OUR NEW WORLD OF POSSIBILITY
A LOOK AT THE INSTITUTE TWO YEARS AFTER THE AFFILIATION WITH NYU
DID YOU KNOW?

Mario Cardullo ’57 ’59 received the first patent for an active RFID tag on January 23, 1973.
Dear Members of the NYU-Poly Community,

By now you have had a chance to enjoy three solid issues of the redesigned Cable magazine. The new Cable features faculty-authored articles, extended coverage of the individual and collaborative research being undertaken at NYU-Poly and with our colleagues at NYU, prestigious grants and fellowships awarded to our faculty and students as well as the transformation of our Brooklyn campus into a showcase for 21st century green technology.

With the 2010-11 academic year less than a month away, we thought it would be a good time to get your comments about Cable in all of its iterations—the hardcopy magazine you receive in the mail, the online version of the magazine posted on the alumni website and Digital Cable, which among other things provides links to videos and other resources not contained in the traditional Cable.

The Cable Readership Survey is posted on this link www.poly.edu/cablesurvey.

Please take a few minutes to complete the survey. Your response will help us to deliver a dynamic publication that will keep you involved and interested in the exciting changes at the Institute.

Enjoy a wonderful and safe summer.

Michelle Kerr
Editor, Cable

Anthony Kapp
Director of Alumni Relations

About the Cable Survey

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Chief of Naval Operations Tours NYU-Poly Campus
Admiral Roughead fields questions from students regarding the navy’s cybersecurity initiative.

On a warm, spring afternoon, NYU-Poly welcomed Admiral Gary Roughead, advisor to President Barak Obama, chief of naval operations and the highest-ranking officer in the navy, to the Brooklyn campus. During his visit, he received a guided tour of the campus by President Jerry Hultin.

It was the only visit he would pay to any school during his trip to New York. His visit highlighted the importance of technology to the navy: “The navy is known for having been on the forefront of many technological advances,” said Roughead. “Technology is very much a part of who we are.”

At the historic Wunsch Building, undergraduate and graduate students met the admiral and the handful of navy personnel who accompanied him. Attendees highlighted NYU-Poly’s global diversity and represented a spectrum of majors including construction management, mechanical engineering, computer engineering and financial engineering.

“The navy is known for having been on the forefront of many technological advances”

-Admiral Gary Roughead

The students asked the admiral about his decision to join the navy and about its work environment. “I can’t think of another profession where you’re surrounded by so many young people,” Admiral Roughead said. The “passion to serve,” as Admiral Roughead put it, is a trait the navy seeks among candidates.

Academic excellence is also important, he said, with the STEM — science, technology, engineering and mathematics — fields especially important. “It’s where we have to go in the future” for highly educated officers that the navy needs, he said.

NYU-Poly’s contribution to that future of high technology was outlined by faculty who recently worked with the navy or who are researching topics with potential ties to its needs. The admiral met with faculty—among them were Assistant Professors Nikhil Gupta and Maurizio Porfiri, Mechanical and Aerospace Engineering, who described research collaborations with the U.S. Navy, and Professor Nasir Memon, Computer Science and Engineering, who spoke of novel authentication techniques and their possible application for the navy’s unmanned vehicles.

Provost Dianne Rekow introduced the admiral to the Institute’s Innovation Think Tank (ITT), an initiative that gathers selected academics from multiple disciplines for one semester to solve a given problem. Charles Camarda ’74AE, Distinguished Engineer-in-Residence at NYU-Poly and a NASA astronaut, is this semester’s ITT leader. Camarda’s description of the ITT’s work with NASA sparked an invitation from Admiral Roughead for all faculty to consider future collaborations with the U.S. Navy.

Admiral Roughead and President Hultin look on as a student demonstrates her work in Professor Gunter Georgi’s freshman engineering course.
THE NYU-POLY NEW WORLD OF POSSIBILITY

A look at the Institute two years after the affiliation with NYU
As an award-winning researcher who has done pioneering work at the intersection of engineering and biology, Rastislav Levicky is used to solving thorny problems. In this case, however, the Donald F. Othmer Associate Professor of Chemical and Biological Engineering had hit a snag.

Levicky and his graduate students were modeling the behavior of synthetic DNA-like molecules to make more accurate and efficient bio-detectors: electronic devices that scan for biological molecules like gene fragments and bacteria. There is a large and growing market for such instruments, with established companies and emerging startups all vying to come up with the next breakthrough technology.

Levicky’s approach, which employs synthetic rather than natural DNA to bind with and identify dangerous environmental pathogens such as E. coli and Staphylococcus, could make existing bio-detection systems more reliable and less expensive. But turning it into a viable technology will require understanding how synthetic DNA binds to the real thing. And Levicky had reached a point in his research where he could not explain some of the data that he and his team had collected.

So he called a couple of colleagues: the NYU chemists Nadrian Seeman and James Canary, both of whom work with Levicky on a project to develop better models for designing synthetic DNA and understanding its behavior. Together, they comprise one of 21 collaborative teams made up of NYU and NYU-Poly faculty that NYU has funded to the tune of $1.5 million since Polytechnic entered into an affiliation with the university.

“They said, ‘Well, take a look at this phosphorous molecule—it’s chiral,’” says Levicky, using the technical term for a molecule that has distinct left-handed and right-handed forms. “That could explain some of the behavior.” It did, and the chemical feature that Seeman and Canary had noticed was not the kind of thing that would have been obvious to Levicky or his students. “A chemist and an engineer, looking at the same phenomenon, see complementary things,” Levicky says.

Seeman, who invented structural DNA nanotechnology, sees similar benefits to their collaboration. “My own research has come closer and closer to engineering during my career, so the addition of an engineering school at NYU was really important to me,” he says. “I’m working on projects that I might not have contemplated earlier.” Seeman adds that Levicky brings not only specific technical expertise to their work, but also an engineer’s unique perspective on science and technology. “The ability to reduce a scientific idea to a working device is invaluable,” he says.

The affiliation with NYU, an agreement that turned Polytechnic University into Polytechnic Institute of New York University, and that will ultimately lead to a merger in which NYU-Poly will become NYU’s school of engineering and technology became official in July 2008. Yet the work that Levicky, Seeman and Canary are pursuing illustrates in microcosm the tangible benefits that have already accrued to both institutions, and the promise of far more to come—for NYU, NYU-Poly and the world beyond their doors.

From the very outset of the negotiations—a process that was led on the NYU-Poly side by...
President Jerry Hultin, then-Board Chairman Craig Matthews, his successor Ralph Alexander and former Provost Erich Kunhardt; and on the NYU side by President John Sexton, Board Chairman Marty Lipton, Provost David McLaughlin and Senior Vice-Provost Dianne Rekow (now provost for NYU-Poly)—the advantages for both institutions were clear.

“The biggest reason for the affiliation was to accelerate the strategic growth of Poly,” says Hultin, noting that the relationship will further enhance the quality of the school’s faculty, students and facilities, while providing access to the resources, recruiting power and fundraising network of a global research university. Even at this early date, the results are impressive: enrollments and SAT scores are up, NYU-Poly is drawing far more students from beyond its traditional recruiting grounds, and NYU is making available $50 million for new faculty hires and campus upgrades.

NYU, which today is one of the top ranking academic institutions in the nation, once again has access to a school of engineering and technology, something it lost in 1973 when its own College of Engineering, located at the old University Heights campus in the Bronx, merged with Poly. The recent affiliation and subsequent merger will, therefore, significantly enhance the university’s scientific resources and technical capacity, creating a unique regional engine for invention, innovation and entrepreneurship—the three pillars of NYU-Poly’s i2e philosophy.

And that, in turn, will be a boon to the city of New York. Following the financial crisis of 2008, the mayor’s office recognized that if the city’s economy were to recover and grow, it needed to diversify—namely, by developing a healthy entrepreneurial tech sector of the sort that exists in San Francisco and Boston. By establishing a scientific and technological powerhouse capable of driving innovation all the way from the laboratory to the marketplace, the affiliation promises to help fill a gap in New York City’s economic landscape.

It will also extend NYU-Poly’s reach well beyond the city itself. NYU has 10 international sites on five continents; with that kind of international footprint, NYU-Poly will be in a position to spread the message of i2e both near and far, providing technological solutions to problems faced around the globe. For example, the engineering program at NYU Abu Dhabi was established by NYU-Poly, developed by its faculty and is led by Associate Provost Sunil Kumar, who serves as dean of the program. The inclusion of biotechnology and biochemical engineering in the curriculum is expected to help “green” the Emirates by producing young engineers...
who can help move the region toward a non-petroleum economy.

As the explosive growth in well-funded joint projects between NYU and NYU-Poly faculty demonstrates, such expectations are already being met. Three rounds of seed grants have been awarded for research in areas ranging from physics to dentistry, and other collaborative projects between NYU and NYU-Poly faculty have already attracted millions of dollars from external sources like Microsoft Research and the National Science Foundation. “What we are experiencing here usually takes years to realize,” says McLaughlin, the NYU provost. “Our faculty members are experiencing collaborative relationships with faculty and students at NYU-Poly that take research projects from inception to development to completion and into society.”

Examples of such productive teamwork abound. Mel Horwitch, a professor of technology management at NYU-Poly, and Ari Ginsberg, a professor of management and entrepreneurship at NYU’s Stern School of Business, have joined forces to create CleantechExecs, an executive training program that teaches senior managers how to market, finance and support clean technologies. In analyzing existing green technology programs at other universities, Horwitch and Ginsberg discovered that most focused on the process of manufacturing high-tech products and systems, while ignoring the question of how to promote and invest in such technologies in a city like New York, where manufacturing takes a backseat to sectors like financial services, real estate, and insurance. So they designed a unique program to give experienced executives the skills to start their own clean-tech businesses and to support green technology at existing companies.

“This program shows how the affiliation has benefit for the larger community,” says Horwitch. “We can help make New York a center of clean technology management and entrepreneurship.”

“I would never have worked as closely with Ari on a programmatic basis unless we had joined with NYU,” he adds.

The first group of trainees attended tuition-free thanks to a $1.5 million grant from the New York State Energy Research and Development Authority (NYSERDA); and workshops were held at 160 Varick Street, the Manhattan incubator that NYU-Poly launched in partnership with New York City and Trinity Real Estate in February 2009. Bruce Niswander, the incubator’s director, says that it has benefited from the affiliation, as well. 160 Varick Street allows participating businesses to enlist student workers, either for pay or for course credit. It’s an ideal realization of the i2e concept: a system that lets NYU-Poly help get innovative companies off the ground, while providing small businesses with limited budgets access to talented workers. “It’s great for students, and it’s great for the companies,” Niswander says. And the affiliation has only made things better by adding NYU students to the mix, further enriching the talent pool.

NYU HAS COMMITTED $50 MILLION FOR HIRING NEW FACULTY AND UPDATING THE BROOKLYN CAMPUS
Niswander has also been presenting patents held by NYU-Poly faculty to Ari Ginsberg’s students at Stern to see if they can come up with viable commercialization strategies. “We’ve been getting a higher velocity of stuff coming from our professors,” he says. “There’s much more interest in taking an old patent and seeing if it’s got commercial potential.”

If the affiliation has opened up a host of fresh opportunities for collaboration and synergy between the two institutions, it has also prompted enhancements to NYU-Poly’s own faculty and curriculum. With financial support from NYU, the school is currently recruiting new faculty in key areas that specifically align with its Strategic Plan; and new courses centered upon i2e are being introduced, including undergraduate offerings in engineering computation, simulation and design. Students, meanwhile, can now cross-register for classes at both institutions.

Michael Hailemariam ’10CBE was one of the 50 students at both the graduate and undergraduate levels who took advantage of cross-registration. The sociology classes that he attended at NYU exerted a powerful influence on his attitudes toward engineering and its social implications.

“You get to interact with students who aren’t in engineering, and it gives you a different perspective, influencing what you want to do,” he says. “If I can innovate and create and develop new technology, how is that technology going to affect the society that’s going to receive it?”

The affiliation allowed Hailemariam to apply such comprehensive thinking to real-world challenges. He was involved in two student competitions that were limited to teams containing NYU students: the Stern Social Venture Competition, which offers a $100,000 prize to students and alumni who use their entrepreneurial skills to come up with innovative solutions to social problems both here and abroad; and the NYU Reynolds/Youth Venture “Be a Challenger Challenge,” which offers $1,000 in seed money to 25 teams whose projects benefit the community and a $10,000 prize. (In a separate development, Evangelos Limpantoudis, who will begin work on an MS in construction management this fall, recently became the first NYU-Poly student to receive the Catherine B. Reynolds Foundation Fellowship for Social Entrepreneurship. See page 25.)

Hailemariam’s teammates included a Stern MBA student, an NYU undergraduate, and eight other NYU-Poly undergrads. Together, they worked to create innovative technologies for the developing world: the Stern Social team refined solar technology for use in cell phones and other electronic accessories, while the Reynolds team built a web application to help NGOs coordinate and share resources.

None of these opportunities would have been available without the affiliation, says Hailemariam, who also appreciates his...
newfound ability to use the databases in NYU’s library system to perform research and analysis for his teammates. NYU and NYU-Poly students can now use their ID badges to gain access to most facilities at either institution, including libraries, student centers and bookstores. NYU-Poly’s counseling and psychological services have been supplemented by NYU’s, as well. In addition, NYU-Poly alumni can enjoy special events, club memberships, access to NYU libraries and discounts for car rental, hotels and travel.

Over time, NYU-Poly’s own facilities will also profit from the affiliation. The $50 million that NYU has made available for both faculty hires and campus upgrades will help expand its research laboratories, modernize NYU-Poly’s classrooms and provide innovative workspaces for faculty and student collaboration. And those improvements are just part of a larger redesign, “i2e Campus Transformation,” that will play out over the next 10 years; sustainability is a driving principle, and the Jonathan Rose Companies, a “green” real estate policy, planning and development firm, acts as the owner’s representative for the school.

As that decade-long timeline suggests, the effects of the affiliation on NYU-Poly’s physical plant, as on so many other aspects of the institution, have only just begun. For all the benefits that have already materialized, the best is yet to come “We’ve accelerated the strategic growth of Poly and given NYU a strong engineering partner. And that’s not just good for NYU and NYU-Poly,” says Hultin. “Inventing new technology is the only way we’re going to solve global issues like climate change, healthcare and job creation.”

Thanks to the affiliation, he adds, “i2e is going to have a lot of power in the 21st century.”

“Inventing new technology is the only way we’re going to solve global issues like climate change, healthcare and job creation.”

-Jerry Hultin

36%
Students coming from outside of Poly’s traditional geographic recruiting area

57
Countries

37
States
Stephen Arnold, Thomas Potts Professor of Physics and Institute Professor of Chemistry and Physics, remembers the Eureka moment when he solved the physical puzzle at the heart of his project.

Arnold works with light-powered sensors to detect nanoparticles suspended in solution. Each sensor consists of a miniature glass bead, or microsphere; laser light is made to circle endlessly around the interior of the bead, generating a light field just beyond it. Particles moving through the field create fluctuations in it, thereby, revealing their presence.

But sensing rates seem to be much faster than they should be, given how slowly one would expect particles to drift randomly toward the sensor. So Arnold, who applied for seed funding with NYU physicist David Grier, asked David Keng, an NYU-Poly graduate student, to run some tests on the particles floating around a sensor in his lab.

“He ran back into the lab after around an hour and said, ‘They’re in orbit!’” Arnold recalls. “I remembered that I distinctly said, ‘We’re moving them with massless particles; I think we’ve created an optical tractor beam.’” (To see what Keng saw, go to NYU-Poly’s channel on YouTube.com and search for “Whispering Gallery Mode Carousel.”)

After months of more detailed measurements, Arnold confirmed that the light field around the sensor was indeed driving the particles around the sphere, while simultaneously pulling them towards it 50 times faster than one would expect. The phenomenon could be used to build biodetectors capable of rapidly sensing something as small as a single influenza virus.

Arnold recently won a $400,000 grant from the National Science Foundation to continue this research, and has filed a patent on several inventions that could flow from it.

Top seeded

Last March, New York University Provost David McLaughlin announced the first 15 research collaborations between NYU and NYU-Poly faculty to receive “seed” funding from a special competitive research pool.

As that first batch of projects nears completion, results are beginning to pour in -- and more than a few good ideas have taken root.
Nikhil Gupta, an assistant professor of mechanical and aerospace engineering at NYU-Poly, and Paulo Coelho, assistant professor from NYU’s Department of Biomaterials and Biomimetics, chose to investigate multiple aspects of how natural and man-made composite materials behave under pressure. Now they’re reaping multiple rewards. “We’re probably going to have to start dividing this thing into three or four different pieces,” Coelho says.

In addition to running computer simulations of how bones shift around biomedical implants, a subject with implications for dentistry and orthopaedics, the pair also looked at how the engineered composites used in battlefield armor and the natural ones that comprise bone behave when battered by shockwaves—a topic of considerable interest to the military.

“There are two problems when IEDs explode,” says Gupta, referring to the improvised explosive devices that have wreaked havoc on American troops in Iraq. “All the debris, the gravel and sand covering the IED, are accelerated. If people are wearing ballistic armor, that can save them from the impact. But it can’t protect them from the shockwave, which passes right through it.”

Using specialized equipment built by Gupta and his students, the researchers examined how rabbit femur bones held up under pressure. “It’s important to see how they fracture, and what the mechanisms are, in order to reverse-engineer armor that would protect against shockwaves,” Coelho says. They also studied the microscopic structure of engineered composites that are used to make protective gear.

Vasanth Shunmugasamy, an NYU-Poly student who did much of the testing and analysis, received an award for the master’s thesis he wrote summarizing the work. And Gupta along with Assistant Professor Maurizio Porfiri has already landed a $2 million grant from the navy to study marine composites for blast and impact response.

Nikhil Gupta, left, and Paulo Coelho

L-R, Rastislav Levicky, Nadrian Seeman and James Canary

Call it a match made in heaven—or at least in the lab. Rastislav Levicky, an associate professor of chemical and biological engineering, uses a synthetic DNA-like molecule called morpholino to bind with and identify the natural DNA from dangerous pathogens. The NYU chemists James Canary and Nadrian Seeman use both natural and synthetic DNA to assemble nanoscale structures. By pooling their respective expertise, both groups came out ahead.

Canary and Seeman, for example, borrowed Levicky’s technical know-how to learn more about morpholino and how they might use it. “We drew on his expertise to test out some structural characteristics of the molecule, to see if we could incorporate it into our designs,” Canary says.

And Levicky drew on his colleagues’ expertise to better understand exactly how natural and synthetic DNA bind to one another—a crucial step towards building a commercially viable biodetector, which could happen within a year or two.

Now Levicky would like to begin testing a synthetic DNA molecule that Canary and Seeman have developed. They, in turn, are already planning additional experiments of their own.

“We’re learning a lot from each other,” Levicky says, “and we’re very much looking forward to continuing this productive collaboration.”

To date, three rounds of seed grants have initiated 33 collaborative research projects involving researchers from eight departments at NYU-Poly and seven schools of NYU. Several projects have already resulted in joint publications and in follow-on research proposals to federal funding agencies such as the National Science Foundation and the National Institutes of Health.
what is research?

REFLECTING ABOUT RESEARCH PRACTICE(S)

by Anne-Laure Fayard, Assistant Professor, Department of Technology Management

“Researchers, as workers, can and should care deeply about their work—not being simply possessive about its products or jealous of their research reputations, but find deep and satisfying meaning in their work (...) the researcher if more than merely competent will be ‘in the work’—emotionally and intellectually—and often will be profoundly affected by experiences engendered by the research process itself.”

-Anselm L. Strauss, Qualitative Analysis for Social Scientists
—As an academic, research is part of my life, a sort of tacit assumption that I share with my colleagues at NYU-Poly and scholars in other institutions. Yet, as years have passed, from my dissertation in cognitive sciences to my work in human-computer interaction and my research in social sciences to my recent work with artists and designers, I realized that the question “what is research?”—what do we have in mind when we talk about “research?”—is worth asking and the answer not a simple one. In this essay, I would like to start a reflection and hopefully encourage a dialogue on this exciting activity we are all engaged in—research.

Such a reflection is timely in the context of i2e and the collaborations it invites. There is also a lot of encouragement for interdisciplinary research, from policy makers and research founders, and it is generally seen as a “good thing.” Yet the reality is that it is often very difficult to execute. For instance, the definition and the evaluation of the outputs (e.g., prototypes, patents or papers) vary across the disciplines, and the results of interdisciplinary work might well be regarded as below the standard that each individual discipline seeks to impose on its own work. Consequently, those engaging in interdisciplinary projects might lose rather than gain credibility in their own “home discipline.” One of the reasons is that each discipline presupposes a certain definition of what “good” research, or simply of what research is.

**From philosophy via cognitive sciences and design to social sciences and art research**

I’ve always been interested in combining different disciplines. My original attraction for philosophy is related to this interest, as philosophy is essentially a way of asking questions. Philosophy is always a reflection about a topic; one does philosophy of science, philosophy of art, moral philosophy, political philosophy, etc. Cognitive sciences attracted me because of their interdisciplinary nature. My dissertation work was interdisciplinary: looking at a debate among psychologists and neuroscientists, the debate on the nature and role of mental images, from a philosophical perspective. I loved working on this question, trying to analyze the different perspectives involved, “turning around the object” to get a richer picture and a deeper understanding. The members of the dissertation jury, two philosophers, a neuroscientist and a psychologist, all thought it was an interesting and original piece of work, but each thought it did not belong to their respective field.

I did not give up on the interdisciplinary approach. On the contrary, I went to work with designers, engineers and computer scientists on a participatory design project with air traffic controllers. This led me to investigate more explicitly interdisciplinary work and triangulation (Mackay and Fayed, 1997). My current research is an attempt to examine a problem in organization studies using a lens from another discipline, be it philosophy, psychology or history. I continued my reflection as I embarked last year on collaboration with Aileen Wilson, an artist and educational scholar from the Pratt Institute with whom I designed an interactive, multimedia installation, “building_space_with_words” (Wunsch Building, NYU-Poly, March 2009).

Because of my personal interest in installation works and new media art, I thought of using art as a language to present my work and invited Aileen to join my investigation. I was curious to present research ideas outside of the usual frame of an academic paper and to explore different methods for visualizing findings. The collaboration became more than an exercise in visualization. I examined the relationships between two streams of my research in the context of the installation project—using the installation project as a scaffolding space to explore ideas. The installation became an epistemic object, i.e., “processes and projections rather than definitive things (…) more like open drawers filled with folders extending indefinitely into the depths of a dark closet” (Knorr-Cetina, 1997).

I revisited this question while organizing with Bruce Tether (Imperial College) a workshop on multi-disciplinary research at the Royal College of Art in January 2010. We invited the participation of scholars doing research in engineering, design and social sciences with the purpose of examining the barriers, challenges and rewards to multi-disciplinary work. As we were putting the workshop together, the question “what is research?” emerged. I found myself wondering how to define research and come up with a common definition that would encompass the variety of methods and approaches across as well as within disciplines. At first sight, this seems a difficult, maybe impossible question to answer. Indeed, researchers, educated in specific traditions, operate within paradigms (Kuhn, 1962), that dictate which questions are considered “interesting” and which specific methods can be used to address those questions. Yet, if one wants to entertain the possibility of multi-disciplinary research, it is indispensable to define a common ground that allows researchers to share “interesting” questions and build on the differences of perspectives and methods.

Taking seriously the differences in the different productions of research, I curated “Investigatio” (in Latin, “thorough search,” “investigation”), a group exhibition exploring research through the presentation of research works from different disciplines (Hockney Gallery, RCA, January 2010). It aimed to define research by presenting different outputs and methods, thereby illustrating the multiplicity of meanings research can entail. Several researchers—sociologists, designers and artists—presented their work. The intention was to offer to the visitor a palette of research work to highlight similarities and differences, and hopefully illuminate what research “is”—its objects, methods, practices and productions.
cross boundaries—borrowing techniques from one field to explore questions raised in other disciplines. All were defined as research work by their authors.

From “what” to “how”: a phenomenological exploration

When you ask “what is research?” you ask the question in essentialist terms as if you could ignore the multiplicity of meanings—objects, practices, productions—associated with the word research. Yet, how to compare the research work of the scientist on a laboratory bench, of the engineer building a model, of the ethnographer in the field, of the designer creating new objects? Are we then only left with a motley of practices, objects studied and productions of research that have nothing in common, various paradigms which share little and cannot communicate?

One alternative is to abandon an essentialist approach for a phenomenological one—to move from what to how, taking an exploratory and descriptive approach that could allow us to identify shared characteristics of research. The question then becomes: how can we recognize, identify research?

Curating “Investigatio” was such an attempt at a phenomenological exploration. Beyond the differences in their form (artifacts, drawing, video, photos, text, etc.), the works exhibited presented some similarities in their questioning process. They suggested the possibilities of rich interactions across disciplines, beyond traditional divisions, while still maintaining open the question of what research is—which may be an ongoing reflection at the heart of all research practice. The design of the space itself—conceived as work in progress, scaffolding—reflected this continuous process with which visitors were invited to engage by writing down on a card their definition of research.

Thinking with our hands...thinking-in-action

As I was working on “building_space_with_words,” I reflected on the materiality of the work, so different in practice from field notes, the analysis and the writing on paper. Instead of my notebook, my recorder (sometimes a camera or a video camera), and my laptop, here I was with fabric, ladders and projectors trying to create a space that would invite visitors to question and reflect. This reminded me of my experience of prototyping during the project with the air traffic controllers and triggered a reflection on the process highlighting the scaffolding nature of research and thinking. One does not think if one “knows”... This might sound very Socratic but I feel there is something similar in a constant exploration, a re-search. Who said that if we knew what we would find, we would not do research, but search?

This process-in-action is very well described by the designer Terry Rosenberg as he defines what he calls “ideational drawing” as a process and always in-process; thinking-in-action and action-as-thinking” (2008, p. 109). It is a drafting process and it includes not only the production—the drawing—but also the act of drafting. Ideational drawing is evocative of my notes in notebooks and on small pieces of paper. It also reminds me of the correspondences of intellectuals during the Republic of Letters who exchanged ideas, challenging each other, developing their ideas and exploring new ones. This is thinking with words, thinking with your hand holding the pen—taking notes, writing letters (or even typing on the keyboard). There is something similar in the act of writing and drawing: drafting, scaffolding intuitions and complex ideas, objectifying them for yourselves and others, so that you can interact with them.

The work with Aileen (Wilson), drawing, prototyping and building an installation was a way of thinking out loud, sharing and developing ideas. More than that, the process is a metaphor of what thinking is about—this ongoing process of drafting, scaffolding.
From an illustrative to a generative form

As you write an academic paper, you focus on illustrating the findings and theory to be published. Yet, one must not forget that the paper’s value does not lie so much in its illustrative rather than its generative nature. To make a contribution, a research piece should not merely illustrate an idea, but generate others.

Art and design research reminds us of the importance of nurturing generative forms. Working with Aileen it became particularly crucial that the project must move beyond the mere presenting of ideas; it must in and of itself become a new idea. Art practice as a research practice is distinct from other research practices as “arts research calls for a different set of categories where the arts do not search for stuff or facts, but they generate it.” (Baldacchino, 2009, p.4)

“building_space_with_words” started to present research became “something else,” an open form definitely, a form of “purpose without purposeness” (Baldacchino, 2009). The research question re-emerged, brought us back—nearly “by surprise” to our research questions, providing us with rich insights and data to explore. Similarly, curating “Investigatio” started with the idea of presenting ideas that emerged while preparing the workshop but once again, through the collaboration with the exhibition space designer and the conversations with the different participants, it led me beyond a mere illustration of ideas to the generation of new ideas. This attention to generative forms requires “a constant questioning and doubting of what we are doing, searching for holes, contradictions, weaknesses, etc.” (Dunne, 2008) which preserves an intellectual rigor and allows us to imagine new questions. Thus, the “other” and her different perspective are crucial, allowing us to reflect about and question our practice.

Opening my drawers

To finish, I thought I’d open my drawers and share some key words, ideas and quotes I found there—some jotted on the “Investigatio” cards, others that emerged from my readings and discussions.

**Process:** questioning, hypothesizing, doubting; rigor and imagination; what if; play; discovery; investigate; poke around; find out; critical…

**Material / medium:** objects, molecule, code, observations, interviews, discourse, drawing, fabrics, dependent and independent variables, circuits, figures, books…

**Dialogue:** with the “work” (research question, data, variables), with the literature and your peers, with yourself, with the public; new meanings emerging through interactions…

**Journey:** ongoing, scaffolding, peregrination, curiosity, frustration, passion, “No, it is not the goal but the way there that matters, and the harder the way, the more worthwhile the journey.” (British explorer, Wilfred Thesiger)

Acknowledgement: I would like to thank Aileen Wilson and Milena Nuti for engaging with me in this ongoing exciting conversation.

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The class of 2010 closed the first decade of the 21st century and entered the world as graduates of Polytechnic Institute of New York University. Friends, classmates and family members dressed up for commencement exercises at Radio City Music Hall where they waited patiently on a two-block line to the building’s iconic entrance.
Once inside, they united with the graduates, who had arrived early to prepare for the event. Lights flashed as families took photos of graduates posing against the impressive backdrop of the landmark building’s interior with its lighted crystal chandeliers, grand staircases and gold, embossed doors. A loudspeaker invited guests to take their seats, and soon the familiar strains of “Pomp and Circumstance” greeted undergraduate, graduate and doctoral students as they filed into the main hall. Some of their faces could be seen in the revolving gallery of photos projected onto a large screen facing attendees, who were entertained by images of students conducting lab experiments, playing soccer, or mugging for the camera with their friends.

Watching her fellow classmates enter the hall, Onicka Benfield said, “I’m really excited.” She completed a master’s degree in organizational behavior this spring and will continue as a recruiter at a staffing agency upon graduation. “It’s a foot in the door,” she said about the job, fully expecting to rise through the ranks with the aid of her degree.

Official ceremonies begin

On the stage, faculty and honored guests joined the proceedings, with Provost Dianne Rekow officially opening the 155th commencement ceremonies. She introduced the Chair of NYU-Poly’s Board of Trustees, Ralph Alexander ’77NE, also a graduate of the Institute who addressed the students: “You’re pretty tough. You’re pretty smart. This place is hard,” he said, describing the Institute’s academic programs. He expressed further confidence in their abilities, closing with, “I know that out there is the chairman of the board of trustees of the future.”

President Jerry M. Hultin followed Alexander, and he, too, recognized the graduates’ achievements. Recalling the earthquakes in Haiti and Chile earlier this year, President Hultin observed, “Rather than feel powerless in the face of these natural disasters, you thought of ways to mitigate damage through resilient engineering. You imagined ways to strengthen buildings and roads and to use telecommunications and technology to lessen the loss of lives.”

Change, collaboration and diversity

For President Hultin, such accomplishments proved the graduates’ potential to become “change agents,” a term he borrowed from social entrepreneur Bill Drayton, founder and CEO of global non-profit Ashoka. “Engineers creatively using science and technology — whether solving specific problems or designing systemic solutions — are some of the best change agents in the world,” President Hultin said.

Behind every change agent are family and friends, the theme addressed by valedictorian Fnu Maheshdeep, who received in fewer than four years a combined bachelor’s and master’s degree in electrical engineering and computer science. He described how his father passed away while Maheshdeep was in the third week of his first year at NYU-Poly. Only through the encouragement of his family was Maheshdeep able to reach his goals, and he believed such support propelled the efforts of his fellow classmates. “Our education has been a collaborative effort,” he told them.

Dr. Irving McPhail, president and CEO of the National Action Council for Minorities in Engineering and recipient of this year’s honorary doctor of engineering degree, chose to address another topic: diversity. He acknowledged the nation’s struggle as it tries to maintain its edge over other countries that are quickly gaining ground in the science, technology, engineering and math (STEM) fields dominated by the United States in past years. “The solution to America’s competitiveness problem,” said McPhail, “is to activate the hidden workforce of young women and men who have traditionally been underrepresented in STEM careers...that is manifested here at NYU-Poly.”

Soon afterward degrees were conferred (approximately 380 bachelor’s, 1,225 master’s and 25 doctorate). Friends and families again requested photos, and the lobby was once more filled with flashing camera lights.

Veena Patel stood patiently by a guardrail, waiting for her nephew to emerge from the proceedings. She said he and his family relocated from India to Chicago eight years ago, and graduation was “a big event for them.” Her nephew finally joined her, and soon they were one of the many families proudly celebrating the well-earned diploma of their graduates.
The NYU-Poly community previewed plans for Project 2010, the first reconstruction effort of Pe Campus Transformation, at a town hall meeting in the spring. Award-winning Grimshaw Architects presented the renderings and schematic designs slated to come to life this fall in the Jasper Kane Dining Hall and the adjacent corridor in Rogers Hall.

NYU-Poly President Jerry Hultin explained why those areas were selected as the first to be revived in the 10-year plan to redesign areas of the Brooklyn campus. “The Steering Committee, a group of faculty, administrators, students and trustees, were issued a challenge: determine a ‘special project’ that would quickly and dramatically signal that our physical campus is transforming to reflect our academic transformation,” he said.

The “special project” needed to promote collaboration as part of NYU-Poly’s Pe (invention, innovation and entrepreneurship) philosophy, contribute to becoming a more sustainable campus and cost less than $2 million.

“The corridor, a main artery for student, faculty, staff and visitor traffic, and the dining hall, one of the campus’ central gathering spaces, were natural choices,” said Dennis Dintino, vice president of finance and business affairs and Steering Committee chair.

Dintino reviewed the process by which requirements for Project 2010 were met. Last fall, Pe Campus Transformation committees comprised of faculty, students, staff and trustees were established. In January, rigorous planning began. Since then, Project 2010 has been unanimously approved by the Special Projects Committee, the Space Committee, the Steering Committee and the Finance and Business Affairs Committee of the Board of Trustees. The Board approved the plan unanimously.

President Hultin also emphasized the importance of Project 2010’s sustainability focus: “As a signatory to the American College & University Presidents’ Climate Commitment, we have committed to promote

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**PROJECT 2010:** Plans for the First i²e Campus Transformation Initiative Unveiled

The newly designed cafe consists of a higher ceiling, vibrant colors and the use of light harvesting to reduce energy consumption.
research in this vital area and to eliminate net greenhouse gas emissions on the Brooklyn campus. Project 2010 will play an important role in our progress.”

Phyllis Frankl, professor of computer science and engineering and chair of the Space Planning Committee, added that Project 2010 is the first execution of i²e Campus Transformation’s Phase One, which will continue for three years. Multiple committees are currently assessing academic and laboratory space needs.

A Tour of Project 2010

Before introducing design specifics, project architect Robert Garneau from Grimshaw Architects likened the corridor and dining hall to a gateway for campus visitors. “Once they’re in the door, it’s one of the first impressions,” he said.

Garneau described a key concept of the renovation: visually connecting the corridor to the dining room, or “café,” as project plans refer to it. Instead of the concrete walls that now create structural and perceptual barriers between the two spaces, large, glass doors will allow visitors to see from the hallway into the café’s interior and, ultimately, the plaza outside.

This change will lengthen visitors’ sight lines, and a change to the ceiling will heighten their experience — literally. The height of the corridor will extend another four feet when the dropped ceiling is removed and the corridor’s west wall is resurfaced with a textured material (stippled glass perhaps, or iridescent resin) in a bold color.

The corridor will also become a center for information exchange, with hubs of LCD screens on the east wall displaying everything from campus event information to course projects to an “eco-dashboard” that monitors energy usage and savings in the building. Garneau also shared working concepts for the modular floor-to-ceiling display system that will house the LCD screens and provide tabletop space as students chat over coffee or promote club activities.

“The dining hall will change dramatically, too,” said Garneau. A more thoughtful arrangement of new, modern furniture, selected by a student focus group, will create distinct spaces for eating, studying and informal gathering. And the existing gray ceiling, which absorbs light, will be painted white to reflect light. The color is expected not only to greatly improve light levels for studying, but also to improve energy performance. New lighting fixtures in the dining hall and corridor will also go a long way to provide energy savings, as controls will automatically regulate light according to daytime and nighttime need. Motion sensors might also be added to light areas only when in use.

This change will lengthen visitors’ sight lines, and a change to the ceiling will heighten their experience — literally.

“Such changes will reduce NYU-Poly’s carbon footprint, as well as its operating costs,” said Garneau, who also discussed planned upgrades to some of the restrooms, including water-conserving fixtures, as well as building performance measures to be incorporated during the phased renovation. He also explained that project architects intend to integrate green-certified materials and solutions whenever feasible.

Q & A

Daniel Hernandez from Jonathan Rose Companies, which is overseeing the i²e Campus Transformation as NYU-Poly’s owner’s representative, led the Q & A session that followed. He asked the audience to focus its feedback on three points: how the designs presented might be improved; how NYU-Poly’s facilities — its labs, classrooms or outdoor areas — could be different; and how the Institute can realize its goal of becoming a green campus. Faculty, staff and students alike responded with suggestions, questions and comments.

Early in the event, President Hultin addressed issues that were not asked during the Q & A, but which arose following New York University’s expansion plan announcement (NYU 2031: NYU in NYC) in mid-April. In addition to building facilities along its Health Corridor on Manhattan’s First Avenue and on Governor’s Island, the 25-year plan proposes building in downtown Brooklyn. Hultin explained that NYU’s and NYU-Poly’s plans would be well coordinated and ultimate designs will be made in concert to create facilities that respond to student and faculty needs. He challenged attendees to join NYU-Poly in finding ways to energize MetroTech, creating a campus atmosphere as vital as that in Washington Square.
President Jerry M. Hultin was among the American leaders honored with the Ellis Island Medal of Honor from the National Ethnic Coalition of Organizations (NECO). Medalists of diverse ethnic origins were celebrated for outstanding contributions to their communities, their nation, and the world at a dramatic ceremony on Ellis Island.

Each year since 1986, NECO – whose mission is to “honor our diverse past, to advocate for positive change in the present and to build strong leaders for the future” – has recognized America’s diverse past by sponsoring the event. The honor pays tribute to the ancestry groups that comprise America’s unique cultural mosaic.

The grandson of Swedish immigrants, Hultin was recognized for his contributions to providing immigrants and their sons and daughters with educations that lead to successful lives around the globe. Even before joining NYU-Poly as president in 2005, he demonstrated a commitment to improving the lives of Americans through educational opportunities developed by community leadership projects in Ohio and, while Under Secretary of the Navy.
Barbara Noseworthy Named
VP of Development and Alumni Relations

Barbara Noseworthy, a consummate fundraiser and the former senior resource mobilization officer for AGRA, the Alliance for a Green Revolution in Africa, is NYU-Poly’s new vice president of development and alumni relations. Her appointment was effective July 1.

Noseworthy brings a wealth of professional experience to the position with more than 20 years partnering with visionary institutions and individuals in the areas of institutional advancement and management.

AGRA was established with the initial support of the Bill and Melinda Gates Foundation in 2006. Noseworthy was responsible for securing over $130M for the non-profit organization and its agricultural efforts from bilateral donors, the private sector and the philanthropic community. AGRA is chaired by former United Nations Secretary General Kofi Annan.

As the director of funding initiatives for the Earth Institute at Columbia University, she worked directly with its internationally renowned director Jeffrey Sachs. Noseworthy was a key member of the management and strategy team with lead responsibility for fundraising and grant writing, management and development of new programs. Over three years, she increased annual funds to the institute from $5M to $22M and realized more than $100M in gifts and pledges.

Before joining the Earth Institute, Noseworthy was vice president for development and alumni affairs at Whitman College, where she built and supervised a staff of 20, increased annual support from $4M to $14M and led campaigns to secure more than $75M for buildings, endowment and operations. Before joining Whitman, where she served for 10 years, she was at the University of Washington as the assistant director of corporation and foundation relations working with 29 corporate CEOs to secure $100M of the university’s $250M campaign.

Noseworthy will work closely with President Hultin and the NYU-Poly Board of Trustees and all constituencies at the Institute as well as colleagues in University Development and Alumni Relations at NYU to achieve the Institute’s ambitious fundraising goals.

Dr. Ines Mandl’s Drug Discovery Has Newfound Purpose 60 Years Later!

When polymer chemist, Dr. Ines Mandl ‘47 ’49Chem, discovered the drug collagenase, she never imagined that researchers would find a new medical purpose for it nearly 60 years later. The drug discovery occurred while working as a research associate at Columbia University in the early 1950s. Inside her laboratory, she tested 80 strains of clostridium histolyticum bacterium found during World War II. While screening each strain, Mandl discovered one that was rich in collagenase and had the potential to destroy native collagens. Collagenase is a very specific enzyme that destroys the body’s connective tissues and is a component of skin, tendons and cartilage, but it does not affect other tissues or organs. The Army sponsored a project for the creation of a topical collagenase ointment to treat third degree burns. It is also used to treat decubitus ulcers commonly known as bed sores. The beauty of this product was its ability to break down collagen and scar tissue, without harming the healthy tissue. Years later, a purified injectable form of collagenase was used for treatment of herniated discs.

Although Mandl’s drug was never patented, she advises young researchers to have patience with their discoveries. “Your basic research may be important to future diseases and eventually, it will be profitable. Something you invent today may become quite important many years from now,” stresses Mandl. This is true for collagenase, which the Food and Drug Administration recently approved in a new injectable drug called Xiaflex. The enzyme produced drug uses collagenase to help combat orphan diseases such as Dupuytren, a condition that causes the fingers to curl and Peyronie’s disease to correct bent male genitalia. Orphan diseases are those conditions that do not have a sufficient number of people afflicted by them to be of interest to large pharmaceutical companies.

Currently, BioSpecifics Technologies, a Long Island drug company, which was the original developer of collagenase, outsources their product to Auxilium Pharmaceutical for mass production. Xiaflex is a costly non-surgical treatment and sales are expected to reach hundreds of millions of dollars annually, according to a recent New York Times article. Mandl retired over 20 years ago and has not been involved in the company’s recent developments. As a consultant for BioSpecifics, she received over 30,000 shares which she sold over the years. Dr. Mandl learned a lesson from that experience and is firm in her belief that young scientists retain their patent rights and stock shares. The best advice she can offer young inventors is to always look for other possible uses for drug discoveries. Dr. Mandl suggests that “basic research should be encouraged for its own sake. It’s wise to learn more about the properties, substances, byproducts and biological chemicals,” in order to find alternate medical solutions....and perhaps, good fortune.
Kalle Levon is on the brink of revolutionizing point-of-care (POC) medical diagnostics.

Levon, director of the Bioinformatics Program at NYU-Poly, has developed a concept that uses an inexpensive credit card-sized device requiring no advanced training to operate and minimal power to provide high-accuracy detection of infectious diseases from a single patient sample in less than 30 minutes.

The concept and the possibility of making it a reality was so intriguing to the New York City Investment Fund that Levon was named one of six winners of the first BioAccelerate NYC Prize, a $1.5 million grant created to fuel the growth of life science and biotech businesses in New York City. BioAccelerate NYC is a project of the Partnership for New York City and the New York City Economic Development Corporation (NYCEDC).

"I have always emphasized research in socially sensitive areas," says Levon, "and now with this award, I am able to include the genome as a diagnostics tool and get involved with genome-wide association systems—an important challenge in my career."

Each BioAccelerate NYC winner receives a $250,000 grant to conduct late-stage, proof-of-concept research on products to improve health and wellness. The finalists were also given mentors to guide them through the proposal process. Levon was assigned David E. Shaw, founder of Idexx, a veterinary diagnostics firm, whose assistance proved invaluable in determining areas to emphasize in the proposal and what modifications needed to be made.

Levon's proposal—the sole winner to address a diagnostic issue—tackles the inefficiencies of infectious disease diagnostics including high cost, lengthy result times, bulky equipment and the need for large sample sizes and highly trained personnel. "The idea for this project was derived from work I did on pathogen detection in 1998 with a DARPA grant," says Levon. "In this instance, it is being directed to healthcare diagnostics."

Uniting experts in polymer chemistry, electrical engineering and medical research, Levon conceptualized a handheld, point-of-care device to detect infectious diseases using a patented floating gate field effect transistor (FGFET) biosensor. Levon worked with conductive polymers for over 30 years and found that polymer films, fibers and gels worked best with biological molecules. The POC device leverages the ion-sensitive floating gate transistor, developed and patented together with former Poly Professor and alumnus Arifur Rahman, to measure the electrical charge of bio-molecules. The biosensor can be combined with integrated circuits to analyze and transmit test results. The wireless transmission is particularly important in developing countries where...
patients will mostly likely administer the test themselves.

This cost-effective biosensor utilizes readily available CMOS transistors coated with a conductive polymer. When in contact with a small sample of body fluids, the polymer detects biological and chemical binding reactions with a high degree of sensitivity, translating these signals into electrical signals. Due to small size, easy interpretation of results and low sample volume required, a doctor could utilize the device during the course of a patient’s examination and receive results almost immediately in any clinical setting, no matter how rudimentary, anywhere in the world.

This field of study, known as organic electronics, has been applied to solar cells and display technologies in research and academia for a decade, but Levon’s team is the first to apply it to health diagnostics with a potential commercial application.

The BioAccelerate grant will facilitate the development of a complete prototype, created in partnership with The Brooklyn Hospital. The pilot will focus on chlamydia and gonorrhea detection, but the technique will be applied to other infectious diseases, including H1N1 or HIV.

Previous lab tests proved the FGFET biosensor’s efficacy in detecting a single biomarker, but Levon’s vision includes the creation of a scalable, multiplex array of sensors capable of testing for several agents simultaneously, as well as applications for cancer diagnostics.

“I have always emphasized research in socially sensitive areas, and now with this award, I am able to include the genome as a diagnostics tool and get involved with genome-wide association systems.”

- Kalle Levon
Evangelos Limpantoudis is making news at NYU-Poly four months before he sets foot in a classroom. Limpantoudis, who will begin the MS in construction management program this fall, received the Catherine B. Reynolds Foundation Fellowship for Social Entrepreneurship, which prepares recipients to be leaders in the next generation of social entrepreneurs.

He and the seven other students from NYU’s 11 schools honored with the competitive Reynolds Fellowship will receive a total of up to $50,000 for two years of study and participate in an intensive curricular and co-curricular program comprised of workshops, retreats and one-on-one coaching sessions with executives in the field of social entrepreneurship.

Limpantoudis is the first student from NYU-Poly to receive the fellowship.

He received a master’s of architecture degree from MIT, is a LEED AP and an associate member of the American Institute of Architects. He has worked for several architecture firms in New York and Boston and has served as adjunct faculty at the New York Institute of Technology, where he taught courses in visualization and urban theory. His goal is to spread the message about the importance of affordable sustainable architecture through both practice and education, by establishing a non-profit design collaborative that will offer pro bono sustainable architecture services and education to low-income families and communities.

One of the characteristics of Evangelos’s venture, which will be called Collaborative for Affordable Sustainable Architecture, is the extent to which Evangelos has thought it through. From the business plan, to the initial group of volunteers, everything seems to be clear, and still Evangelos wants to allow as much feedback from the NYU-Poly and NYU community as possible. “I would be happy to see the collaborative become something I haven’t even thought of yet,” he says. “Conversation and feedback from members of the program and the NYU-Poly community will help guide me.”

When asked what most excites him about the Reynolds Fellowship, Evangelos expresses gratitude for the financial support it will provide and the structured curricular activities in social entrepreneurship. Still, what he values the most is the social connections it is sure to yield. “I will be part of a group of amazing people who are fully dedicated to their causes and the cause of social entrepreneurship in general,” he says. “Having access to such a team of talented individuals, all thirsty for change and for making a difference, is the best resource a social entrepreneur could ever ask for.”

The cadre of socially minded scholars chosen as Reynolds fellows are typically motivated by a desire to remake the world by disrupting corrosive social patterns with innovative and lasting solutions. Some join the program still in the development stages of their idea; others arrive ready to launch a change-making venture, while a few are somewhere in between. Representing a range of disciplines, applicants are also academically accomplished in their fields and can demonstrate an active history in issues of social importance.

For Evangelos, that history stretches to his undergraduate years at Hobart & William Smith Colleges, where he received his bachelor’s degree in fine arts and architecture studies. There, he led a student group that worked to end crimes against humanity, an early signal of his passion for civic involvement. He also led an architecture student group and wrote an honors thesis about affordable sustainable architecture, an interest which he has carried with him ever since, through his architecture studies at MIT, to his teaching and his practice. Now he hopes to make affordable sustainable architecture part of his focus at NYU-Poly.
Vladislav Kopman is the recipient of the prestigious National Science Foundation (NSF) Graduate Research Fellowship that will fund his path to a doctoral degree in mechanical engineering. NSF’s highly competitive Graduate Research Fellowship Program supports outstanding graduate students who are pursuing research-based degrees.

Recipients of the NSF’s fellowships receive a three-year annual stipend along with education allowances for tuition and fees. They are free to conduct their own research at any accredited U.S. or foreign graduate education institution. For Kopman, that will mean continuing his work in the Dynamical Systems Laboratory (DSL) at NYU-Poly directed by Maurizio Porfiri, assistant professor of mechanical engineering.

Kopman’s work takes robotics underwater by helping to develop vehicles that can interact with live aquatic creatures without causing harm to the animals. His current project is a remotely operated, battery-powered, submersible vehicle that is about two feet long and shaped like a torpedo. The vehicle is a second-generation model of a prototype developed during previous collaborations with marine biologists at the New York Aquarium and with the Wildlife Conservation Society. The vehicles interact with marine mammals and participate in training them. Videos of the aquatic robots can be seen at: faculty.poly.edu/~mporfiri/media.htm

Kopman has worked since his junior year with Porfiri. His master’s thesis focused on modeling a robotic fish propelled by a flapping tail similar to an actual fish’s; the robot has been used to study the behavior of so-called “gregarious” fish that swim in schools. He hopes to teach mammals who have lived their lives in captivity to successfully hunt for prey using robotics.

Kopman’s undergraduate and graduate research has been supported by NSF under the CAREER award to Porfiri, the GK-12 Fellows Programs coordinated by Vikram Kapila and by NASA Space Grant Consortium. The GK-12 Programs allowed Kopman to reach out to local schools by bringing science and engineering into the classroom. Part of Kopman’s NSF funding will be used to develop further outreach programs in underwater robotics for K-12 students.

The prototype vehicle can dive about 15 feet, which is the depth of the New York Aquarium’s pools. It can “swim” at a speed of around 1.5 meters per second for as long as a few hours using power from a set of onboard rechargeable nickel-metal-hydride batteries. For safety of the marine creatures, the submersible’s propulsion system is completely enclosed, and it lacks fins or other surface features that could cause harm. The propulsion system is similar to a personal watercraft, with an internal propeller forcing water through a multi-directional steerable nozzle.

During the course of his fellowship, Kopman will expand on the current underwater vehicle to allow for autonomous operation, assisted by new computer algorithms and sensors such as vision or heat-sensing devices. Kopman calls the operating strategy that will be used in the autonomous vehicle “bio-responsive control.” Future versions could operate in the ocean, mapping environments, monitoring wildlife populations or detecting water pollution, all while in the presence of marine creatures and guaranteeing their safety.

Top left: Vladislav Kopman examines robotic prototype.

Bottom: Vladislav Kopman, left, at the controls of a robotic fish during lab with fellow students and Assistant Professor Maurizio Porfiri, right.
Myles Jackson Awarded Bacon Prize; Will Deliver Rausing Lecture in the Fall

Myles Jackson, the Dibner Family Professor of History and Philosophy of Science and Technology and Director of Science and Technology Studies and Professor of the History of Science and Technology at NYU’s Gallatin School of Individualized Study, has been awarded the prestigious Francis Bacon Award in the History of Science and Philosophy.

The award, which is funded by the California Institute of Technology (Caltech) and the Francis Bacon Foundation, is presented to an outstanding scholar whose work continues to have substantial impact in any of the following three fields: the history of science, the history of technology or the historically engaged philosophy of science. The winner receives $20,000, is invited to spend a semester at Caltech and is the featured lecturer at the biennial conference, which brings together the best young and established scholars in the area of the Bacon Visiting Professor’s specific interests.

Jackson was also named Cambridge University’s 2010 Hans Rausing Lecturer. In May, he presented a public lecture, “From Scientific Instruments to Musical Instruments: The Tuning Fork, Metronome and Siren” in which he analyzed how 19th-century acoustical instruments meant to standardize musical performance and measure dimensions of sound were used a century later as musical instruments.

In the annual lecture, leading foreign scholars provide current international perspectives on the history of science.

The Green Expo...

... held on Earth Day, April 22 at the Urban Assembly Institute (UAI) of Math and Science for Young Women attracted students throughout New York City.

Career panels, competitions and presentations exposed students to professionals in various engineering fields. The expo was sponsored by National Grid, which collaborated with NYU-Poly and UAI to organize the event.

The desire — to show how engineering infuses everyday life — characterizes National Grid’s goal of promoting science, technology, engineering and mathematics (STEM) education.

The Green Home Contest, a competition requiring students to build a model eco-home with supplied materials, was won by UAI and the Agnes Y. Humphrey School for Leadership teams.

“We owe a debt of thanks to National Grid,” said Dianne Rekow, NYU-Poly provost, describing the company as a “true partner over the decades.”

Co-principal Kiri Soares seconded the cooperation between the three organizations, “We have the shared vision of encouraging STEM-based careers, which is why events like this are so important.”
SAIC/NYU-Poly Agreement Builds Cybersecurity Powerhouse

In an unprecedented agreement, Polytechnic Institute of New York University and Science Applications International Corporation (SAIC), a FORTUNE® 500 scientific, engineering and technology applications company, have partnered in delivering an online master’s program in cybersecurity to top-performing employees over the next decade.

The first 20 employees in the program entered a blended curriculum starting with traditional classroom instruction by NYU-Poly faculty members Lok Yan, adjunct professor and Joel Wein, associate professor of computer science, and continuing over 30 months with online classes delivered through the school’s e-learning unit, NYU-ePoly. An additional 20 students will enter the program this fall.

Cybersecurity experts who enter the program are nominated by their managers and must satisfy NYU-Poly’s graduate admission requirements. NYU-Poly was selected for the agreement following a search in which 20 other top-ranked schools competed.

“Every form of information technology—from the power grid to defense—requires strong digital protection,” said SAIC Vice President and Cybersecurity Program Director Robert Giesler. “Many of the services and solutions we provide to government and commercial customers depend on highly talented people. To be at the forefront, we will help empower the next generation of skilled cybersecurity experts.”

In the United States today there are an estimated 1,000 highly qualified personnel with specialized degrees in cybersecurity. According to a national security expert, the nation needs 10,000 to 30,000. Companies such as Boeing, Lockheed, and many others have announced new cybersecurity business units.

NYU-Poly was one of the earliest schools to introduce a cybersecurity program, receiving National Security Agency (NSA) approval nearly a decade ago. Designated as both a Center of Academic Excellence in Information Assurance Education and a Center of Academic Excellence in Research by the NSA, the school houses a National Science Foundation-funded Information Systems and Internet Security (ISIS) Laboratory, the nerve center of cybersecurity research.

“SAIC employees will perform lab assignments remotely on the school’s Remote Virtual Security Laboratory,” said Nasir Memon, director of NYU-Poly’s Cybersecurity Program. “Known as VITAL, it is the nation’s only university-based virtual cybersecurity lab and is at the core of many of the courses to be delivered to company personnel.”

The SAIC agreement is one of the first to be signed by NYU-Poly’s Enterprise Learning team, headed by Vice President Robert Ubell. The unit partners with companies, government agencies and non-profit organizations, matching NYU-Poly’s resources to the needs of large organizations for education and training.
Dr. Lien Chan delivers lectures on “China-Taiwan Cross-Strait Relations;” visits NYU and NYU-Poly

Dr. Lien Chan, former vice president of Republic of China in Taiwan and honorary chairman of the Kuomintang Party (KMT) spoke on “Cross-Strait Relations” at the Council on Foreign Relations’ Winston Lord Roundtable on Asia and U.S. Foreign Policy on April 13. The talk was moderated by the renowned China expert, Professor Jerome Cohen, co-director of NYU’s U.S. Asia Law Institute.

In the afternoon, Dr. Lien gave a public speech entitled “China-Taiwan Cross-Strait Relations-Retrospect and Prospect” at NYU Law School, organized by Professor Xudong Zhang, director of NYU’s China House; Professor David Chang, chancellor of NYU-Poly; and Professor Cohen. Dr. Lien shared with over 400 attendees his historical perspective on the events that led to his “ice-breaking journey” to China to meet with President Hu Jing-Tao in 2005. He was the first KMT chairman to visit the mainland since his government relocated to Taiwan in 1949 when the KMT lost a war to the Communist Party of China (CPC) and fled to Taiwan. Dr. Lien articulated that the collaboration between China and Taiwan can benefit people on both sides of the Taiwan Strait and that the resulting talks led to the unprecedented warming of the cross strait relations in recent years. Chancellor Chang praised the courageous and visionary statesman, saying “Dr. Lien was both outspoken and insightful in analyzing the dynamics between China, Taiwan and the U.S.” Lien’s talk sparked interest from the press in China, generating articles and online commentary.

President Jerry M. Hultin hosted a dinner in honor of Lien Chan’s visit. “I am honored that Lien Chan chose to spend time with us and at New York University,” said President Hultin. “We were able to take full advantage of Lien’s visit and had the privilege of welcoming him back to NYU-Poly as an honorary alumnus. It’s not often a university president gets to intimately brainstorm with a statesman of his stature and accomplishment.”

In his remarks, Lien expressed his deepest appreciation for his honorary degree from NYU-Poly and for the warm welcome he received upon returning to campus. Among the honored dinner guests at the University Club, were Lien’s wife, Fang-Yu Lien; Ambassador Andrew Kao, director general in charge of Taipei Economic and Cultural Office in NYC; and Ambassador Stephen Chen, retired representative of the Taipei Economic and Cultural Office.

Lien earned a BS in Political Science at National Taiwan University in 1957, an MS in 1961 and a PhD in Political Science in 1965, both from the University of Chicago, and an honorary doctorate of laws from Polytechnic University (now Polytechnic Institute of NYU) in 1996.
[1] George Bugliarello, president emeritus, opened the Third Indo-American Frontiers of Engineering Symposium, welcoming attendees on behalf of the U.S. National Academy of Engineering. Bugliarello was the Distinguished Speaker at the University of Miami where he lectured on “Urban Sustainability and its New Critical Challenges.” He also chaired a committee of the Division on Engineering and Physical Sciences of the National Research Council to review the Board on Infrastructure and the Constructed Environment.

[2] Deo C. Choudhury, professor emeritus, Physics, will be a guest physicist at the Brookhaven National Laboratory for one year. His appointment is based on his expertise in the areas of theory of nuclear structure, nuclear reactions, nuclear models, high-energy nuclear scattering and modern cosmology. Choudhury was also invited to participate in the Brookhaven Forum 2010: A Space-Time Odyssey.

[3] John Falcocchio, professor of transportation planning and engineering and executive director of Urban Intelligent Transportation Systems Center, Civil Engineering, has been appointed a visiting scholar and faculty affiliate to the Rudin Center for Transportation Policy and Management at the Wagner School for Public Service at New York University. He was also named to the advisory working group of the New York State Transportation and Climate Change Adaptation Project at Columbia University’s Earth Institute Center for Climate Systems Research. He is a member of the New York Academy of Sciences Discussion Group on the “Greening Transportation and Infrastructure.” Falcocchio organized and moderated a transportation symposium on “Real-time and On-line Transit Information for a Connected Region” at the New York Academy of Sciences.

[4] Richard Gross, the Herman F. Mark Professor and director of the NSF Center for Biocatalysis and Bioprocessing of Macromolecules, Chemical and Biological Sciences, has been named the 2010 Turney Alfrey Visiting Professor by the Michigan Molecular Institute, an honor recognizing the top leaders in polymer science and technology worldwide.

[5] Zhong-Ping Jiang, professor, Electrical and Computer Engineering, gave a semi-plenary talk at the 2010 Chinese Conference on Decision and Control in Xuzhou, China. He also delivered a distinguished lecture at the 5th IEEE Conference on Industrial Electronics and Applications in Taichung, Taiwan.

[6] Kalle Levon, director of the Bioinformatics Program, Chemical and Biological Sciences, received a Finland Distinguished Professor Award from the Finnish Government for 2009-2010. This prestigious designation is given to a small number of foreign scientists and includes 2.5 Euros in research funding.

[7] Eli Pearce, university research professor, Chemical and Biological Sciences, was named Founding POLY Fellow of the Division of Polymer Chemistry by the Executive Committee of the American Chemical Society. The award recognizes those individuals who have made significant scientific accomplishments or contributed significant service or both. Pearce and a group of 59 past awardees were inducted as POLY Fellows for their outstanding achievements and contributions to polymer science.

[8] Keith Ross, the Leonard Shustek Distinguished Professor of Computer Science and head, Computer Science and Engineering, gave a distinguished lecture at NYU Abu Dhabi on May 11. The talk covered an emerging paradigm shift in information technology in which Google replaces Microsoft as the dominant player in the industry, as well as how peer-to-peer paradigms can compete with cloud computing. During his trip, Professor Ross also gave research talks at UAE University and at Injazet, a data center company.

[9] Romualdas Svedrys, associate professor, Humanities and Social Sciences, was awarded a presidential medal for “outstanding service in recovering Lithuania’s scientific and technological heritage over the past decade.” The presentation was made by Lithuanian President Dalia Grybauskaite.
NYU-Poly recognized its dedicated faculty and staff on April 22 during the Institute’s Annual Service Awards ceremony in Pfizer Auditorium. A partial list of honorees appears below.

15 Years
- Maria De Pascale
- Magued Iskander
- James Lewis
- Lorraine Pizzirusso
- Jana Richman

20 Years
- Boris Aronov
- Nancy Byrne
- Nirod Das
- Claudette Dume
- Lloyd Edwards
- Bonnie Harper
- Ilan Juran
- Sunil Kumar
- Zahra Patterson
- Stacey Spears
- Yao Wang

25 Years
- Lorraine Bildzukewicz
- Thomas Daly
- Haldun Hadimoglu
- I-Tai Lu
- Shivendra Panwar
- Dennis Small
- Teresina Tam
- Peter Voltz

30 Years
- Haang Fung
- Mark Green
- Sylvia Marks

35 Years
- Kathryn Kuiken
- Erwin Lutwak

40 Years
- Frank Cassara
- Harold Kaufman

45 Years
- Edward Ziegler

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**Zahra Patterson Receives LIU’s Hynenman Award**

Zahra Patterson, development program manager, Development and Alumni Relations, savors a congratulatory kiss from her youngest son, Taj, after commencement on the Long Island University (LIU) Brooklyn campus on May 13. “Z,” as she is known to her colleagues at NYU-Poly, returned to college at Taj’s behest earning a Bachelor of Letters from the College of New Rochelle in 2007. That fall, she entered LIU on full scholarship to begin working on an MFA in creative writing. She maintained an “A+” average, while juggling a full-time job at NYU-Poly, evening courses and tutoring, putting her three sons through college and running a household with her husband, Tony. The hectic schedule only seemed to energize her.

For her thesis, Zahra wrote her memoir “Rich Soul Born on a Poor Block,” for which she received the Esther Hynenman Award. In the past, the award was given to authors of fiction and poetry. However, LIU’s English department found her work so compelling, they changed the criteria to a cross-genre category allowing authors of memoirs to be considered. One professor said of her work, “The writing...is an inspirational reminder of how transformation can and does change the perception of remembered events from those of heartbreak to triumph when viewed with deep honest, scrutiny and unflinching courage.”

She also received the Symbolic Graduate Award, given to the individual who best represents the highest standards of the English department. Zahra is hoping to find a publisher for the memoir next year. Congrats, Z!
Renowned Mathematician Shing-Tung Yau Delivers Lecture

Mathematician Shing-Tung Yau, chair of the mathematics department at Harvard University and recipient of the Fields Medal, MacArthur Fellowship and Wolf Prize, delivered a lecture on April 30 to a capacity crowd of faculty, students and the general public (famed mathematician Louis Nirenberg was there). The inaugural lecture in the Polytechnic Eminent Scholar Series, “From Riemannian Geometry to Modern Computer Graphics,” the talk focused on Yau’s work with David Gu, associate professor at Stony Brook University, in using techniques from pure mathematics to do imaging. Yau is best known for proving the Calabi conjecture, which contributed the mathematical basis for string theory or the belief that 10-dimensional, vibrating strings construct the core of the universe.

Women’s Softball Team Wins First-Ever Skyline Crown

Victory was ever so sweet for the Lady Blue Jays when they captured the coveted Skyline Conference crown defeating Farmingdale 8-7 in 8 nail-biting innings.

It was a first-time title win for the Lady Blues—a bid that earned them an automatic ticket to the NCAA Division III tourney.

Athletes Celebrate at Annual Year-End Varsity Awards Banquet

NYU-Poly athletes were honored at the Institute’s annual Varsity Awards Banquet on April 28. Special awards were presented to individual athletes and three former players were inducted into the Hall of Fame.

Hall of Fame Inductees, from left to right, Simone Derby ’06, tennis and volleyball; Kevin Power ’04, soccer; and Sarah Walter ’06, basketball, softball and soccer are joined by standing left to right, Anthony Kapp, director of alumni relations; Maureen Braziel, director of athletics; President Jerry Hultin; James Oussani Jr. ’77 president, Staplex Co.; and Christine Ianuzzi ’87 ’94, president, Polytechnic Institute Alumni Association.

Toast ’10

Alumni, faculty and staff congratulated the Class of 2010 and wished them well on the eve of their graduation at TOAST ’10, sponsored by the Polytechnic Institute Alumni Association.
“NYU-Poly: A Good Investment”

“Over three decades have passed since I became active in Polytechnic’s affairs. Since then, the school went through many productive initiatives led by George Bugliarello until 1994, then by David Chang and after 2005, Jerry Hultin. Stand outs among these initiatives are: the MetroTech development, the Dibner Library, the Poly 100 Scholarship Fund, the Herman Mark Chair, the Promise Fund dinners, the Othmer dormitory, the Fulfilling the American Dream capital campaign, and, of course, the very significant recent affiliation with NYU. These projects served to instill life and substance in the school and I participated and supported them all wholeheartedly. All in the above list are “macro” projects. It turns out that Polytechnic’s individual departments, however, also have an abundance of “micro” projects.

Several years ago, during a visit to the school, I ran into Professor Bruce Garetz, department head of Chemical and Biological Sciences. He told me about his research and about what some of his senior students were doing in the summer, a season of the year when most students are taking a rest or trying some temporary work other than chemistry. Dr. Garetz was supervising three student-volunteers (“interns”) who in the previous summer did chemical research in his lab. Now their stipend ran out. Would I consider supporting them?

The arrangement is ongoing and will provide the needed support for three interns this summer, as in the past few years. At no cost to the school, one of its departments will operate under an increased budget, while the selected students will gain a greater attachment to their school and to their chosen profession. I called Dr. Garetz and granted him his request.

The arrangement is ongoing and will provide the needed support for three interns this summer, as in the past few years. At no cost to the school, one of its departments will operate under an increased budget, while the selected students will gain a greater attachment to their school and to their chosen profession.

By all accounts, I call this a good investment.”

HARRY C. WECHSLER ’48Chem
President
Boston Systematics, Inc.

$6,000 Wechsler Summer Internships
Chevalier Society Member ($1M lifetime donor)
Polytechnic University Board Member, 1980-2008
Herman Mark Chair, chairman of fund-raising committee
Wechsler Award for Excellence, Founder

Charitable Remainder Trusts
& Gift Annuities for Your Retirement

Charitable remainder trusts and gift annuities offer you the means to solidify your retirement income while giving you a meaningful way to direct a portion of your life’s legacy. With NYU-Poly as the ultimate beneficiary to the trust’s principal, your gift expresses your wishes after death. Thoughtful estate planning is critical to ensuring that your wishes will direct the proper distribution of your assets.

Here are some benefits of charitable remainder trusts and gift annuities:

- A federal charitable tax deduction in the year the trust is established based on the age of the beneficiaries (if you itemize).
- Assets removed from your probate estate.
- Payments for as long as you live.

Individually, these options offer unique benefits. Let’s take a closer look at each one:

The Charitable Gift Annuity with a minimum gift of $10,000.

This is a contract between you and NYU-Poly that is simple to execute. The lifetime pay-out percentage rate is determined by a formula based on the age(s) of the beneficiaries.

The Charitable Remainder Unitrust with a minimum gift of $100,000.

This requires a trust agreement. You select the income pay-out percentage (usually between 5-8% depending on age). While that percentage remains constant over the life of the trust, the value of the principal will change with market conditions and will directly affect your actual annual income. The unitrust favors those who want to see growth in principal and income. Investment responsibility of your portfolio is given to experienced investment advisors. As an added value, capital gains taxation is eliminated for reinvestment purposes.

The Charitable Remainder Trust with a minimum gift of $100,000.

Again, a trust agreement is required. You choose the income pay-out percentage (usually between 5-8% depending on age), but income is fixed at the time the trust is established. Regardless of the rise or fall of market conditions, your annual income stream will remain the same. This trust favors those who want to guarantee a set income over time.

If trust options do not satisfy your commitment to support NYU-Poly, you can always opt to include us in your will through a bequest.

Polytechnic’s commitment to Pe will create an even more robust generation of inventive engineers whose innovative technologies will improve the lives of your heirs. These students need your support.

Please note the following suggested language for your bequest should be reviewed by your attorney:

“I hereby give, devise and bequeath to the Polytechnic Institute of NYU, a non-profit corporation organized and operating under the laws of the State of New York, currently located at Six MetroTech Center, Brooklyn, New York, 11201, or its successor school through merger, consolidation or otherwise, the sum of $_______, (or, the rest, residue and remainder of my estate) to be used for the general purposes of the Institute (or for a particular program of your choice).”

For more detailed information or a free estimate of financial benefits, please call Barbara Noseworthy, vice president, Development and Alumni Relations, at (718) 260-3982, or e-mail her at bnnosewor@poly.edu.
Letter from the Alumni President

Dear Fellow Alumni,

As you read this letter, the Polytechnic Institute Alumni Association (PIAA) has ended another successful term, and we are transitioning to a new leadership team who will carry on the work of the association with a revived energy and passion for supporting our alma mater.

As alumni, we have had much to be proud of over the past year:

• We have engaged with the alumni leadership at NYU, and are exploring opportunities to increase collaboration between our alumni programs;
• We have increased communication and involvement of our alumni through online communication, networking events and regional alumni gatherings;
• We welcomed the Class of 2010 into our alumni family by sponsoring Toast ‘10 on May 17th and we held a prominent role at NYU-Poly’s 155th Commencement exercises on May 18th;
• We participated in an expanded Alumni Weekend & Back to School Day program, and inducted the Class of 1960 into the Golden Jubilee Society;
• The Scholarship Committee received 17 outstanding nominations for the Outstanding Graduate Award, and the 2010 recipient was Michael Hailermariam;
• The Awards Committee honored Michael H. Kappaz ’70IE and Mario W. Cardullo ’57 ’59ME as our 2010 Distinguished Alumni Award recipients. These awards were presented for the first time at NYU-Poly’s Commencement;
• and, the association made notable contributions to the Poly Fund, ASCE Concrete Canoe & Steel Bridge Competition, the Polytechnic Classic Golf Tournament, Engineers Without Borders, and a new summer engineering class for high school students led by fellow alumnus and faculty member Charlie Camarda ’74AE.

As I look towards the 2011 academic year, I am excited about the opportunities that lay ahead for the alumni association. We have recently launched our new Polytechnic Alumni Visa® Platinum Rewards credit card, a great opportunity to give back to the association by using the card for your everyday purchases (details available at www.poly.edu/alumni/services). We are also looking forward to welcoming the newest Polytechnic class during orientation and New Student Convocation this fall, where we will be distributing free school supplies and promoting the importance of getting involved in NYU-Poly’s Student Alumni Association.

I hope you will consider getting involved by serving on a PIAA committee, being a mentor for a current student, or taking on a leadership role to help strengthen our regional alumni chapters. To get involved and learn about ways you can support your alma mater, visit www.poly.edu/alumni or call our Director of Alumni Relations, Anthony D. Kapp, at (718) 260-3424.

With warm regards,

Christine Ianuzzi ’87BSEE ’94MSISE
40s
Lawrence J. Lauck ’43ME, at the age of 89, is enjoying life and looking forward to turning 90!
Charles J. Knuth ’44 ’47 ’49ChE is 85 and continues to write his family’s history. He has already completed six volumes and is working on volume 7.

50s
Lawrence J. Hahn ’52 ’62ME is currently serving on the Executive Council Committee of the Long Island Section of The American Society of Mechanical Engineers and is also the treasurer of the Cold Spring Harbor Civic Association.
Robert Newlander ’57OR is now living in Sun City, Texas and is remaining active by working as a substitute teacher and volunteering for community service programs.

60s
Albert Castleman ’63ChE ’69ChemPH received the 2010 Irving Langmuir Award in Chemical Physics. This award is intended to recognize and encourage outstanding interdisciplinary research in chemistry and physics, in the spirit of Irving Langmuir, an American chemist and physicist. A member of the faculty at Penn State since 1982, Castleman conducts research that focuses on small clusters of atoms and molecules. In particular, he is interested in investigating why nanoscale matter behaves differently from large-scale matter.
Robert H. Jankowski ’65CE is working as a senior systems engineer, writing software for Northrop Grumman in Bethpage, NY.
Paul Dillon ’66Chem presented an invited talk entitled “Serum Markers of Liver Fibrosis” to the NYU-Poly Student ACS Affiliate. Dillon is a biostatistician with Siemens Healthcare Diagnostics in Tarrytown, NY. He is proud to note that one of his daughters, Karen Rodriguez, just gave him a grandson, John Dillon Rodriguez, on February 27. He has four older granddaughters, Elizabeth (age 4 1/2) and Isabella (age 3) Rodriguez and 10-year-old twins, Alexandra and Olivia, by his other daughter, Joyce Reinecke.
Daniel E. Johnson Sr. ’67EE celebrated his 40th anniversary at Hewlett-Packard Company on June 1st in San Diego, CA. Johnson also welcomed a grandson to his family on April 14th and is enjoying coaching a soccer league for his 9-year-old daughter.

70s
Rosa Blitzer Oppenheim ’70ChE ’71 ’73OR recently returned to the faculty of Rutgers Business School’s Department of Supply Chain Management, after serving as executive vice dean. Oppenheim and her husband, Alan Oppenheim ’66ME ’68IM, are the proud parents of Adam and David, and ecstatic grandparents of Maddie and Ellie.
Rachelle Friedman ’71Chem was inducted to the CE Hall of Fame by The Consumer Electronics Association (CEA). Along with her husband Joe, Friedman founded J&R Music & Computer World in downtown New York. The store began as a small 500 square-foot space in 1971 and now encompasses an entire block.
Tom Congedo ’72PH is director of the R&T Operations group, which provides technical expertise and facility capabilities to support Westinghouse commercial activities, as well as evolutionary and revolutionary technology development. This group is comprised of some of the world’s leading nuclear and energy experts and researchers with access to global networks of other scientists, experts and research facilities.
Edward Manzo ’72PH was one of five lawyers recognized for both intellectual property and litigation by Illinois Top 100 Super Lawyers. Mr. Manzo, a leader in his field, has practiced in the area of intellectual property for nearly 35 years. He represents clients from individuals to multi-national corporations in the areas of litigation, mediation, opinions, counseling, patent prosecution and expert witness engagements.
Rana Ebrahimoff Slosberg ’75SE, after 34 years at BAE Systems, started an independent college admissions consulting business, Slosberg College Solutions LLC in Bridgewater, NJ. She is a member of the Higher Education Consultants Association.

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Edward Manzo ’72PH was one of five lawyers recognized for both intellectual property and litigation by Illinois Top 100 Super Lawyers. Mr. Manzo, a leader in his field, has practiced in the area of intellectual property for nearly 35 years. He represents clients from individuals to multi-national corporations in the areas of litigation, mediation, opinions, counseling, patent prosecution and expert witness engagements.

Rana Ebrahimoff Slosberg ’75SE, after 34 years at BAE Systems, started an independent college admissions consulting business, Slosberg College Solutions LLC in Bridgewater, NJ. She is a member of the Higher Education Consultants Association.

Major Codes:
AE: . . . . Aerospace Engineering
CE: . . . . Civil Engineering
ChE: . . . . Chemical Engineering
Chem: . . Chemistry
Chemical
CM: . . . . Construction Management
EE: . . . . Electrical Engineering
Hon: . . Honorary
IE: . . . . Industrial Engineering
IM: . . . . Information Management
MA: . . . . Math
ME: . . . . Mechanical Engineering
MG: . . . . Management
MOT: . . . . Management of Technology
NE: . . . . Nuclear Engineering
OR: . . . . Operations Research
PH: . . . . Physics
SE: . . . . Systems Engineering
80s

**Ursula Burns ‘80ME, Hon’05**, chairman and CEO, Xerox Corporation, spearheaded the biggest deal in the history of Xerox. Burns oversaw a $6.4 billion acquisition of Affiliated Computer Services, an outsourcing firm, in an effort to further improve their technology efforts.

Burns also received an honorary doctorate in commercial science at NYU’s 178th Commencement exercises. She delivered the keynote address at the NYU pre-commencement dinner, where she praised NYU-Poly for the impact it had on her life and successful career.

**Robert Stevens ’85IE**, CEO of Lockheed Martin, was announced on the annual list of Beltway Game Changers to Watch — individuals setting the terms of engagement, and coming out ahead, in government contracting.

**Paul Kalb ’84NE** will be honored as Brookhaven’s “Inventor of the Year” by Battelle, the global science and technology company that, together with Stony Brook University, manages Brookhaven Lab. Kalb developed “in situ mercury stabilization,” a new method that removes toxic mercury from soil, sediment, sludge and other industrial waste.

**Matthew J. Duthie ’85CE** joined Jones Lang LaSalle as managing director for the firm’s property management team. Duthie has over

90s

**Douglas J. McCrosson ’90MG** was named chief operating officer for CPI Aerostructures on January 1st. Since January 2008 McCrosson has served as senior vice president of operations for CPI Aero’s Business Development, Engineering, Procurement and Manufacturing organizations. He joined CPI Aero in May 2003 as director of business development, was promoted to vice president of business development in January 2006 and became vice president of operations in January 2007.

**James Hanratty ’93CM** works as engineer for NYC Department of Operation in Valhalla, NY and is working on the CAT/DEL UV plant.

**Jason M. Okun ’97Chem** has been elected partner at the Fitzpatrick, Cella, Harper & Scinto, one of the nation’s premier intellectual property law firms.

00s

**Dennie M. Beach ‘02MOT** recently completed a PhD in Public Policy and is currently employed at IBM in their business analytics and optimization group.

**Charles O. Holliday Hon ’05** is chairman of Bank of America.

**Andrew J. Viterbi Hon ’09**, co-founder of Qualcomm Incorporated and developer of wireless technologies that became the international standard for third-generation cellular phones, was named the 2010 IEEE Medal of Honor recipient. The Medal of Honor, IEEE’s highest award, was presented on June 26, 2010 in Montreal, Quebec, Canada as part of IEEE’s annual Honors Ceremony.

IN MEMORIAM

- William Gatti ’33
- Carl A.Setterstrom ’36
- Attilio A. “Bob” DeMeo ’44
- William E. Engeler ’51
- Thomas P. Santry Sr. ’54
- Charles W. Fleischmann ’65 ’70
- Monroe Herbert Waxman ’53
- Samuel J. Huang ’64
- Robert Kahal ’47 ’50
- Emil Gaynor ’50
- William E. Engeler ’51
- August C. Clark ’47
- Robert B. Weiner ’74
- Robert B. Marcus ’52
- John J. Dunleavy ’61
- Rolf Goderstad ’50
- Arnold J. Rosenthal ’58
- Tito Arguello ’88
Harvesting the Chemicals of the Good Earth

After 25 years as a chemical engineer, Jack Florence '58ChE decided to start his own vineyard in 1979. When Jack began working the vineyards full time, his former associates marveled at the courage it took to take on a completely different occupation. Success, however, didn’t come overnight. He started classes at the local community college, formed industry groups and picked the brains of fellow experienced growers. Jack’s Rockpile vineyard in Sonoma County is situated 2,000 feet above sea level, on 15 acres of land. Wine lovers appreciate the distinct taste of the vineyard’s premium harvest.

His 2003 Zinfandel made by Rosenblum Cellars was named the third best wine in the world. A wine critic described its distinction as, “the generally hot growing season enhanced the luscious, exotic notes in this wine.” Rockpile grows a variety of red grapes: Zinfandel, Syrah and Petit Sirah—all big red wines—as growers like to call rich, flavorful wines with a deep red color.

Jack is known as the “father of Rockpile,” an appellation approved by the Treasury Department in 2002. He was elected to the founding board of the Sonoma County Grapegrowers Association. Before his retirement from corporate industry, he worked as a chemical engineer in R&D for Atomics International firm and Marketing Director for an engineering company.

Trustees Mario Cardullo & Michael Kappaz Receive Distinguished Alumni Awards

Mario Cardullo '57 '59ME, right, managing director, The Belfield Group, and Michael Kappaz '70IE, left, chairman and CEO, K&M Engineering and Consulting Corporation, are joined by honorary Doctor of Engineering recipient Irving McPhail, president and CEO, NACME, before receiving the 2010 Distinguished Alumni Award during commencement on May 18.

Cardullo has enjoyed over four decades of professional success in the fields of technology management and engineering, most recently at The Belfield Group, a consulting firm for technology transfer, corporate strategy, and private equity concerns. He is the inventor of the RFID-TAG transponder, which was built as a license toll system in 1970.

In 1987, Kappaz established K & M Engineering and Consulting Corporation, an internationally recognized leader in infrastructure development, financing, engineering and construction. K & M combines innovative engineering technology and financing strategies to facilitate project implementation. Both Cardullo and Kappaz currently serve as NYU-Poly trustees.

The Distinguished Alumni Award is given to graduates from NYU-Poly, Polytechnic University, Polytechnic Institute of New York, or Polytechnic Institute of Brooklyn who have attained outstanding leadership and accomplishments in the fields of engineering and technology, or have demonstrated notable contributions to the world of science through invention, innovation and entrepreneurship (i2e).
We are currently planning our 2010-2011 regional events calendar. If you have a suggestion, or would like to host an event in your area, please send an e-mail to alumni@poly.edu.

[October 2010]

NYU Alumni Day
Saturday, October 23, 2010
NYU Washington Square Campus
Mark your calendar, and watch for full details at www.poly.edu/alumni.

Homecoming
Thursday, October 28, 2010
NYU-Poly Brooklyn Campus
Join us for this campus-wide celebration of our innovative spirit and Poly Pride. Coordinated by the Department of Athletics, Office of Development and Alumni Relations, Student Athletic Advisory Committee, Student Council and Polytechnic Advisory Board. www.poly.edu/homecoming

For more information or to register for alumni events, please visit www.poly.edu/alumni or call (718) 260-3424.
The Golden Jubilee festivities honoring the Class of 1960 included campus tours, an engineering-focused bus tour and a tour of the World Trade Center Memorial, classroom sessions with faculty as well as a special luncheon. From left to right, starting from the back row: Stephen Warshaw, Russell Dietz, Patricia Yalden, Richard Meier, Herbert Tesser, Bob Michalak, Carl Sloan, and Jeanette and Peter Fleig. Front row: Betty and Herbert Hoffman, Margaret Goodman, Jack Nachamkin, Sidney Perkowitz, Phillip Furgang, Bill Harazim, Joseph and Helen Mesquita, Tom and Carol O’Brien, Louis and Florence Citarel and John and Susan Hassell.