

# FOUR STAR

At a ceremony last June at the Women in Military Service Memorial, Ellen M. Pawlikowski '78 was promoted to the rank of four-star general in the U.S. Air Force. Just the third woman in the branch's history to receive a fourth star, General Pawlikowski directs the 80,000-person Air Force Materiel Command, whose stated mission is to "equip the Air Force for world-dominant airpower." On May 21, 2016, the NJIT Alumni Association welcomed General Pawlikowski as its keynote speaker at Alumni Weekend. She recently discussed with *NJIT Magazine* Contributing Writer Tracey L. Regan how a chemical engineer evolved into an acquisitions executive, women's impact on military culture, and how her mother's early experience with health challenges shaped her own and the general's lives.

## HOW DID YOU CHOOSE A CAREER IN THE AIR FORCE?

I had no military background whatsoever before I got into college. My only real exposure was living through the Vietnam War as a child. So I joined Air Force ROTC when I got to NJIT, more out of curiosity, and ended up staying for two reasons: I liked the atmosphere and I liked the camaraderie. When I got to NJIT in 1974 it was a total commuter school, and there were fraternities, but no sororities. There was very little of that collegiate social environment, particularly available to women. It wasn't that we were excluded – it just wasn't there. So my affinity for ROTC came from knowing that it was a place to go and socialize. We loved the lounge. It was a single room in the basement of Eberhardt Hall,

and it served as our office for conducting ROTC activities, but also as a place to relax and study between classes. Since NJIT was at that time a commuter school, a place to hang your hat on campus was a precious commodity.

I did not join ROTC for the money. In fact, I was not a scholarship recipient in my first year, because ROTC scholarships were not available for freshman women. You could only get a scholarship if you were a pilot, and women couldn't be pilots then. At that time, during what I call 'the last great energy crisis,' I was a chemical engineer and I had three different scholarships my sophomore year from chemical companies. After working during the summer and then part-time for a private company – which I really

enjoyed – I nevertheless decided I didn't want to spend the rest of my life making money for somebody else. I liked being part of something connected to a cause, and I wanted to use those talents for other greater purposes. I didn't have any grand ambitions for Air Force service. I wanted to be a development engineer and learn as much as I could. I didn't look past the first four years. That's why I signed a ROTC contract my sophomore year, and I received a scholarship the next year.

## HOW DID YOUR CAREER DEVELOP?

When I graduated from NJIT, the military was undergoing downsizing at the end of the Vietnam War. I didn't imagine I would stay in the Air Force. A number of my professors,

including (Dimitrios) Tassios, were strongly encouraging me to apply to grad school to study my field of interest, thermodynamics. I know that many students find the subject challenging but, to me, it was intuitive. I wanted to learn more about it. The Air Force was more than willing to give me some time off, although I was still obligated to enter active-duty at the end of my Ph.D. studies or four years after my NJIT graduation, whichever came first.

When I finished up at Berkeley, my intent was to put in my four years and get out. I got married to another NJIT grad, Paul Pawlikowski, a Class of '76 chemical engineer, who was a radar navigator for the Air Force. A joint career in the military was a real logistical challenge for spouses at that time. Then the Air Force offered us both

# POWER

an opportunity to move together. One thing led to another, and I got a couple of early promotions. Meanwhile, my husband decided he wanted to teach high school math. So, we decided he would get out of the military, and I would stay in for the full 20 years. That was at the 12-year point for me and, as I always like to say, 'I've been failing at retirement planning ever since.' Why? I just love what I do.

## **DID YOU EVER IMAGINE YOURSELF RISING TO THE LEVEL OF FOUR-STAR GENERAL?**

Absolutely not. You have to remember the circumstances back then. Women couldn't be in operational career fields, and the environment was not conducive to women staying in the military long-term. It was a time when women in uniform could be discharged from service if they became pregnant or even adopted a child. However, I kept getting opportunities. The Air Force just kept connecting me

with opportunities that offered me something new and interesting to do.

My early assignments were driven by the Air Force's needs for B-52 radar navigators. So my assignments more or less followed my husband's assignments. My first job was in a laboratory that analyzed samples of materials from around the world monitoring for nuclear weapon materials. I started designing equipment for gas separations. But, before long, the laboratory director promoted me to be in charge of the mass spectrometers and microbeam instruments. I didn't have a lot of technical depth in these areas, but the director recognized my ability to learn quickly and to lead people. It was a real challenge to get up to speed on the technology while also leading young Airmen who were our technicians. It was in this job that I realized how much I enjoyed the combination of challenging technical problems and leading people at the same time. Opportunities like these are what kept me in the Air Force.



PHOTO: US AIR FORCE

*General Ellen M. Pawlikowski talks with Colonel James Phillips, 919th Special Operations Wing commander, about an aerial cargo delivery system at Duke Field, Fla., Sept. 9, 2015. Pawlikowski visited the Reserve base during her tour of Eglin Air Force Base, Fla. She also met with the wing's combat aviation advisers and flew in the special operations aircraft, C-146 Wolfhound.*

## **HOW DID A CHEMICAL ENGINEER BECOME WHAT IS ESSENTIALLY AN ACQUISITIONS EXECUTIVE?**

Because chemical engineers are extremely talented and versatile, and the best engineers in the world! All kidding aside, I view my technical education as a foundation for learning how to problem-solve – to go into an area I know little about and, in a short period of

time, translate that into making a contribution. When you get a Ph.D., however, there is the view that you prefer deep technical work. That was never really me. I was always 'outcome focused.'

I migrated early on to technical management positions rather than actual engineering. I liked witnessing product delivery, seeing the impact and leveraging more talent than I alone could bring

**"I TELL PEOPLE I USE MY TECHNICAL SKILLS EVERY DAY, PARTICULARLY THE PROBLEM SOLVING AND CRITICAL THINKING THAT YOU LEARN AS A FRESHMAN AT NJIT - HOW DO YOU LAY OUT A PLAN AND MAKE A DECISION?" - GENERAL ELLEN M. PAWLIKOWSKI '78**



General Ellen M. Pawlikowski receives a briefing about autonomy from Dr. Nathaniel Gemelli of the Information Systems Division, Air Force Research Laboratory Information Directorate. The general visited Rome Research Site, N.Y., Oct. 20, 2015, as part of a tour to several units within AFMC.

to it – to lead the orchestra, if you will. When Professor Tassios said, ‘Go off and get your Ph.D. because you’re really smart, and you’re really good at this,’ I thought I’d be doing research. That was the plan. But once I joined the Air Force, I realized my love of orchestrating a big project, pulling everybody together and focusing on delivering a capability that is literally going to save lives. That’s where I get my adrenaline rush – seeing things come together and watching a capability roll off the assembly line. That’s why I stay in the Air Force, for the opportunity to continue doing just that. A seminal moment for me came when I was asked to lead the mass spectrometry branch as a young captain. The technical work was extremely challenging, and I faced some difficult personnel issues. I found that I enjoyed tackling both technical and leadership challenges. I was hooked.

As I’ve gone up the chain of command, I’ve had to start thinking from a tactical level all the way up to a more strategic level. When I was a young lieutenant, my focus was ensuring the team was accurately designing and building a piece of equipment, like a small subset of a bigger airplane, such as

a radar system. The focus became meeting the technical requirement, and utilizing the right people to do it.

In the position I’m in now, though, I look more at the other end of the spectrum. What is the range of capabilities the Air Force needs? How do they all fit together? To make these decisions, I need to understand and appreciate the world environment and how that affects the United States. Then I need to assemble the talent and capability to respond. I have other factors to consider, to include: How does the educational system in the U.S. factor in? If I make an investment today, where is that dollar going to pay off tomorrow?

### CAN YOU DESCRIBE YOUR NEW COMMAND?

The Air Force Materiel Command is essentially the agile combat support command for the Air Force. The rest of the Air Force’s major commands provide a particular operational capability, and AFMC ensures they can do it. This includes making sure Air Force bases Airmen live on have everything from well-paved roads to cafeterias. On the other end of the spectrum, I have the Air Force Research Laboratory, where we

assess technologies, how mature they are and their place in the world 15 to 20 years from now. It’s a very broad support responsibility. We make sure everybody’s got food, but we’re also deciding on the look of the jet my granddaughter’s going to fly when she’s 25 years old.

### CAN YOU DESCRIBE A TYPICAL DAY ON THE JOB?

On a typical day, there are meetings where I’m collecting data – the information I need to fit into my strategic thinking or get things done. At another set of meetings, I’m asked to make a decision to go in direction A or direction B.

I spend a third of my time on the road. For example, during the week after Thanksgiving last year I went down to Eglin Air Force Base, Florida. This is a base within our command, which means that we own the little city on it, if you will. We’re responsible for all of the roads and even the commodores there. But the Air Force Research Lab is there, too. That’s where they’re doing research on new weapons and flying test aircraft at our center there. So I met with leadership, took facility tours, and did a commander’s call, meaning I go out and talk to the Airmen about what’s happening in the Air Force and where the command is headed. You might say a good portion of my day is framing information and making decisions based on it. The other portion of my day is spent communicating to the workforce what those strategic decisions are.

We are in the process right now, for example, of improving the way we manage the workforce. I recently decided to transition the command from one type of civilian personnel management system to a new one, and we’re in a kind of demonstration phase. Building up to that decision we had a lot of discussion about the challenges, because we believe we need to better develop and mature our civilian workforce to ensure

they have the right skills in the future. This system provides more flexibility with personnel processes, so that people are in assignments that are the right fit and can be compensated accordingly for those contributions. Like most things, there were folks not in favor of it and folks who were, so I had to be the one to make the decision. It’s a big decision because it impacts roughly 60,000 people – about 20,000 of us in AFMC are military personnel and the rest are civilians.

Another kind of decision I make is how to provide the support for a new aircraft, like the F-35A (Lightning II), for example. The F-35 is the Air Force’s fifth-generation fighter aircraft, and it’s supposed to replace other aging fighter aircraft we’ve been using for more than 20 years or so. We need to figure out, for instance, where to do the repairs and provide other logistical support.

### WHAT IS IT LIKE TO MANAGE 80,000 PEOPLE?

You have to recognize up front that, even if you are a hands-on person and you like to have that personal touch, you just can’t do it – it’s 80,000 people! The big thing is to understand, trust and empower your subordinate commanders so they have the tools they need. The corollary to that is recognizing that you’re not going to make everybody happy. That’s sometimes hard. I want people to want to work here, to enjoy it, to be challenged, but you just can’t make everybody happy.

### DO YOU STILL USE YOUR TECHNICAL TRAINING?

I tell people I use my technical skills every day, particularly the problem solving and critical thinking that you learn as a freshman at NJIT – how do you lay out a plan and make a decision? From time to time, it’s also good to understand the laws of physics. In my last job at the Pentagon, when we were making major decisions



about all the Air Force acquisition programs, one of the issues we faced was building a new engine for our rockets. So I would have guys come in and brief me on the way we should do it. Others would say, 'No, we should do it this way,' and so understanding a little bit about how an engine might work – a little thermodynamics – never hurt anybody. One of the issues I have to spend time on now is cybersecurity. This requires an understanding of industrial control systems on the Air Force bases and how to make sure they're cyber resilient. This is an area that draws on what I learned in my process control class, way back as a senior at NJIT.

### CAN YOU DESCRIBE YOUR EXPERIENCES AS A WOMAN IN THE MILITARY?

To a degree, some of my experiences as a woman in the military are hard to distinguish from those of being an engineer. When I started at NJIT, I was part of the largest women's class to ever come in, but even then – throughout most of my ROTC career, as well as my career at NJIT – I was the only woman or

one of only two women in any class. Many of the attitudes that made it challenging were as much prevalent in society as they were in the military. In the military, there were more direct institutional barriers concerning, say, becoming a pilot, a navigator or a missileer. On the engineering school side, it was less spoken but more understood that there were certain obstacles. For the most part, even though we like to say engineering is a male-dominated field, I can tell you that I've met very few engineers who cared whether you were a man or a woman. They just cared about your capabilities.

I will also tell you from my professional experience that I believe the military is more open, more ready than other environments to acknowledge and recognize the value of providing opportunities to 100 percent of the population, rather than only 50 percent. Initially there were barriers, because there were limited places, and the attitudinal and cultural barriers that went along with that. When I was a young officer, for example, one of my instructors was giving us feedback

and he said to me, 'You did really, really well, far better than I ever thought any woman would do in this group.' He then proceeded to tell me, 'but I'm not going to make you a distinguished graduate because these other male officers need it more. They're going to go off to be generals.' Those institutional restrictions are essentially gone now.

### HOW HAVE WOMEN SHAPED THE AIR FORCE?

Women now make up about 20 percent of the Air Force. One of the contributions we've seen from women coming into the military is having multi-diverse teams that cover a wide spectrum of talents and capabilities and a broad scope of perspectives. Another contribution comes in the form of work-life balance. As the military has worked hard to ensure that we leverage the diversity of this country with that other 50 percent, we have made significant progress on this front.

When my children were little babies, health care centers had hours that were very limited. There were certain rules that you were penalized – you still are – if you were there too late or too long, because the expectation is that an officer in the military is on duty 24 hours a day. So back then it was very difficult to figure out that balance. When my first daughter was born I got 28 days off. What's changed? Most of our health care centers have much more flexible hours. The Secretary of the Air Force Deborah Lee James just announced late last year that paid maternity leave is now up to 12 weeks. That makes a huge difference. Those changes are as beneficial to the men in the military as they are to the women. So when you think about what impact we've had, the fact that the military adjusted the way we approach those aspects of the work-life balance has changed things for everyone, not just women.

### HOW DID YOUR MOTHER SHAPE YOU?

My mom was born in 1928 with a malformed valve in her heart, in a time when we didn't have open-heart surgery for babies. My grandmother was told my mother probably wouldn't live past the age of six and my mom certainly wasn't expected to have any children because her heart would not survive it. So my mom's view on life was always, 'I could be dead tomorrow, so I'm not going to let that stand in my way.' Her view was that you've got to approach life head-on and, that when you struggled, you just did your best. My mom worked and gave me that role model of a working mom who at the same time carried the bulk of the responsibilities at home, including child-raising. That was the way it was at the time. She didn't have anything more than a high school education but she was very sharp and she was my role model when it came to how to approach life: To not be afraid to take things on that maybe others were concerned or worried about trying to do.

### HOW HAVE COMBAT READINESS AND WEAPONRY CHANGED SINCE YOU JOINED THE AIR FORCE?

Although our mission remains unchanged, the very nature of the world has changed significantly even since I've been in the Air Force. We leverage state-of-the-art technology to fly, fight and win, and we maximize what we can get from each and every Airman with the education and the talent to be able to do that. Today, we're flying airplanes that have some of the best capabilities ever developed. They are very sophisticated with much more connectivity between different platforms than we had in the past. We leverage the information age much more now, just as the rest of the world is doing, than we did when I came into the



PHOTO: U.S. AIR FORCE

General Ellen M. Pawlikowski speaks with Richard Weeks, 561st Aircraft Maintenance Squadron F-15 flight chief, about the positive production improvements realized by the Air Force Sustainment Center while at Robins Air Force Base, Ga., Aug. 4, 2015. Pawlikowski was on a three-day AFSC immersion at Robins, Tinker and Hill Air Force bases Aug. 3-6 where units showed her the center's scope and missions.

Air Force 33 years ago.

If you're flying a fighter jet, say when we were in Iraq, and you were going to bomb a particular location, you'd be in a number of jets that would fly together, communicating with command and control platforms such as the AWACS (airborne warning and control system) and sharing information across those different platforms. That information might be captured by a satellite or a sensor. We now have drones that see a picture and take a video that is pumped down directly to an air operations center, and then back up to someone on an aircraft that's going to launch an attack.

The Air Force will continue to leverage the technology of the era against the ability to be effective with a very talented force. So, nowadays, we can get that information faster than we ever could – we're cyber warriors now, leveraging cyber tools. Today we've got guys in the research lab here that are experimenting with autonomous devices, such as multiple drones operated by a single person that allow us to use swarming weapons.

### HOW DO WE DECIDE ON WEAPONS OF THE FUTURE?

The Air Force has a strategic planning process. We make decisions by first trying to get a picture of what we think the world will look like. That comes from intelligence-gathering at the national level, looking at world economic trends, and where new technologies will go. We see what we have today versus what we think we're going to need. Then we make the decision to invest in technologies that will help us get there. It gets back to laying out five-year budgets. It starts with the Air Force's Future Operating Concept, which defines how we think. It's a futuristic projection of what we think we'll be doing in 2035, and it's predicated on a lot of input from Air Force and

other military leaders, our Defense Department civilian leadership, industry, academics, and Congress. How good is it? It's as good as we're able to project where we think technology will go. We make the investment in those technologies today, while we also look at how much we need to do to keep the systems we have going. It's not easy.

### WHAT FUTURE TECHNOLOGIES ARE WE INVESTING IN NOW?

We have what we call game-changer technologies. One of these is hypersonics – the ability to travel at extremely fast speeds of Mach 5 or 6. This will enable us to get a weapon on a target very quickly from a long distance. Right now, if we had a threat in Syria, we would have to have airplanes close enough to be able to launch an attack. With hypersonics, we would be able to launch from the United States and get there in a matter of minutes.

Another game-changing technology is directed energy. This is lasers and high-powered microwaves. For those of us who grew up with Star Wars and Star Trek – it's not quite the hand-held thing you saw – but a technology that again allows us to get power, if you will, on a target from a very long distance. Autonomy is a third game-changer. This allows us to have devices like robots that can not only operate on their own and think, but also interact as a human. So, you might have a jet with a drone, and that drone flies like a wingman would in the plane. I've talked about using swarming drones as a weapon. But to swarm, you still need some level of autonomy.

There is one other area I see as a game-changer: additive manufacturing. It relates directly to how we support our installations and weapons systems. If you look at what I have to do as part of this command, it's getting supplies all over the world and making sure we have the right things in the right place and at the right time. I



General Ellen M. Pawlikowski, discusses the mission criticality of the cooling water system at Arnold Engineering Development Complex with Jay Maniscalco, AEDC Senior Utility Manager, atop the 57-million-gallon secondary reservoir at Arnold Air Force Base, Tennessee, October 16, 2015.

wouldn't have to be shipping parts if I could just manufacture them in place where they're needed. Say I have a bunch of aircraft, like C-130s, at Ramstein Air Base in Germany, and there are parts I need to replace on a periodic basis. Instead of buying them and stockpiling them, I could just have a 3-D printer and all the materials on-site to make the parts I need.

### CAN YOU NAME A COUPLE OF PEAK EXPERIENCES IN THE MILITARY?

The one I highlight the most is when I spent five years as laser program director of the airborne laser, which I know sounds like something out of science fiction. It was a 747 model that had a chemical laser in the back, and it fired the laser through a set of very sophisticated optics via a special nose on the airplane. We were going to use it to blow up missiles like Scuds, which were used against the U.S. in Desert Storm. The airborne laser allows you to go long distances with a very high-energy laser. It was an extremely challenging program and also extremely challenging from a political perspective. The political challenges stemmed from differing opinions between the President and Congress on how to approach missile defense. As that debate continued, we would often find the program budget cut or

funds added, depending on whose opinion carried the votes. I was no longer on the program when we were finally able to shoot down the missile, but I was there when we fired the big laser test at that first target. So after four-and-a-half years of daily work on the project, it was very rewarding to see that happen.

The other career highlight was when I spent three years in the Office of the Secretary of Defense. In that role, I was responsible for chemical and biological defense after Desert Storm broke out. We were trying to figure out what we needed to do to protect against biological agents, and one of the answers was to vaccinate people. This was a very difficult decision for the military to make because there were concerns about the vaccine's side effects. My job was to make sure we had the right technical information to guide the decision. I was with the Undersecretary of the Navy at the time we made the decision – 'we,' being the Department of Defense, as the decision was made at the highest level with the Secretary of Defense involved – and we were able to lay out a strategy that enabled us to vaccinate people to ensure their safety. So, when I think about contributions, there were literally thousands of lives potentially saved by providing a solution to protect against a biological weapon. ■

## RECOGNIZING EXCEPTIONAL ALUMNI ACHIEVEMENT



In what has become an Alumni Weekend tradition, the Alumni Association of NJIT honored five graduates for exceptional achievements in the private and public sectors at a dinner enjoyed by the honorees along with family members and friends.

*Front row: Colonel Heather McGee and Robert Rossi. Back row: Ehsanollah Bayat and Ramon Gonzalez. Not pictured: Harry Ettlinger.*

### **Ehsanollah Bayat '86** (B.S., *Electrical Engineering Technology*)

Ehsan Bayat was born in Afghanistan and moved to the United States in 1980. Since his arrival, he has returned to his native country of Afghanistan to establish several successful businesses and a thriving nonprofit organization. Seeking to improve the lives of Afghanistan's citizens, Bayat founded Telephone Systems International (TSI). Together with the Afghan Ministry of Communications, TSI currently owns and operates the first and largest mobile phone company in Afghanistan, Afghan Wireless. Bayat also founded the Ariana Radio and Television Networks, which broadcast to large audiences in Afghanistan and Pakistan.

Bayat has contributed to the development of Afghanistan through the Bayat Foundation. Founded in 2006, the Bayat Foundation strives to improve living conditions for people across Afghanistan by providing food, clothing, orphan care, entrepreneurship programs and athletics. For his efforts, he has received numerous awards, including the Mahatma Gandhi Humanitarian Award, Businessman of the Year from the Afghan-American Chamber of Commerce and the Human Rights National Award from the Afghanistan Human Rights Association.

### **Harry S. Ettlinger '50** (B.S., *Mechanical Engineering*)

Harry Ettlinger was born in Karlsruhe, Germany, in 1926 to a Jewish family. He and his family fled the Nazi regime in 1938 and traveled to the United States. Ettlinger was drafted into the U.S. Army six years later. In May 1945, Ettlinger volunteered for service as a Monuments Man, assigned to the headquarters of U.S. Seventh Army in Munich, Germany, by Captain James J. Rorimer. There, he translated German intelligence documents, and acted as Rorimer's personal translator during his interrogation of Heinrich Hoffmann, Hitler's personal photographer. Ettlinger accompanied Rorimer to Germany, where he was among those who discovered thousands of masterpieces, jewels, furniture, and cultural objects stolen from French Jews by the Nazis.

Ettlinger returned to Newark in 1946, and served as deputy program director for a company producing guidance systems for submarine-launched nuclear weapons, retiring in 1992. Ettlinger is currently co-chair of the Wallenberg Foundation of New Jersey, named in honor of Raoul Wallenberg, a wealthy Swedish-born Protestant who rescued approximately 100,000 Hungarian Jews during the Holocaust, and continues to speak about his experiences around the world.

### **Ramon Gonzalez '09** (B.S., *Information Technology*)

Ramon Gonzalez serves as systems reliability engineer at IEX Group Inc., where he helped build the IEX trading infrastructure. The system delays stock signals by a fraction of a second so that high-frequency trading mechanisms are unable to detect and outpace them, creating a market that aims to maximize shares traded at the best available price, decrease information leakage, eliminate informational disadvantages and persistent inefficiencies, and promote an opportunity for natural interest to interact without unnecessary intermediation.

Within a short time after arriving at IEX from NASDAQ, where he served in a similar position, he was featured in *Flash Boys* (A Wall Street Revolt) by Michael Lewis, the author of Wall Street exposés such

as *Liar's Poker* and *The Big Short*, who had followed the firm's progress. The book helped place the firm at the center of a growing public debate over poorly understood market practices, which undercut the value of a variety of investment funds, including retirement plans. In addition to his role at NASDAQ, Gonzalez also served as systems administrator at the East Rutherford Fire Department; database administrator at Prudential Financial; and desktop and engineering support at Lehman Brothers.

### **Colonel Heather McGee '93** (B.S., *Civil Engineering*)

Colonel Heather McGee serves as the chief, Cyberspace Strategy and Policy Division in the Office of the Chief, Information Dominance and Chief Information Officer, Office of the Secretary of the Air Force (SAF/CIO A6). She leads a 10-person team in the analysis and development of cyberspace strategy and policy, and provides guidance and advice to Air Force and Department of Defense agencies on the implementation of cyberspace capabilities to support government, private, and public sector requirements.

Prior to her current position, Colonel McGee served as chief strategist, Commander's Action Group, NATO Air Training Command in Afghanistan; chief of the Program Integration Branch HQ AFSPC, United States Air Force at Peterson Air Force Base, Colorado; commander, 34 Student Squadron, Air University, Maxwell Air Force Base, United States Air Force; director, Commander's Action Group, Hickam Air Force Base, Hawaii, United States Air Force, among many other distinguished positions. In addition to NJIT, she has obtained advanced degrees from the University of Phoenix, the School of Advanced Air and Space Studies, Air University, and Embry-Riddle Aeronautical University.

### **Robert Rossi '67** (B.S., *Chemical Engineering*)

Bob Rossi has served on the Alumni Association of NJIT's Board of Directors; member of the Department of Chemical, Biological and Pharmaceutical Engineering Industry Advisory Board; member of the New York Alumni Club Steering Committee; and member of the Class of 1967 Reunion Committee. He also volunteers as a docent for the American Museum of Natural History; assists with paleontological field and lab work for the Marmarth Research Foundation in North Dakota; serves as a full member of the American Chemical Society; the Technical Association of the Pulp and Paper Industry; The Metallurgical Society and currently is chairperson for the North Jersey section of the American Institute of Chemical Engineers.

After graduation, Rossi's career took him into the technical development, marketing and sales of large thermal processing systems for the petrochemical, minerals, paper, and specialty chemicals industries in over 30 countries. He later utilized his engineering skills to develop and market new "clean coal" and environmental control technologies for the electric utility industry, and worked as a senior project developer with the independent power affiliates of both PSE&G and Pacific Gas and Electric. Prior to his retirement, Rossi worked for the Linde Group, developing new uses for industrial gases. Post-retirement, he is serving as a senior consultant to Carbon Engineering in Calgary, Alberta, that is developing a novel climate change remediation technology. He has been granted multiple U.S. patents related to carbon dioxide capture.