in age from 61 to almost 100! On the travel front, if you have not taken one of our alumni trips I encourage you to do so. Last fall, my wife and I went on an absolutely wonderful cruise from Athens to Istanbul, stopping at five Greek islands along the way, and in Ephesus and Troy (yes, the original Troy!) as well. And next summer we’re booked on the “Great Journey” from Switzerland to Holland. I’d love to have you join us. Check the RPI alumni website for full details.

Finally, and sadly, I heard from Art Schoenstadt (alschoen@pacificbell.net), who wrote to say that his beloved wife of over 51 years, Betsy (Sage ’64), passed away last September after a valiant battle with pancreatic cancer.

Send news to: Michael Wellner ’64, 25 Sutton Place South, Apt. 3-K, New York, NY 10022-2458; captmike64@aol.com

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When we arrived in Troy for our 50-year class reunion in October, it had been more than 10 years since I had last visited RPI. The transformation was striking. My wife, Linda, who hadn’t been there in 30 years, was stunned by the beauty of the campus. And the Tute really treated us to a great time. Special events included a 50 Year Club dinner, a luncheon hosted by Dr. Jackson, an insider tour of EMPAC, induction into the 50 Year Club during half time of the football game—a 27-7 rout of the Merchant Marine Academy, en route to a 9-2 season and the Liberty League championship—and a class dinner that buzzed with conversation all evening. Everything was well organized, thanks to a reunion committee headed by Jay Stolzenthaler. A fleet of chauffeured golf carts was on call to drive us anywhere on campus throughout the weekend.

The reunion offered a wonderful opportunity to reconnect and reminisce. I was able to spend time with four fellow NROTC alumni. Rocco (Roc) Celtruda served on the USS Alamo (LSD 33) in Vietnam and was the boat officer for eight Marine landings. After leaving active duty, he married Rosemary, a Russell Sage graduate, and began a 25-year career building submarines for Electric Boat in Groton, Conn. He followed this with stints at three other firms before finally retiring in 2012. He and Rosemary have three grown sons and eight grandchildren. He extends an open invitation to any classmates who may travel to Mystic, Conn. He can be reached at (860) 536-4330 or oceltruda@aol.com and assures that the coffee is always on and the beer cold.

Frank Coughlin and Gary Williams flew in from the West Coast. Frank was accompanied by his wife, Carol, and Gary by his sweetheart, Diane Wall. I have reported on Frank, a fellow submariner, in earlier columns, but this was the first time I had seen Gary since graduation. After leaving the surface Navy in December 1969, he earned an MBA at the Wharton School and then joined the Cummings Engine Co. as an internal marketing consultant in their San Francisco Regional Office. After five years of47

dropping promotions back to Columbus, Ind., he embarked on a successful career in commercial real estate in the Bay Area, retiring in 2012, when he decided playing music and ice hockey was a lot more fun. He has played
in the Bohemian Club Symphony (for 30 years), the Bay Bones Trombone Choir, concert bands, and brass quintets. He started playing organized ice hockey in 1971 and has been on the ice two or three times a week ever since. He participates in the annual Snoopy’s Senior World Tournament in California and The Hollyburn Country Club Senior Tournament in Vancouver, B.C. His two children, Morgan (26) and Graham (24), live and work in St. Helena, Calif. In 2008 Gary was reunited with Diane, his sweetheart from his Navy days, and they have been together ever since.

Sheldon Margolis also flew in from the West Coast. After a 30-year career in the Navy, he joined Lockheed Martin, retiring in 2011. In 2014 he assumed the position of executive director of the Veterans Museum at Balboa Park in San Diego. If you friend him on Facebook, as I have, you will be the recipient of a wealth of interesting historical photographs.

In networking with my Lambda Chi fraternity brothers prior to the reunion, I was saddened to learn of the passing of Larry Anderson in January 2015 and that Dave Rowell had contracted amyloidosis, precluding his attendance. Dave was a practicing anesthesiologist in the Adirondacks before relocating his practice to Gainesville, Fla., about seven years ago. I found him in good spirits, and after we spoke he sent me a picture of a plane he had built. Two other fraternity brothers, Ralph Biedermann and Jim Bexfield, were able to attend, with Ralph being accompanied by his lovely wife, Maureen. We had a great time catching up. Ralph is still active with his consulting firm, the MRB Group, focusing on international trade and development. After retiring from both the Air Force and the Department of Defense, Jim is continuing his work in operations research at the Institute for Defense Analytics in Alexandria, Va.

I also reconnected with a few fellow ChemE graduates. Jeff Whiting caught up with me at the 50 Year Club dinner on Thursday night. After RPI, he spent 34 years with Monsanto and Soklatia in manufacturing and engineering management roles. After retiring, he launched a consulting career that continued until his second retirement in the fall of 2014. Jeff and his wife, Vickee, live in Goshen, Vt., a small town in the National Forest. She is an avid sports fan and former downhill racer. I also had a chance to chat with Jim Stevenson during the cocktail hour before our class dinner on Friday and learned that we had almost been neighbors for a couple of years in the late ’90s while he worked as a corporate fellow for Honeywell in Morristown, N.J., and I lived a few miles south in Basking Ridge. At dinner, we were joined at our table by Paul Sidikman and Stanley Engelson.

The long distance award for our class probably goes to Benito Suarez, who came with his wife, Lilia, all the way from Chitre, Panama, where he heads his own building products company, Arcillas de Chitre.

Since my last column, I have also received news about a non-attendee classmate. After a career with General Motors’ products division in Rochester, Jack Schickler has become a serial entrepreneur, launching five businesses in his hometown. The latest is Balance Engineering, which has developed and patented a product called Equilibrate, designed to diagnose and treat people with concussions and other balance issues. It can be used to measure fall rates for the elderly, assess trauma sustained by military personnel in combat, and help medical staff determine when an athlete is ready to play again after sustaining a concussion. The software was inspired by Jack’s daughter, who runs a dance studio in Rochester. It is already being used in 30 hospitals and patient centers nationwide.

Send news to: Erik Pettersen ’65, 135 Island View Drive, Annapolis, MD 21401-7225; enp10@comcast.net

50th Reunion: Oct. 6-9, 2016

Despite a strict word-count limitation, I must entice you to our 50th Reunion, eulogize a fallen classmate, and spice your life with classmate news. Good luck, Bonnie.

Our rip-roarin’, heel-clickin’, foot-stompin’ 50th Reunion is set for Troy on October 6 through 9. Bring your stories for sharing.

Remember those wild, wonderful, terrifying, and ecstatic days in the ’60s? Think with whom you shared them. Come up with names of three people you’d really like to see at our 50th Reunion. If you haven’t heard from a classmate about the Reunion by the time you get this issue, your alumni contact info may not have kept up with you. Please remember Bob Schipper of the Class of ’66, who did not join us only because of a conflict with his submariners-of-SW-Florida get-together. Lou Andre has been called out of retirement for a construction management job in Miami but plans a reunion trip to Troy. Ray D’Amante and family are energetically developing and managing commercial real estate in New Hampshire, not far away; lawyers abound in the family. Mary Bridgman Williams, Rich Felak, Don Cote, the peripatetic Gordon Snyder, Mike Gauthier, and Jeff Gorss also checked
in. Jeff provided fascinating info about locks and canals, an Eric Canal trip being on my mind as a possible Reunion activity.

Send news to: Bonnie Hepburn ’66, 549 S. Palm Ave. #4, Sarasota, FL 34236-6760; hepbum@moneyense.win.net

Over the last couple of years our own Lou Jones has photographed in eight African countries. The Boston Arts Academy taught a module on Africa and hosted the first exhibition of Lou’s “panAFRICAproject” from November 4 through December 17, 2015. You can read more about it and see photographs at www.panAFRICAproject.org.

Walt Diercks and his wife, Mary-Jane Atwater, traveled to 14 countries during 2015. He practices law part time with his Washington, D.C., law firm and donates his legal services to nonprofits in Central Virginia, where he and his wife moved in mid-2013. Both he and his wife have used semi-retirement as an opportunity for volunteer work, to take up golf, and to spend more time with their children and grandchild, all of whom live in Boston.

Bruce Webster (B.Chem.E.) continues his work in the energy business. He is currently working with a fellow alumnus on a new technology for the storage of energy from renewable energy sources. Bruce and his wife, Joan, live in the Sierras foothills, not far from Lake Tahoe. bwebster@concordiaresources.com

From Marc Costantino: “I, with my wife of one year, Elizabeth, left RPI for my Ph.D. studies in solid-state physics and materials science at Princeton University. In May of 1971, I turned in my thesis on a Friday and reported for Army duty the following Sunday. Elizabeth and I then spent three years at the U.S. Military Academy, where I did research in high-pressure physics and taught physics. I left active duty in 1974 and worked in high-pressure physics at Lawrence Livermore National Laboratory until retirement in 2006. Along the way, I stayed in the Army Reserve, retiring in 2000 as a colonel, and taught physics until 2011 at Las Positas Community College. Elizabeth and I have three children, four grandchildren, and split our time between homes in Livermore and Wellfleet, Mass.”

Send news to: Stu Berg ’67, 99 Hickory Circle, Ithaca, NY 14850-9610; stustenberg@alum.rpi.edu

Edward Solomon will be honored with the 2016 Alfred Bader Award at the American Chemical Society’s 251st National Meeting in March. The award is sponsored by the Alfred R. Bader Fund to recognize outstanding contributions to bioorganic or bioinorganic chemistry. Edward is currently professor in chemistry and professor of S.L.A.C. photon science at Stanford University doing research in the areas of inorganic, physical, biophysical, bioinorganic, and theoretical-inorganic chemistry. The emphasis of his work at Stanford is the application of a wide variety of spectroscopic and computational methods to determine the electronic structures of transitional metal complexes. After getting his bachelor’s degree in chemistry at RPI, he continued his education at Princeton University for master’s and doctorate degrees.

Classmate George Casey has recently become the chair of the new Portland/Southern Maine Vistage group. Vistage consists of small local groups that provide peer advisory and leadership development training for people who own or operate a small business. In addition to the monthly group meetings where the members share their experiences, there are monthly individual coaching sessions with the group chair. Prior to starting the new Vistage Group, George had a 35-year career in the home building and planned community development sector of the real estate industry serving in executive positions at several companies around the country. After getting his bachelor’s in environmental engineering at RPI, he went on for an MBA at the U. of Pennsylvania Wharton School and served in Vietnam as a lieutenant in a Navy Construction Battalion (Seabee) unit. He now lives in southern Maine with his wife, Linda Bail.

Send news to: Mal Crawford ’68, 19 Ellision Road, Lexington, MA 02421-7407; KJMC-Mal@earthlink.net

Ron Ferrari retired from DuPont after 45 1/2 years of service, leaving as global sourcing manager for one of their electronics businesses. He has been married to his wife, Carol (Albany Med ’68), that long. He says, “Carol and I are, I would think, one of the few couples to meet at the Phalanx dance and marry four years later. The dance was held in late September 1965.” They have three children and 10 grandchildren. Ron plays lots of golf, and enjoys spending time with his grandchildren. Ron sends a special “hello” to all his fellow chemical engineering majors and Phi Kappa Theta fraternity brothers.

Steven Nussbaum and his wife, Lilah, founded RAYMAX of Palm Beach County, Fla., to provide financing and consulting services to extended care facilities. They recently opened a full-service treatment facility, Epiphany Resources, LLC, in Delray Beach. This treatment center provides both Partial Hospitalization Programs (PHP) and Intensive Outpatient Programs (IOP) to those men and women recovering from alcohol and drug addictions. To learn more you can visit www.SafeHavenFlorida.com.

Send news to: Henley Scheuer ’69, P.O. Box 535, Madison Square Station, New York, NY 10159-0535; HScheuer@janney.com

Ron worked on a speech, ‘Building New Nuclear Plants Would Make Global Warming Worse.’ Forbes magazine covered the speech.” Here are a few links related to Arnie’s speech: http://www.fairewinds.org/nuclear-energy-education/northwestern-university-speech-building-new-nukes-would-make-global-warming-worse and http://www.forbes.com/sites/jeffmcmanamon/2015/05/01/did-tesla-just-kill-nuclear-power/. I have been busy on the road racing and track circuit. I ran the Utica Boilermaker 15K race last July, finishing in 1:08:10, good for second place among men 65-69. In August I participated in the World Masters Athletics Championships held in Lyon, France, completing the 8K cross country and three track events: 5K, 10K, and 1500 meters, generally finishing in the middle of my age group (65-69). The competition was awesome, and I met a lot of wonderful people. Then in September it was the Fifth Avenue Mile in NYC (my first time in that event), finishing in 6:17, 10th of 55 men 65-69 years old. Let me hear from you.

Send news to: Seth Bergmann ’71, 410 Villa nova Road, Glassboro, NJ 08028-1558; bergmanna@rouum.edu

Send news to: Bob Dvorak ’72, 12 Mill Lane, Saugerties, NY 12477-1128; bobdvorak@hccrr.com

Congratulations to Judge William (Bill) Palmer, of the Fifth District Court of Appeal in Florida, on his election as president of the Council of Chief Judges of the State Courts of Appeal, which is a national association dedicated to improving the administration of justice in state appellate courts. Bill was appointed Florida appellate judge in 2000 by then Governor Jeb Bush after having been in private practice for 24 years specializing in civil litigation, family law, and appellate law. He has a degree from BC Law (1976) after getting his degree from the “Tute with us non-lawyer, technical types (his degree was in management science). Bill and his wife, Nancy, also an attorney, have five children and live in the Daytona Beach area.

In other news, Paul DiCorleto (he always sat next to me in alphabetical assemblies, like graduation) was named vice president for research and sponsored programs at Kent State University. After a nine-month national search, President Beverly Warren of Kent State mentions how delighted she is to attract “someone of Paul’s caliber and distinction” to the university. Paul had recently been the chair of Cleveland Clinic’s Lerner Research Institute, where he headed that unit for 13 years. Paul has a Ph.D. from Cornell after his degree in chemistry at RPI.

We also received a nice note from Harry Gordon, who co-founded G2/Gordon + Gordon Architecture with his daughter Caitlin (RPI ’12). Last fall he was selected by the U.S. Green Building Council as a 2015 LEED Fellow. Harry was a founding board member of USGBC in 1995 and helped develop the LEED Green Building Rating System used to certify energy and environmental qualities of buildings. Harry was chairman of Burt...
Hill architects, having served there for 36 years before founding G2. He notes that practicing with his daughter is an intriguing combination of “her young fresh eyes (with) his gray, old beard.”

Finally, and on a sad note, Yok Lee died last year of cancer, as reported by our old freshman roommate, Craig Newman. Craig and Yok’s other pals, Neil Winner, Mark McDonald, James Krakowsky, and Marshall Sohne will miss him greatly.

And, as always, check out our class website: www.rpl73.org. See what else is going on with our classmates; and post something about yourself and your interests.

Send news to: Gary DiCamillo ’73, 477 Wianno Avenue, Osterville, MA 02655-1924; gary.dicamillo@gmail.com

Fred Li, a past member of our reunion committee, has been appointed a director of the Friends of Nathaniel Witherell, a short-term rehabilitation and long-term nursing care facility in Greenwich. Fred is still working at HLK where he handles sales and marketing.

The American Nuclear Society now has our own Gene Grecheck as its 61st president. Gene commented that his father tried to discourage him from being an engineer and he originally started out as a physics major. However, after he saw all the RPI babies in engineering he changed his mind (just kidding, Gene). Actually it was a summer job at the GE plant in Schenectady combined with his first upper-level physics class that brought him around.

Gene is celebrating his 39th year of marriage to his wife, Barbara. They have two children—Michael who is a glassblower under the name of G-Check Glass, and Lauren, who just received her doctorate in pharmacy.

Semi-pro traveler Duane Covino is at it again enjoying a 12-day guided tour in France and Spain last May followed by three weeks on the U.S. West Coast, visiting fellow PLP fraternity brother Mark Koslin ’73, as well as visiting Chinese and Japanese gardens in LA and Long Beach as well as Crater Lake National Park, en route to Seattle and Mt. Rainier.

He then spent three and one-half weeks on a guided tour in East Asia, starting with eight days in southern China: Shanghai, Suzhou (described by Marco Polo as the “Venice of the East”), Hangzhou, Wuxi, and Nanjing; then a two-week guided tour of two Japanese islands, the Shikoku and Kyushu Rail and Drive tour. Duane considers this to be the best guided tour he has ever taken. The small group walked consecutively to five Buddhist temples on a pilgrimage route of 88 such temples, and on another day walked purportedly 785 steps up a mountain to reach the temple on the top. One of the highlights was the arrival in Nagasaki during the Kunchi, the celebration of autumn, with its outstanding performances, especially dancing. Staying an extra day in Kyoto to again visit the historic Gion district with its beautiful architecture, he participated in a small group session with a Maiko (approximately an “apprentice geisha”) where all had the opportunity to ask questions, take photos, etc.

At the rate he is going, he might as well sell his home and rent a one-bedroom apartment for the times he is actually in town. Better yet, he should get a part-time job traveling at a company’s expense and writing travel reviews. He plans to visit Italy during summer 2016.

Our Class Captain and Chief Fleur de Lis Claudia Seligman continued on her quest to be totally bionic by having her knee replaced in November. I’ve met quite a few others here in Florida who have had this done and their golf games have improved! Are you listening, Saied Saghatoleslami? Get your knee replaced and you might yet shoot your age.

Send news to: James C. Wernicke, P.E., ’74, 5485 David Blvd., Port Charlotte, FL 33981; wernickej@yahoo.com

We had a good crew return to the Tute for our 40th Reunion. It was great to reconnect with them, and all had a great time. Start thinking about attending our 50th Reunion in a decade! And now for the news:

John Holmes (B.S. EE) has joined the Dickinson Wright PLLC as an intellectual property attorney, concentrating on electrical, electronic, and mechanical patent matters, including opinions, due diligence, studies, and agreements. John has experience in preparing and prosecuting U.S. and foreign patent applications, conducting patent validity and infringement, and assisting clients in infringement avoidance and design-around efforts, in drafting and negotiating IP licenses, drafting and negotiating hardware and software development and purchase agreements, and assisting with IP litigation and arbitration proceedings.

Linda Sanford (M.S. Opras. Res.) has been elected a director of Pitney Bowes. Linda was appointed to the position after retiring from IBM after 39 years. Linda’s many accomplishments have resulted in many awards, including being named a member of the Women in Technology International Hall of Fame and the National Academy of Engineering. She has been named one of the 50 Most Influential Women in Business by Fortune magazine, one of the top 10 Innovators in the Technology Industry by Information Week magazine, and one of the Ten Most Influential Women in Technology by Working Woman magazine.

Send news to: David Stark ’75, 616 Sandray Terrace, Bel Air, MD 21015; dcsart@hotmail.com

B. Jayant Baliga ’74
Named 2015 Global Energy Prize Laureate

Jayant Baliga ’74, distinguished professor of electrical and computer engineering at NC State University and a 2013 inductee into the Rensselaer Alumni Hall of Fame, was chosen as a 2015 Global Energy Prize Laureate. He was selected for his invention of the Insulated Gate Bipolar Transistor or IGBT, a power semiconductor device used extensively in compact fluorescent lamps, air conditioners, home appliance controls, robotics, electric cars and bullet trains, and compact defibrillators.

The Global Energy Prize was established in Russia to recognize outstanding scientific research and technological development in energy that contributes to efficiency and environmentally friendly energy sources. Since 2003 the prize has been awarded to 33 laureates from 10 countries. The award includes a monetary prize, which Baliga has used to create an endowed fund for graduate study at Rensselaer.

“My graduate school education at Rensselaer Polytechnic Institute has been the foundation for my successful career as a scientist and engineer,” said Baliga. He earned his master’s in 1971 and doctorate in 1974 in electrical engineering.

“I am privileged to have this opportunity to support my alma mater in attracting the best students,” said Baliga.

Baliga is an internationally renowned scientist, author, and educator in the field of power semiconductor devices with 120 U.S. patents to his name. Among his many honors, he was presented the National Medal of Technology and Innovation by President Barack Obama in 2011. He will be inducted into the National Inventors Hall of Fame for his invention of the IGBT in May 2016.
return home for the holidays, he seems to turn it up a notch.

Bill Kuhn continued his globe-trotting with another trip to the Galápagos Islands, Malaysia and Indonesia, and Italy and Spain. His pictures are incredible—he is quite talented and posts many of them. I am convinced we should take a class trip when a few more of us are retired, and I know who I am going to ask for help in planning it!

Bob Marier sent me a picture (at right) of some fishermen, and lo and behold they are Chuck Johnson, Tom Walsh, Ed(owin) Miller, Joe Beneduce, and Bob Marier. Turns out 15 of the TKE pledge class from our year and their spouses gathered in Naples, Fla., last May. They were celebrating the year most of us turned 60. Ed Welch lives and works there now (for himself, practicing intellectual properties law, patents, etc.) so he organized this reunion of all of them. Some of the attendees not pictured were Rich and Joann Michalik, both Class of ‘77, Ted Penfield and his wife, Joann (25 years married); Bob Pavalk, Dave Faulkner and his wife, Peggy; and more! They also did this 10 years ago when they got together for the Newport Jazz Festival in August of 2005.

John Hill sent us another update: Since returning to the Treasury Department in 2009, John has worked on a number of initiatives to improve the efficiency of government. As chief disbursing officer of the U.S., he was instrumental in replacing paper checks with electronic payments and pre-paid cards for millions of benefit recipients and government contractors. These wide-ranging projects have saved taxpayers millions of dollars and have accelerated the move to an all-electronic federal government. In his current project, he is leading the government’s effort to replace over 10 million paper invoices with electronic transactions. The United States has joined the dozens of other nations that now require electronic invoices from government suppliers. A recent article in the Government Executive magazine describes this program: www.govexec.com/technology/2015/12/federal-paper-pushing-costs-taxpayers-millions/124356/.

David Valeron and his wife, Lorrie, recently took “The Great Journey through Europe.” “We traveled to Switzerland, France, Germany, and the Netherlands with fellow alums and faculty (Janet and Richy Schlumpf ’65, Maggie and Tom Kennedy ’68, Kiyo and Minoru Tomozawa). It was the ‘trip of a lifetime’ put together by Gohagan & Co. It was fun getting to know other alums and swapping stories about RPI while enjoying the splendors of Europe. Thanks to the RAA for the ‘welcome bottle of wine’ waiting for us on the Amadeus Princess, our Rhine River cruise ship.”

OK, everybody! Send me some news!

Send news to: Maureen H. Regan Robinson ’77, 5015 Young Deer Drive, Cumming, GA 30041; maureen7221@aol.com

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Heard from Kevin Chisholm recently. He has now started a company, Mid-Atlantic Energy Consultants, LLC, in Virginia that provides services that have a positive impact on the world. He sends his greetings to Roger, Hank, Jack O’Neil, and other TKE brethren and fellow swim team guys!

Jeff Brodsky was recently named vice chairman at Related. He has been with Related, a real estate development and asset management company, for over 30 years. The founder and chairman of Related, Stephen M. Ross, stated, “Jeff Brodsky has been an invaluable member of the Related team for three decades. Jeff has an unwavering commitment to excellence and deep and broad knowledge of our businesses. He is uniquely positioned to work with the entire executive leadership team and help write the next chapter of growth for Related.”

There is a writer in our midst! John Benedict has published his third medical thriller, Fatal Complications, which was released in December by a major publisher and is garnering a series of good reviews. I see that it is available on Amazon and other locations. His earlier book, Adrenaline, became the No. 1 medical thriller in October 2014 in the Kindle store. Way to go John—can’t help but wonder when writing will take over from your day job as physician/anesthesiologist!

Clflin University, Orangeburg, S.C., has announced the appointment of Charles Richardson as dean of their School of Business. Charles was recently employed by AT&T for more than 25 years, serving in various executive roles including marketing information systems, international communication systems, international strategy alliances, and other positions. In addition, he was a visiting professor at William Paterson University in Wayne, N.J., and associate professor of marketing at Clark Atlantic University in Atlanta, Ga. “We are pleased to have Dr. Richardson join the Clflin University family,” said President Henry N. Tisdale. “His track record of leadership, corporate and academic experience, tremendous personal energy, and strong commitment to achieving excellence will surely enhance our business programs on a global scale.”

Carol Kaufman-Scarborough’s research paper, “Forces for Change in Consumer Access: A retrospective Analysis of the Hollister Case,” was recently recognized as the best paper presented at the American Marketing Association’s Marketing & Public Policy Conference in Washington, D.C. The paper discussed that while stores may have entrances to enable access for disabled persons, often the store layouts and placement of shelves and aisles make for a less than satisfactory consumer experience for disabled persons.

Tony Leo recently published an article, “Fuel Cells Meeting Today’s Power Generation Needs—Cleanly & Efficiently.” The article discusses the use of fuel cells for distributed power generation, using natural gas, reformed with water into hydrogen, which is used to drive the fuel cell process. Tony is vice president, applications and OEM engineering, at FuelCell Energy and has been with them since we got out of RPI back in 1978! In this time, he has authored numerous papers, been awarded two U.S. patents, and held quite a few positions within the company.

Recently drove from Hartford, Conn., to Schenectady, N.Y., for a meeting at GE’s offices to discuss two combined cycle power plant projects in Texas. I’m the project manager for the supply of four heat recovery steam generators (HRSG) at these plants behind GE’s newest gas turbines—7HA.02 machines. An interesting time for us at work, as Alstom Power was recently purchased by GE for some $1B dollars and our group is looking to double (at least) the number of HRSGs that we supply. After the meeting, I had lunch with Kevin Young, who continues to practice law at his firm, Young Sommer LLC. We had a good lunch at the Albany Pump Station (good brews!), then took a quick drive through the RPI campus. Quite a bit of new development on Hoosick Street!

Look forward to your news and items of interest.

Send news to: Mark Reough ’78, 4 Longview Drive, East Granby, CT 06026-9797; mark.reough@cox.net

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Oklahoma Governor Mary Mallin recently appointed John Lyttle to the Rose State College Board of Regents. John is director of engineering at Boeing and resides in Midwest City, Okla. Karen (Andersen) Slade received the Fannie Lou Hamer Award in October for her charitable work helping needy children through the SladeChild Foundation (see sladechild.org). This award was presented in a ceremony at St. John’s College by the Dr. Martin Luther King Committee of Annapolis, Md., to women in the community who actively improve the quality of life of others through words and deeds. This was the 20th award year. The award’s namesake, Fannie Lou Hamer, was a famous civil rights activist from Mississippi.

Tom Clancy has been named to the board of SupraMed, a San Diego-based supplier of plastic surgery software. Tom is the managing director.
of TAO Venture Partners and previously led software, services, and Internet investments at Enterprise Partners, a venture capital fund focused on the technology and health-care sectors.

Ron Yu continues to teach patent law in Hong Kong when he is not walking his dogs Lucky (aka SofaKiller), Herman, Boot Boot, and Ding Ding 10 km per day. Ron also works with IIPCC, a nonprofit organization dedicated to entrepreneurs, commercialization, and innovation, which led to the fun of losing travel documents in Shanghai.

Dan O’Dea has been named the new vice president of cardiovascular services at HealthQuest in Poughkeepsie, NY. Dan earned his MD at New York Medical College in Valhalla. He had previously served as chief of cardiology at Vassar Brothers Medical Center as well as president of the Health Center, a division of Hudson Valley Cardiovascular Practice.

John Kolb has been named to the board of trustees of "Internet2," a not-for-profit U.S. computer networking consortium for research and higher education. John continues as vice president for information services and technology and CIO at Rensselaer.

**Send news to:** Paul Sicard ’79, 1424 Kenilworth Parkway, Baton Rouge, LA 70808-5737; psicard@entergy.com

**80** The U.S. Army has created a new innovation award that commemorates Maj. Gen. Harold Greene. Greene was serving as the deputy commanding general of the Combined Security Transition Command-Afghanistan when he was killed by an Afghan soldier on Aug. 5, 2014. The Maj. Gen. Harold J. Greene Award for Innovation replaces the Army’s Greatest Invention Award and the Soldiers’ Greatest Invention Award programs of the past 11 years. The award recognizes creators of products in the past year that help make fighters safer, faster, healthier, or more lethal. Greene served in leadership positions in Army research, science, and technology fields.

**Send news to:** Kathy Pratt Harrington ’80, 179 Wyman Road, Groton, MA 01450; kpharrington@gmail.com

**81** 35th Reunion: Oct. 6-9, 2016

I met up with classmates John and Melany (Andree) Potuzko at the RPI vs. Miami Ohio hockey game in January. They reside in Springfield, Ohio, where John works for Ultra-met as VP of operations. Ultra-met is a manufacturer of tungsten carbide cutting tools and wear parts. John and Melany relocated to Ohio from the Pittsburgh area last year.

**Send news to:** Marc Glasser ’81, 14689 Wood Creek Court, Perrysburg, OH 43551; marcglasser@gmail.com

**82** In Fall 1979—sophomore year for most of us—the Voorhees Computing Center opened. This quote from the Office of Computer Services’ General Information flyer should help your kids understand what it was like to program when dinosaurs roamed the earth: "Rensselaer Polytechnic Institute has an IBM 370 model 3033. Attached to the 3033 are 4 megabytes of main storage...tape drives...card readers, a card punch, [and] several printers with both upper-case and lower-case print trains...."

So, in celebration of progress, here’s what some of your classmates are up to today:

**Dave Didio** and I had a nice phone chat; he’s happily running his own construction business in Virginia and wishes all his classmates well. Last fall, Dave purchased a home in Vermont and will be moving himself and the business there this spring.

**David Haas** notes, “I just started a new company: Cererus Financial Advisors, LLC in Franklin Lakes, N.J. My new company is a registered investment advisory firm working with clients on financial plans, investment management, and insurance. After I graduated from RPI with my B.S. in EE, I worked as an electrical engineer and later an embedded software engineer in both the instrumentation and telecom industries. I received an MBA in finance from Pace University in 1987 and passed the CFP® in 2012. My wife, Glenda, and I live in Mahwah, N.J., where we have lived for 25 years. I have two kids and my oldest, Alex, just graduated from Syracuse in May and got a job in Buffalo. My daughter, Erica, is a May 2016 graduate from Gettysburg College.”

David continues: "In my spare time, I am the president of the Rensselaer Club of NJ and would love to get more Class of ’82 alumni who live in NJ involved in our RCNJ activities. We do multiple kinds of events throughout the year and the idea is to connect with fellow alumni."

**Ken Rodbell** writes that he is “…at the IBM TJ Watson Research Lab in Yorktown Heights, N.Y. I was recently elevated to principal research staff member (RSM) after over 25 years as an RSM and RSM manager in the Silicon Science and Technology Department. My wife of 30-plus years (Kathleen Moonan—Russell Sage ’82 BSN) and I still live in Sandy Hook, Conn., where our three children return for the holidays. We occasionally attend RPI hockey games at Yale, Quinnipiac, and even Troy.”

**Craig Maiman** is “finally getting around to write about what’s going on with me for years… I’ve been at Synopsys as an applications consultant in the Boston area for the past 10 years (before that I was a hardware designer at various companies). I’ve been married now for 30 years and have two girls, aged 23 and 26 (I can’t believe how the time has flown!). Speaking of flying, I got my pilot’s license in 2012 and have been building my own plane, a South African designed four-seater called the Sling 4 Turbo, for the past year and a half. My plan is to have it done before the summer of ’17. You can see my extensive blog on the build here: http://craigmaling4.blogspot.com.”

**Dino Macaluso** recently announced that his firm, Macaluso Wealth Management Group, has expanded into Canada and is now able to offer clients cross-border products and services. The move was made possible through a partnership with Richardson GMP, Canada’s largest independent wealth management firm. “This is something I have been working on for a long time and it is exciting to be able to help some of our friends and colleagues in Canada.” The frequent trips to Canada have also motivated Dino to get back out on the ice and he reports that the new hip is working just great!

**Barry Popik** has been doing groundbreaking work on the origin of “Uncle Sam”; his research was cited in the Dec. 9, 2015, edition of The Chronicle of Higher Education. However, Barry’s work hasn’t quite gone as viral as any story about the Kardashians, so he’s spreading the word person-to-person! In short…you may remember that Troy has staked a claim to being the birthplace of Uncle Sam. The story goes that Samuel Wilson of Troy provided meat for the U.S. Army in barrels stamped U.S. (indicating U.S. government property). Civil War soldiers joked that the meat came from “Uncle Sam” (referring to one Samuel Wilson), and that’s how the name came into being. However…a few years ago Barry poked a big hole in the Sam Wilson story by finding an example of Uncle Sam in an 1812 issue of the Bennington (Vt.) News-Letter. Sam Wilson didn’t begin delivering meat to the Army till 1813. Subsequently, a sailor’s diary from 1810 was found, also referring to Uncle Sam as we knew him today. So, it’s not that Sam Wilson didn’t play a part in spreading the name Uncle Sam, just that he wasn’t the first to do it.

**Craig Mucher, Alan Boyce ’81, Rich Boehme ’86, and Mike Popule ’87** work together in the Process R&D group in the Performance Materials...
Division at Air Products in Allentown, Pa. Craig notes that "we have each worked for Air Products for at least 20 years. During 2016, we will become part of the new company, Versum, being created from a part of Air Products. We enjoy working together on projects, discussing our ties with and years at RPI, and sharing our experiences living in the Lehigh Valley (Allentown, Bethlehem, and Easton). I’m the ‘outsider,’ not having grown up on Long Island."

Lazhar Abida (Ph.D. ‘82) mentions that he’s presently teaching high school math and science in Calgary, Alberta. Lazhar is planning to retire in a couple of years.

Navy Captain Kenneth Eisenberg is the new regional health affairs attaché based at the U.S. Embassy, Port Moresby, serving the Pacific Islands region. He most recently served as the director and program manager for Deep Submergence Biomedical Development at Naval Sea System Command in Washington, D.C.

Christopher Burney (M.S. ’82) was recently hired as the Wilton, Conn., director of facilities and energy management. His responsibilities include planning, implementing, and evaluating comprehensive public facility plans, monitoring public facility construction and renovation projects, and overseeing the town’s energy management plans. Chris has more than 30 years of experience in director of engineering or facilities management positions tasked with addressing the complex management and plant challenges inherent in the operations of hospitals and trauma centers.

Dr. Steven Litman has been recognized for showing dedication, leadership, and excellence in pain management. U.S. News & World Report has named him to their list of the top 200 pain physicians in the United States. He works in two roles, as a private medical practitioner and director of All Island Pain Consultants, and as section chief of pain management at St. Charles Hospital. Steven earned his M.D. at New York Medical College in 1987, completed an internship at Stamford Hospital, a residency at Westchester Medical Center, and an additional five years of academics as assistant professor in pain management/anesthesiology at Stony Brook University.

That’s it for this edition. Please consider sending in an update—inquiring minds want to know!

Send news to: Mark Bowers ’82, 4344 N. Witchduck Road, Virginia Beach, VA 23455; mark.bowers@lighthouse-one.com

Send news to: Don Hubicki ’83, 2995 Hunt Valley Drive, Glenwood, MD 21738; hubicki.don@gmail.com

Ken Levine was named vice president and CFO for Nationwide Insurance’s Excess and Surplus Specialty companies. This marks a career change for Ken who spent the past 31 years working in the actuarial profession, most recently as vice president and chief actuary for Scottsdale Insurance, a subsidiary of Nationwide Insurance. He still remains active within the actuarial profession, currently serving as secretary/treasurer for the Casualty Actuaries of the Desert States and on an advisory panel for Arizona State University’s Actuarial Science Degree program. Ken and his wife, Sarah, live in Scottsdale, Ariz., where they enjoy the never-ending sunshine and spending time with their two grown children, Ariella and Sam.

Rick Lippincott (M.S. Tech. Writing) received an award from the Society for Technical Communication at their annual conference in June. The award was for best article published in the society’s magazine Intercom during 2014. The article, titled “We Explain Things,” presented a brief history of the profession as well as a look forward to possible future trends.

Maureen Michael has joined the Da Vinci Science Center as chief financial officer in Allentown, Pa. Previously, Maureen was with Air Products and Chemicals Inc. for 25 years serving in several positions of expanding responsibility and acquiring in-depth knowledge of global business and investment analysis. In her most recent assignment she served as global segment controller for tonnage gases, equipment, and energy. During that time, Maureen lived in Shanghai, China, directing the company’s finance organization in Asia and helping the company expand significantly in China. Maureen earned her MBA from the Wharton School at the University of Pennsylvania after earning her Chem.E. degree from RPI.

In an interesting left brain/right brain balance, Scott Leone has become the new religious leader for Grace Evangelical Christina Church at Dromgold’s Corner in Carroll Township, Pa. Scott earned both his bachelor’s and master’s in aeronautical engineering from RPI and still works as an engineer in Mechanicsburg. “I received many calls from the ministry asking me to join,” and since being Christian since he was 15, Scott knew he would eventually end up helping out. Scott and his wife enjoy the small country area and people and are excited with the new opportunity.

It was nice to hear from my barn-mate John Fiore (he and I had apartments in a barn in Mehoopo-pany, Pa., when we first left RPI to work for PS&G). John is enjoying a successful career as capital projects manager with PS&G in Mehoopany. His oldest son is a teacher and just had a child (making John a new member of the grandparents club!). His middle son is a sophomore at Penn State, and his youngest is a high school junior. John got together with fellow Chem.E. Tom Bergman (senior engineering consultant for Praxair Inc. in Tonawanda, NY) and John Grathwohl (NYSDEC, Albany, NY) for an enjoyable weekend in Syracuse. They caught part of a jazz festival, ate Irish food, and consumed Irish ale and spirits.

Mark Mitchell continues to travel the globe consulting for Pharmatech so I was rather surprised when he dropped a note while recovering from emergency gallbladder surgery in San Francisco. Based on his description, my learning from the event is if you feel severe upper abdominal pain, you should get it checked out!

Joseph Betz was appointed chair of the Department of Architecture & Construction Management at Farmingdale State College, State University of New York, beginning Jan. 1, 2016. He is also this year’s recipient of the 2016 Presidential CARES Award (Commendation and Recognition for Exceptional Service) from Farmingdale State College, for his exemplary work on behalf of students, faculty, and staff. The award is given out to a single faculty member each year.

We have lots of career changes and health updates as we are getting older. Don’t forget to check in.

Send news to: Diane Updegrove ’84, 3002 Colonial Ridge Drive, Brandon, FL 33511; ladjd@ sbcglobal.net

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Yes, it’s finally spring! If you attended Reunion & Homecoming, I hope you had a fabulous time reconnecting with your RPI friends.

Congratulations to Christine Murner (Mech. E.) who, in July, was named the first vice president of sales and marketing at the ETM Manufacturing Co. of Littleton, Mass. ETM Manufacturing is a provider of specialized sheet-metal fabrication. With more than 30 years experience in this market sector, Christine works with clients developing unique need-based solutions while expanding opportunities to accelerate growth in her company’s core markets.

In November, MEARS Technologies Inc. appointed Scott Bibaud (Biomed. Ed.) as its chief executive officer as well as a member of the company’s board of directors. MEARS Technologies is a U.S.-based engineered materials company developing and commercializing products based upon producing breakthrough material designs providing engineered materials that will form the core of a new generation of electronic devices. Scott is a semiconductor industry veteran who has run numerous high-growth firms. Congratulations!

Are you looking to expand your teams or network with other RPI alums? See how Rensselaer Alumni Connect (RensselaerAlumniConnect.com), a new career and professional development
program launched by the Rensselaer Alumni Association and Office of Alumni Relations, may assist you. Send me your news!

Send news to: Patricia DeLauri ’85, 478 Winthrop Street, Medford, MA 02155; pdelauri@sbr.com

30th Reunion: Oct. 6-9, 2016

Reuben Hull (Civil E.), PE, presented “The 1939 New York World’s Fair: A Civil Engineering Showcase” at the 2015 American Society of Civil Engineers (ASCE) National Conference in NYC. The presentation chronicled the civil engineering planning, design, and construction efforts that built a virtual city, transforming a 1,220-acre municipal ash dump and swamp into a fully-realized fairground in less than three years and left a legacy of permanent civil infrastructure. Reuben was also elected vice chair of the ASCE History and Heritage Committee; he began his career-long affiliation with ASCE as an RPI student chapter member.

Vic Abate (Mat.E.) succeeded Mark Little ’82 (Ph.D.) as GE’s chief technology officer, leading research operations worldwide. Joining GE in 1990, he built its wind farm business from scratch before being named CEO of the power generation business division. He is a third-generation RPI grad with an MBA from Union College.

New York’s lieutenant governor visited Extreme Molding, a 13-year-old business based in the Watervliet Arsenal and co-owned by Lynn Monrow-Zielinski ’86 and M.S. ’92. Extreme manufactures the top-selling baby product on Amazon and ships their products worldwide. Activities in 2016 will include expanding their manufacturing space and hiring more employees.

Kevin Schwartz (Comp.Sci.) has joined mobile app development company Lexitech as vice president, services. Prior to Lexitech, he held positions at Computer Sciences Corp., Aspect Software, Capgemini, and PWC.

Tremor Video announced that John Walsh (Comp.Sci.) has joined the company as chief technology officer. Prior to Tremor, he was CTO at CareCloud after being senior VP of engineering technology officer. Prior to Tremor, he was CTO at

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March Gallagher was named president and chief executive officer of Community Foundations of the Hudson Valley in September 2015. Prior to this, she was chief strategy officer at Hudson Valley Patriot for Progress, which focuses on regional quality of life issues. March has served on many boards in the Hudson Valley region and is currently on the Hudson Valley Agri-business Development Corp. and Touro College of Osteopathic Medicine boards.

Paul Lewandowski, AIA, IIDA, LEED AP joined Lavallee Brensinger Architects in Portland, Maine. His career has spanned being an adjunct professor at our alma mater, professor at Maine College of Art, and president-elect with IIDA New England.

Send news to: Joseph Hon ’89, 342 Westchester Ave. 31E, Port Chester, NY 10573; jehom@flash.net

Paul Spedero ’90

Capt. Paul Spedero took command of the Nimitz-class aircraft carrier USS Dwight D. Eisenhower Nov. 18. He came to the new command from the USS Peleliu, which he decommissioned in March 2015. Spedero is an experienced naval aviator who has previously served as the executive officer of the aircraft carrier USS Carl Vinson as well as the executive officer and later the commanding officer of the Sidewinders of Strike Fighter Squadron (VFA) 86. During his tour with the Sidewinders, he flew combat missions in support of Operation Iraqi Freedom and Operation Enduring Freedom.

Send news to: Rob Sherman ’90, 5927 Hawthorne Garden Way, Katy, TX 77494; robsherman@hotmail.com

25th Reunion: Oct. 6-9, 2016

Joe Juneau received the NCAA Silver Anniversary Award, in recognition of his collegiate and professional achievements. Juneau has over 22 years of experience in the intelligence community. Juneau has previously served as executive officer of the aircraft carrier USS Carl Vinson as well as the executive officer and later the commanding officer of the Sidewinders of Strike Fighter Squadron (VFA) 86. During his tour with the Sidewinders, he flew combat missions in support of Operation Iraqi Freedom and Operation Enduring Freedom.

Send news to: Richard Velchow ’91, 10 Catherine Place, Latham, NY 12110; rv9169@gmail.com

In October, David Spenciner, FASM, was awarded the title of fellow by the technical society ASM International. He started his association with ASM International while at RPI where he worked as an undergraduate in Prof. Minoru Tomozawa’s lab. David is very grateful for Dr. Tomozawa’s early mentorship and assistance obtaining a co-op position at Pratt & Whitney Aircraft.

David gave up working on turbines a long time ago and is currently employed by Mitek Sports Medicine. As a research fellow, David spends a good portion of his time inventing medical devices, and splits the remainder between leading and consulting on development efforts within R&D, and improving the clinical acumen of Mitek’s engineers.

David makes it back to RPI occasionally, when he guest lectures at one of Prof. Eric Ledet’s classes.
Mike Kane was named vice president of manufacturing and engineering for Ranch Hand last summer. He left Alabama for Texas, and while his office is in Shiner, he works in the Beeville plant weekly. His industry intelligence and innovative thinking is backed by a plethora of executive level positions, including vice president of manufacturing and past division president for a major retail company spanning eight business entities, chief operating officer for a $100 million organization with corporate, wholesale, and retail locations, and director of supply chain operations for a $1.5 billion division of a global technology corporation.

Randy Mitchelson, of the Southwest Florida Chapter of the Florida Public Relations Association, recently earned professional public relations accreditation, and received the designation of Accredited in Public Relations. Mitchelson is an entrepreneur, author, and community activist with more than 20 years of experience in sales, marketing, and financial services. He provides Internet and print marketing expertise to business clients through iPartnerMedia Inc., including website design, strategic lead generation, and public relations campaigns, social media, and search engine optimization. His community leadership roles include being co-founder of the Southwest Florida Regional Technology Partnership, and past president of the Seminole County board of directors for Boys and Girls Clubs of America.

From Sylvia Ramos (sylvianamosny@gmail.com):
“Great things are happening here. First I graduated with my M.Div. from Columbia Theological Seminary in Decatur, Ga., in May and was ordained by the Disciples of Christ this summer. Pat Caracena, who received her MBA in ‘93, came to the ordination. Also, my wife and I finalized the adoption of two kids, Max and Rainie, who are 15 and 12 respectively. We live in Norcross, Ga., and I work for Autotrader.com as a senior project manager. Life is good and busy.”

Send news to: Ileana Gonzalez ’93, 86 Ridge Lane, Newnan, GA 30263; igonzalez@alum.rpi.edu

W. Gregory Sawyer, the Ebaugh Professor in the Department of Mechanical and Aerospace Engineering at the University of Florida, delivered a commencement address to engineers at the university last May. Greg is director of UF’s Tribology Laboratory, where he focuses on the science of friction in everything from space vehicles to contact lenses. He has a total of 16 patents and patents pending and is the author of more than 100 journal articles. In March 2015 he was inducted into the National Academy of Inventors, a distinction accorded to academic inventors who have demonstrated a prolific spirit of innovation in creating or facilitating outstanding inventions.

In November, Kristin Knickerbocker celebrated the 15-year anniversary of Spring Line Design Architecture + Engineering (SLD), the East Greenbush, NY, firm she founded. SLD creates durable and healthy spaces and buildings which make best possible use of a project’s available resources throughout upstate New York’s “Tech Valley” and the Berkshires. SLD’s services include schematic design, space planning, building code analysis, energy code analysis, structural and architectural construction document preparation, and construction administration. Clients include state government agencies, municipalities, architects, engineers, commercial businesses, health-care facilities, educational institutions, historic places, and a select group of residential clients.

Send news to: Bill Wheeler ’94, 832 W. Agatite Ave., Unit 1N, Chicago, IL 60640; william_wheeler@yahoo.com

In June of 2015 Tony Artino Jr. was promoted to the rank of professor in the Department of Medicine at the Uniformed Services University of the Health Sciences (USUHS) in Bethesda, Md. At USUHS, Tony is also the deputy director for graduate programs in health professions education and is still on active duty as a commander in the Navy. Tony currently lives in Gaithersburg, Md., with his wife, Teri, their kids, Bella, Tre, Jack, and Aidan, and their new puppy, Rex.

Robert Feller was selected by his peers to be highlighted in the Best Lawyers in America 2016. Robert is an environmental law attorney. His principal areas of experience include water pollution, SEQRA and environmental impact review, real estate development, including the remediation and redevelopment of brownfields, and municipal law. Please join me in congratulating Robert!

Send news to: Michael Van Poots ’95, 275 Oak Grove Drive, Stoneville, NC 27048; michael_vanpoots.com

20th Reunion: Oct. 6-9, 2016
Hello, classmates. I hope you’ve all started to plan for our 20th Reunion Oct. 6-9. If you haven’t yet, there’s no better time to start getting ready to head back to Troy to reconnect with classmates and the campus.

Hector Eugui wrote in with an update on what has been an annual tradition since 2007. On Nov. 4, 2015, RPI structural engineering students, accompanied by the RPI civil engineering department chairman, Dr. Chris Letchford, traveled to New York City for an in-depth engineer’s tour of the George Washington Bridge. After an in-conference room discussion of the history and construction of the historic span, Hector brought the students outside to examine the bridge’s anchorage, roadway decks, and tours inside the towers. They culminated the tour with the annual group photo at the top of the New Jersey tower, 640 feet above the mighty Hudson River, overlooking Upper Manhattan and the Bronx from New Jersey. They were again blessed with beautiful weather for the event. The group of students then continued their day with a tour of the Brooklyn Bridge led by Robert Collyer ’76, NYC DOT bridges director, and also an RPI alum.

This past summer, Hector changed jobs within the Port Authority of NY & NJ, going from the manager of maintenance at the George Washington Bridge to manager of maintenance at LaGuardia Airport. He plans to stay in touch with Dr. Letchford, and next year may either continue...
with the tradition of the bridge tour, or may change gears and offer an in-depth tour of LaGuardia. Ultimately the decision may depend on progress of the multibillion-dollar redevelopment of the airport.

Congratulations to Christopher Reigle who was inducted into the Batavia Blue Devil Athletic Hall of Fame in September for his high school performance on the football and track and field teams.

Congratulations also go out to the following alumni for their recent promotions.

Kathleen Kay was appointed vice president, business technology, with Pacific Gas and Electric Co. in this new role she is responsible for business technology delivery, primarily focused on PG&E's strategic solutions such as mobile, data analytics, and customer applications. Prior to joining PG&E she worked for General Motors, Comerica Bank, and Sun Trust Bank.

Joonho Lee has been with the Federal Reserve Bank of New York and was recently promoted to senior vice president and group information officer for the Financial Institution Supervisory Group.

Darlene Knight was recently recognized on Automotive News’ list of 100 Leading Women in the North American Automotive Industry. This list is compiled every five years and celebrates leaders with significant influence in their companies. Darlene is responsible for Jonson Controls’ just-in-time seating business in North and South America, which includes 23 automotive seating plants and two regional offices.

Those are the updates for this installment of Alumni News. Send in your updates today and book your travel to Troy for our 20th Reunion, October 6-9!

Send news to: Hank Carbone ’96, 701 Cottage Avenue W, St. Paul, MN 55117; hcarbone@hotmail.com

Send news to: Kristen Fitzpatrick ’97, 57 Union Street, Watertown, MA 02472; kfitzpatrick@mba.com

Brandon Steets, P.E., was promoted to principal at Geosyntec last summer. Brandon is a water resources engineer with more than 10 years of experience in surface-water quality issues. He leads Geosyntec’s southern California surface-water monitoring practice and the Los Angeles region’s industrial stormwater practice.

David Messinger, Ph.D. ’98, has been named director of the Chester F. Carlson Center for Imaging Science at the Rochester Institute of Technology. He has been at RIT since 2002.

Send news to: Mike Johnson ‘98, 116 Carlin Ave., Port Allegany, PA 16743; mjohnson@alum.rpi.edu

Emily Grandstaff-Rice has been elevated to the American Institute of Architects College of Fellows. She is a senior associate at Arrowstreet Inc. in Boston, and served as president of the Boston Society of Architects in 2014.

Send news to: Erica Kulesza ’99, 161 West Kinzie, Apt., 1110, Chicago, IL 60654-4742; erica.kulesza@yahoo.com

Send news to: Bridget Olson ’00, 1505 Monroe St. NE, Washington, DC 20017; Bridget@alum.rpi.edu

Send news to: Mike Cooke ’01, 906 Lake Shore Ranch Drive, Sefner, FL 33584; themikecooke@yahoo.com

G. Nagesh Rao was one of 10 people selected as a 2016 USA Eisenhower Fellow. Fellows are given the opportunity to deepen their engagement with a global network of leaders in order to positively impact society through their work. Nagesh is chief technologist and entrepreneur-in-residence for the U.S. Small Business Administration.

Send news to: Elizabeth Trawinski ’02, 921 S. 8th Ave. #PCD4, Pocatello, ID 83209; ejello@alum.rpi.edu

Are you in the military? Are you entitled to TDY pay? If you are, why not make your life easier with Brian Bradick’s new app, MilPayTracker. His company, Guard Bums, LLC, just released the app for servicemen and women; it allows you to keep track of all of your expenses for reimbursement. The app was downloaded 500 times in just three days, and is free for all iOS and Android phones. Thank you for your service, Brian, and keep changing the world, one app at a time!

I look forward to bringing you lots of updates this year, but in order for that to happen you have to send them to me. Now that I have finally entered the 21st century and found the Class of 2003 Facebook page, leave me your updates there, or email me, or invent a new way to contact me.

Send news to: Ed DerGurahian ’03, 37 Clifford Road, Menands, NY 12204; dergurahian@gmail.com

Send news to: Tom Reale ’04, 54 Pointview Drive, Troy, NY 12180; ralet@gmail.com

Happy Spring, Class of 2005! Please join me in congratulating our classmate, Jacob Apkarian. Jacob earned his Ph.D. from the University of California at Riverside and has joined Virginia Tech as an assistant professor in the Department of Sociology. His research areas include organizational behavior, political economy, and social networks, and he will be teaching social research methods at Virginia Tech.

The Karaffa family, Katie ’05 and Tyler ’03, welcomed baby No. 3 in November 2014, and in their ninth year of marriage, they are going to welcome baby No. 4 in July! They are living in Woodbury, Wash., while Tyler is stationed in Whidbey, flying P-3s.

John Dorsey has been named a partner in the law firm of Ferrucci Russo. He joined the firm in 2010 and has served as counsel to court-appointed receivers in state Superior Court. He was named in 2015 to the Superior Court panel of receivers.

Admitted to practice in Rhode Island and Massachusetts, Dorsey earned his J.D. at Roger Williams School of Law. He was named a “Rising Star” in the area of real estate law in 2015 by Super Lawyers. He is a member of the board of directors for the Quonset Development Corporation and a member of both the RI Black Business Association and the Thurgood Marshall Law Society. He lives in Exeter, RI.

Sarah Nurie joined the Department of Industrial Engineering at the University of Arkansas this fall as an assistant professor. She earned her B.S. in math, M.E. in industrial and management engineering, and Ph.D. in decision sciences and engineering systems, all at Rensselaer.

Send news to: Alex Salinsky ’07, 5029 Congress Ave., Oakland, CA 94601; alexsalinsky@gmail.com

Wedding bells are in the air again for the Class of 2006! Dr. Carolyn (Gosztyla) Penfold married Robert Penfold (Lehigh ’09) on May 24, 2015, at a small ceremony on Martha’s Vineyard, surrounded by friends and family.

Other RPI alumni in attendance included the bride’s father, John Gosztyla ’73, Tim ’05 and Jennifer Jones ’06, Alyssa Kowcz ’09, and Kaity Farrell ’10. The happy couple now lives in Silver Spring, Md. Congratulations!

Dr. Brandon Graver and Dr. Alicain Carlson tied the knot on Sept. 5, 2015, in Manassas, Va. Alicain is a graduate of Virginia Tech, and met Brandon while they were in graduate school at North Carolina State University. RPI alumni in attendance at the wedding included James Hyde ’72, Trent Gillaspie, Thomas Boetig ’06, Carolyn (Gosztyla) Penfold, Mary Jo (Sorrentino)
I have a few notes this time around about Class of 2009 folks moving up in the world. First off, Casey Crossley received some great news recently that he has completed the requirements for licensing as a registered architect. Casey works for architecture+, a design and service-oriented architecture and planning firm in Troy. Congratulations, Casey!

I am also excited to report that two RPI grads with ties to the Class of ’09 have accepted positions as professors. First, Victor Barranca Jr. (B.S. ’09, Ph.D. ’13) started working this fall as a professor of mathematics at Swarthmore College in Pennsylvania after spending time as a postdoctoral research associate for the Courant Institute of Mathematical Sciences and New York University Abu Dhabi. And we have more good news from Liang Song (Ph.D. ’09). Liang has been offered a faculty position at UMass Dartmouth as an assistant professor of accounting and finance. Congratulations, Victor and Liang!

Please send any wedding, baby, professorship, commissioning, or other updates to jhugaman@alum.rpi.edu.

Send news to: Jordan Hagaman ’09, 117 Brookwood Ave., Wilmington, NC 28403; jhugaman@alum.rpi.edu

Casey Crossley ’09

Class of 2012 civil engineering friends recently traveled together to the Southwest. Shown in front of the Hoover Dam are Lenny Lustrino, Yoandi Interian, Patrick Kenny, and Douglas Das.
**IN MEMORIAM**

Remembering Vic Hurst ’89

Rensselaer NASA ties run deep  |  BY DON BURGIO ’89

RENSSELAER OFTEN CELEBRATES the likes of NASA greats such as George M. Low ’48 and astronauts Rick Mastracchio ’87 and Reid Wiseman ’97. But many others have toiled behind the scenes to make NASA's many accomplishments a success, including Victor W. Hurst IV ’89, who passed away unexpectedly in October at age 48.

Dr. Hurst was a research scientist and instructor, employed by Wyle Science, at NASA's Johnson Space Center (JSC) in Houston. Astronaut Kjell Lindgren, in a video eulogy recorded aboard the International Space Station (ISS), stated, “I don't know if anyone was more enthusiastic and professional about being involved in human space flight” than Vic.

Dr. Lindgren, as spokesman, floating with the five other Expedition 45 members aboard the ISS, noted that they had all come in contact with Vic during their training and were “shocked and saddened” to hear about his death. Vic had trained 67 ISS astronauts and cosmonauts from eight different countries. Dr. Lindgren then went on to play “Amazing Grace” on the bagpipes, a feat believed to be a first in space.

The last time I saw Vic was last May in Houston. He gave a “wicked awesome” tour of the JSC. While other tourists were confined behind glass walls, we had the equivalent of an all-access backstage pass as we sat in the historic Mission Control Center chairs where the Apollo missions were monitored, and then climbed aboard the Space Shuttle and ISS training mock-ups and were treated to Vic's tutorial on how space toilets work. Also along for the tour were Taris Vrcek ’91 and Taris’ 18-year-old goddaughter, who decided to pursue physics in college after meeting Vic.

RIP, Victor.

Don Burgio ’89 earned a B.S. in electrical engineering and currently lives in Dallas, Texas, where he leads a Verizon team focused on cybersecurity and analytics. Don is a fraternity brother and was a college roommate of Vic’s, and the two kept in touch over the years, with Don serving as a Houston hurricane evacuation destination for Vic.
Rensselaer students expect the world to be radically transformed in their lifetimes, with the pace of change accelerating. Futurists tell us they will need to reinvent themselves in their careers. Like our alumni and alumnae before them, our students understand their lives will be full of surprises that will demand flexibility and dedication.

The Rensselaer community is committed to preparing this next generation for disruptions and opportunities, providing the capabilities, perspectives, communications skills, and values that will enable them to lead transformation, with understanding, daring, and judgment. The Rensselaer Annual Fund helps to provide a world-class educational experience to our students, helping to prepare them to meet the demands and challenges of the 21st century. Gifts to the Rensselaer Annual Fund are essential to this mission.

Please join us in supporting our students with your gift to the Rensselaer Annual Fund. Signing up for a recurring gift today will help Rensselaer provide steady and reliable support for our students and faculty through a monthly, quarterly, or annual gift. Give.rpi.edu/future.
From concerts to class and club meetings, research projects, residencies, and the student-run Terra Cafe, EMPAC is a hub of campus activity at Rensselaer. With over 350 events taking place every year within its venues, production spaces, and common areas, students from all five schools use EMPAC as a dynamic forum for performance, study, work, celebration, collaboration, and intellectual exchange across the boundaries of major and expertise.