We have a new video:
GO.RUTGERS.EDU/VT5G6B1Q

And a new look:
SEBS.RUTGERS.EDU
Dear friends,

We’re excited to share with you this online edition of our bi-annual magazine, Explorations, featuring stories about our students, faculty, and alumni, and how their activities enrich our work and our collective community.

While this is the first time we’ve done an online edition, the magazine is still a rich offering of research, teaching, and service excellence that has defined our school throughout its history. The “Jersey Roots, Global Reach” of the faculty in the Department of Ecology, Evolution, and Natural Resources, the groundbreaking discoveries in our campus greenhouses, the purpose-driven extracurricular activities of our students, and the several faculty who each earned multiple degrees “on the banks of the old Raritan” are on proud display in its pages.

Our efforts to connect you even closer to our school have been boosted with the addition of Brian McGonigle to the Office of Alumni and Community Engagement. His primary task is to bring together our diverse audiences—alumni, students, faculty, staff, retired faculty and staff, and stakeholders of all kinds—to experience and become more fully engaged in the work of the school and university.

In November, we were delighted at the news that Thomas Leustek, professor in the Department of Plant Biology and associate dean of academic administration at the school, was recently elevated to the rank of fellow by the American Association for the Advancement of Science (AAAS). AAAS fellows are researchers from around the world who are recognized for significant achievements across disciplines, from research and teaching to technology and administration. Founded in 1848, the AAAS is the world’s largest general scientific society. It began its tradition of selecting fellows in 1874.

Leustek joins several other contemporary faculty in our school to be so honored.

We are grateful for your continued support as alumni and friends. I urge you to stay connected with us, in person or online, via the Office of Alumni and Community Engagement at alumni.sebs.rutgers.edu.

Robert M. Goodman
Executive Dean
School of Environmental and Biological Sciences

AAAS Fellows at SEBS

Tamar Barkay
Biochemistry and Microbiology

Joan Bennett
Plant Biology

Anthony Broccoli
Environmental Sciences

Joanna Burger
Ecology, Evolution, and Natural Resources

Randi Gaugler
Entomology

Robert Goodman
Executive Dean; Ecology, Evolution, and Natural Resources

Judith Grassle
Marine and Coastal Sciences

Steven Handel
Ecology, Evolution, and Natural Resources

Bingru Huang
Plant Biology

Henry John-Alder
Ecology, Evolution, and Natural Resources

Thomas Leustek
Plant Biology

Pal Maliga
Plant Biology

Bonnie McCay
Human Ecology

Peter Morin
Ecology, Evolution, and Natural Resources

Karl Nordstrom
Marine and Coastal Sciences

David Pramer
Biochemistry and Microbiology

Alan Robock
Environmental Sciences

Mark Robson
Plant Biology

Thomas Rudefeld
Human Ecology

James White
Plant Biology

Lily Young
Environmental Sciences

Barbara Zilinski
Plant Biology

Barbara Zylstra
Biochemistry and Microbiology
Since its founding in 1864, the School of Environmental and Biological Sciences has epitomized the values of teaching, research, and service as embodied in its land-grant mission. Its accomplishments enrich all of us in the Rutgers community. As a graduate of Rutgers University, and now chancellor, it gives me great pride to see the positive impact the school has on a local, state, and global scale as we continue to make the world a better place.

As chancellor of Rutgers University–New Brunswick, the university flagship, Molloy oversees an internationally renowned research institution with more than 50,000 students, 4,000 faculty, 12 degree-granting schools, and 175 research centers.
Keeping the Bees Buzzing

Though over 80 percent of all flowering plants and one-third of the world’s crops rely on bees for pollination, bees are relatively under-studied. DEENR leads global efforts to document and conserve bee diversity to ensure the persistence of this key benefit of biodiversity.

Plants in the City

Through DEENR’s affiliation with the Chrysler Herbarium, and its research and teaching, the department explores the ecology and evolution of plants in cities, and the use of plants to ensure the resiliency of ecosystems to climate change.

Protecting Biodiversity

Faculty in the Department of Ecology, Evolution, and Natural Resources (DEENR) are on the front lines of climate change research.

Climate change is the culprit behind many global challenges, like climbing temperatures, sea level rise, and extreme weather events. But it’s also a top threat to wildlife around the world already struggling with land degradation and habitat loss. In short? Biodiversity, or the variety of life on earth, is at risk.

“These species and ecosystems form the foundation of human existence, from supplying our food, fuel, and fiber to enhancing our physical and psychological well-being,” says DEENR chair and professor Julie Lockwood. “When we lose species to extinction or damaged ecosystems, we lose some of the benefits biodiversity provides.”
Ensuring There are Plenty of Fish in the Sea

Marine ecosystems are wonderfully diverse, and provide society with myriad practical services. Yet, marine ecosystems are under considerable stress from climate change, pollution, and over-exploitation. DEENR provides the scientific evidence behind the conservation, restoration, and protection of coral reefs, estuaries, seagrass meadows, and open ocean ecosystems.

Staving Off Animal Extinctions

A first love of many children are the animals they encounter as they play and explore. Today, these animals are disappearing in New Jersey and worldwide. DEENR produces foundational research on the role the wildlife trade, diseases, and habitat loss can have on animal extinction.

These benefits range from those as straightforward as freshwater access and food production to those more difficult to quantify, she says, “such as the elevated sense of wellness after a hike in a forest filled with birds.”

In response, DEENR focuses on the fate of the world’s biodiversity in the face of climate change and other influences like globalization and massive shifts in land use. Faculty research centers on understanding how biodiversity is generated through evolution, and how species may further evolve in response to these threats.

“Evolution is not an event that happened long ago, but is instead a process that happens in real time, right now,” Lockwood explains. “Our faculty have documented evolutionary responses of a wide variety of species to things such as climate change, invasive species, and wildlife diseases.” Ultimately, these findings inform action to stave off species extinction or restore ecosystems so that they provide the various benefits we derive from biodiversity.

Indeed, DEENR’s research continues SEBS’ rich tradition in natural resource science by informing best practices used by native wildlife conservation groups and industry alike. Plus, undergraduate and graduate students benefit from cutting-edge applied biodiversity science, and learn to effectively translate research into action through engagement in policy-making or environmental education.

“The science we generate often has clear and direct application to the conservation and restoration of our local ecosystems; the protection and sustainable harvest of our crops, forests, and fisheries; and ensuring the resilience of our coastal and freshwater ecosystems to climate change,” Lockwood says. “In most of our research, faculty and students have a very clear application in mind when initiating their work, interacting closely with local, national, and international stakeholders to ensure that their work makes a measurable impact on the environment.” Here, discover just some of the most pressing topics addressed by DEENR faculty.
Understanding the Illegal Wildlife Trade

Although protected from capture and sale by US law, indigo buntings are increasingly poached from their wintering grounds to feed the domestic and international bird trade. At DEENR, researchers assess the substantial ecological and societal impacts of this and other illegal wildlife trade.

Assessing the Impact of Exotic Pets

The market in legal- and illegally-traded wildlife has burgeoned over the past two decades and is responsible for the import of millions of live animals into the U.S. from around the world. DEENR leverages big data to understand the market and ecological impacts of this trend.

Wildlife Trade: Mitigating Impacts on Nature

The wildlife trade has become a multi-billion dollar business over the last two decades. Typically, animals are sold for use as pets, live food, or living ornaments; however, animal parts are also coveted for use within traditional medicine or for clothing and jewelry. Much of the trade is legal, and involves animals that are either bred in captivity or caught and removed from wild populations. That said, some trade is illegal, in which case, individual animals are caught or killed by poachers and sold on the black market to consumers that may—or may not—be aware of the illegality of their actions. Across all forms of wildlife trade, the result is the same: substantial ecological and societal impacts.

Consumer demand for traded wildlife is a leading factor in the endangerment of several thousands of species worldwide, including species that are native to the US. At the same time, the wildlife trade, especially in exotic pets, has also led to the introduction of harmful invasive species and infectious diseases. How can these impacts be managed?

DEENR chair and professor Julie Lockwood leads a team that leverages big data to document the market dynamics of the wildlife trade worldwide. The team builds extensive datasets that catalog the ecological and societal risks, then uses this data to inform policy and management recommendations. In essence, the Lockwood team combines cutting-edge information technology with old-fashioned natural history knowledge to mitigate the damage the international wildlife trade has on global biodiversity.

Natural Selection: Quicker Than We Thought?

Thanks to climate change, animals must continually face conditions they’ve never experienced before. And since humans are so connected to—and, indeed, rely on—the natural world, the ability of species to rapidly adapt and survive in these new conditions is critical. Traditionally, it was thought that natural selection occurs too slowly to address this issue, but there is mounting evidence that species can and do rapidly evolve.
Examining Evolution

A fungal disease called white-nose syndrome has killed millions of bats. Are they evolving to resist it? Research at DEENR reveals that natural selection happens much more quickly than we thought, and may be a natural response to climate change and other stressors.

Conserving the Region’s Fish Supply

New Jersey has experienced dramatic changes in the fish available to its fishing fleets over the last few decades, including lobster moving out of the region and summer flounder moving in. DEENR researchers examine where and why species are moving, and what it means for conservation.

Marine Species on the Move

Fish is an important food source for more than half the world’s population, and generates an economic impact of more than $200 billion in the US alone. In New Jersey, the fishing industry has grown to become the largest in the Mid-Atlantic region and one of the largest in the country. The challenge? Ocean ecosystems are rapidly changing as a result of climate change and other human activities, and many marine animals are on the move to new areas. Since fish and invertebrates are even more vulnerable to warming temperatures than land animals, the local and regional impacts are clear: lobster and surf clams have become rare in some regions of the Mid-Atlantic, while black sea bass and blueline tilefish have expanded into the region.

Here at SEBS, associate professor Malin Pinsky’s research is focused on understanding where marine species are moving, why these changes are happening, and what it all means for effective ocean conservation and management.

First, his team digs into historical records to understand changes over the past 50 years on America’s coasts and those around the world. They then compare these changes to information on fishing, temperature, and other ocean conditions to understand potential causes. And thanks to collaborations with fisheries managers—including the Mid-Atlantic Fisheries Management Council and NOAA Fisheries—these findings are integrated into current fisheries management and other marine conservation efforts. But Pinsky’s lab is also looking to the future, using high-tech climate models to inform adaptation efforts going forward.
Jeffrey Garcia-Sanchez
SEBS’20, BIOLOGY

If you ask Jeffrey Garcia-Sanchez SEBS’20, viruses are the “most interesting organisms on the planet.” And, because he’s a McNair Scholar, he’s able to pursue his dream of becoming a virology researcher and professor. “I want to work in a lab and do research, but I also want to pass on the information that I learn in the classroom,” he says. He’s well on his way, recently completing the 2019 Summer Research Institute under the direction of John McLaughlin in the Department of Plant Biology, where he helped research the effects of a certain kind of protein on a wheat-infecting fungus.

“I’m learning more than I ever could on my own,” Garcia-Sanchez says. “The McNair program helps people like me who are first-generation college students and don’t necessarily have anyone to guide us on how to apply to graduate school, apply for fellowships, or ask for recommendation letters.” In addition, he’s also honing various skills including writing longer research papers and managing time, which is critical for juggling lab work and coursework. “I’m currently working on my honors thesis,” he says, “which is something I would not have done if not for the McNair program.”

But one of the major benefits of being a McNair Scholar has nothing to do with the lab, or research, or grad school—it’s interacting with other students who share the same goals and life experience. “Meeting and working with people outside your area of study is very helpful because it not only exposes you to other perspectives, but it helps you hone your communication skills,” Garcia-Sanchez says. “When you practice explaining what you do to those who aren’t familiar with it, you learn how to be a stronger communicator, which will be important in my career as a professor.”
Navigating the Ph.D. Path
TERTORAL DEGREES AS UNDERGRADUATES

Toyosi Dickson
SEBS’20, ENVIRONMENTAL SCIENCES

A Newark, New Jersey native, Toyosi Dickson SEBS’20 saw firsthand the ways in which pollution and environmental justice are inextricably linked. “Many issues resulting from pollution or air quality are deeply seated in the environmental decisions made by government officials,” she says. “It is out of the hands of the citizens who are underrepresented in the political process.”

Her goal? To shine a research spotlight on ecological problems affecting underrepresented communities, especially those inhabited by low-income people of color. This type of research is not yet heavily studied in current conservation, she says, since most tends to focus on how climate change and pollution can affect agriculture or untouched land. “When you hear the word ‘ecosystem,’ you think about forests, natural parks, farms, or beaches, but never sewer systems or water quality in the cities,” says Dickson. “I want to increase the visibility of these issues that plague urban communities.”

Her dream job is to study urban soils and, to get there, she’s beginning with a senior thesis on alternative stable states, or soils which have undergone disturbances and changed as a result. Once she graduates, her plan is to continue on to higher education and become a professor. “I think it’s the best of both worlds,” she says. “I get to do more of my own research that I become more enthusiastic about, but I also get a means to uplift future scholars in understanding a paradigm of environmentalism and conservationism that isn’t typically talked about.”

Being a McNair Scholar has enabled Dickson to take on unique research projects, connect with new people, and reach for educational opportunities that seemed out of reach. “Investing in McNair Scholars is essentially investing in the future of people who care about the world and the big picture, when most of us are just hustling to pay the bills,” she says. “When you invest in programs like these, you invest in people who want to ask questions and improve people’s lives and the future.”
Whether they returned to the school or never left, these faculty members are among a number who are also alumni.

SEBS faculty hold degrees from universities across the nation and around the globe, but there are also a number of homegrown faculty who received their degrees when the school was known as Cook College. These three featured faculty not only received their undergraduate and graduate degrees from the school, but they also lead renowned centers and are consulted experts in their fields. We asked them to reflect back on their years as students, share some memories of those days, and remember elements that were linchpins in their careers.

Anthony (Tony) Broccoli CC ’77, GSNB ’79, ’98
Broccoli is a professor in and chair of the Department of Environmental Sciences, and director of Rutgers Center for Environmental Prediction. His fascination with the weather began during his childhood in Irvington, New Jersey, where snowstorms and unusual weather events captured his interest. With the desire to study meteorology, a high school guidance counselor steered him to Cook College, where he enrolled in 1973. “Although my first-year courses didn’t include meteorology, I found my way to the small, nondescript building (now known officially as 80 Nichol Avenue) that then housed the meteorology program,” he says. “The professors and students made me feel welcome there, and I would spend time between classes looking at the weather maps—posted on the walls in those pre-internet days—and discussing upcoming weather events. One of my professors was Jim Miller, who was (and still is) an excellent source of advice. I had the opportunity to do research, which would become a central part of my professional career.” Fast forward several decades, and after 21 years working at a federal research laboratory, Broccoli returned to the campus where his career began. “Many things have changed, including the location of the meteorology program, but the most important one has remained the same,” he says. “When I arrive on campus, it feels like home.”

Bruce B. Clarke CC ’77, GSNB ’82
Clarke is a Rutgers New Jersey Agricultural Experiment Station extension specialist, professor in turfgrass pathology, and director of the Rutgers Center for Turfgrass Science. Clarke started his career as an undergraduate student in the first class of Cook College, which was formerly the College of Agriculture and Environmental Science (CAES). He was also among the first students to live in the Newell Apartments. “1973 was the tail end of the hippie movement, the Vietnam War was coming to an end, and the focus at Cook was on saving the environment,” he says. “There were no personal computers, we used slide rules in class, and if I wanted to analyze data for a class assignment, I had to type it on FORTRAN punch cards and feed them into the mainframe computer.” He fondly remembers Spencer Davis and Eileen Brennan, faculty members who greatly influenced his life and helped shaped his graduate experience at Rutgers. “Dr. Davis
taught the Plant Disease Diagnostic Course that I have taught now for over three decades. He inspired me to become an extension specialist and was a tremendous role model,” Clarke says. “Dr. Brennan was my graduate adviser who helped me develop my expertise in plant pathology. I owe a lot to these wonderful people as well as C. Reed Funk, the father of the Rutgers Turfgrass Program, who helped me grow into my current role as director of the Rutgers Center for Turfgrass Science.”

Karyn Malinowski CAES ’75, GSNB ’80, ’86

Malinowski is a professor of animal sciences and director of the Rutgers Equine Science Center. When she applied to Rutgers for the fall semester of 1971, she had to enroll at Douglass College, and then transfer to CAES in 1972—the year Rutgers became coeducational. In fact, her graduating class of 1975 was the first with females enrolled. Malinowski recalls those who inspired her, as well as some of the roadblocks she encountered along the way. “The professor who influenced my career path was Ralph Mitchell, who taught the Introduction to Animal Science course and animal genetics,” she says. “He also was the adviser of the newly formed Animal Science Club which my classmate, Diane Simoncini CC ’75, DVM Cornell ’80, and I formed as its first president and vice president respectively, after the adviser of the pre-vet club made it very clear that female students were not welcome. Dr. Mitchell and Dean Charlie Hess told us to form the new club, and to welcome any students interested in animal sciences.” Malinowski noted, “What has changed at the Cook Farm is the fact that we now have horses which are used for teaching, research, and outreach programs. I know a lot about cows because we did not have the opportunity to work with horses in the early 1970s.” Malinowski played a key role in the school’s transition to equine—in the early 1980’s when the beef herd at the Ryders Lane Farm was sold, it was replaced with a herd of Standardbred mares for her doctoral project.
Welcome

the updated

to Martin Hall
Welcome to Martin Hall, administrative home of the Rutgers School of Environmental and Biological Sciences and the Rutgers New Jersey Agricultural Experiment Station. Here is where our state’s land-grant tradition continues, evolving for the future and preparing the next generation of creative problem solvers.
RESEARCH

BEYOND THE LAB:

Research and Teaching in the Glass-room

Whether covered in glass or polyethylene, the most diverse spaces on the George H. Cook campus are the greenhouses—with one making agricultural history and revolutionizing the industry.

The prominence of greenhouses on the George H. Cook campus reflects the orientation of the school toward the natural sciences. However, not transparent is the impressive number and configurations of structures, and the vast diversity of activities within. A stroll across campus reveals the main glasshouses that are hard to miss—the Research Greenhouse near the intersection of College Farm Road and Dudley Road, and the Floriculture Greenhouse between Nichol Avenue and Red Oak Lane. Not as noticeable are the various glass and polyethylene greenhouses, hoop-houses, and high tunnels tucked in various nooks and crannies in and around, and on the outskirts of campus. Whether atop Foran Hall, scattered around the entomology labs, behind Helyar House, nestled in the Rutgers Gardens or Hort Farms along Ryders Lane, or at the edge of campus near the reservoir, there is every iteration of greenhouse available for use in research, teaching, and community outreach by faculty, staff, and students. In fact, the square footage of greenhouse space on campus exceeds that of classroom space.
While the Department of Plant Biology is the prominent user of many of these spaces, other users include the Departments of Environmental and Natural Resources, Entomology, and Food Science, as well as the New Jersey Agricultural Experiment Station, Rutgers Cooperative Extension, and Rutgers Gardens.

The range of material grown in these structures covers everything from soup to nuts—that is, duckweed soup to hazelnuts. In fact, breeding of new plant varieties in the greenhouses has launched products such as Rutgers Scarlet Strawberry, Rutgers Scarlet Lettuce, and downy mildew-resistant basil. Plus researchers are on the cusp of starting a new industry of disease-resistant hazelnuts for the Northeast. While some of these new breeds are a boon to New Jersey and regional agriculture, other plant strains have global impacts. Duckweed is a promising superfood and biofuel. Fans of vanilla, chocolate, and mint ice cream benefit from enhanced productivity of vanilla beans, cocoa pollination, and mint oils. Stress-tolerant turfgrasses are developed to handle increased environmental pressures from heat, drought, salinity, cold, and elevated atmospheric CO₂ concentration. Nutraceuticals and plant-derived compounds promote health and wellness. Plants with aromatic volatiles enhance culinary uses and even repel mosquitoes.

Entomology greenhouse research seeks control measures for the menacing invasives Brown Marmorated Stink Bug and Spotted Lanternfly, and delves into an area fans of the television series Bones would admire: forensic entomology.

The structures involved in education and community outreach activities host an array of material including bedding plants for community gardens and student farms, tropical and house plants, marigolds for Dia de los Muertos, and the most dazzling array of Christmas colors at the annual Poinsettia Open House.

Overall, the local, regional, national, and global impacts of the work in these greenhouses is on a grand scale—but ironically, the most significant structure on campus is the smallest one, and is currently not in use. It is a national landmark and is the first-ever air-inflated, double-layer polyethylene greenhouse (AIDLPG). Developed by Rutgers agricultural engineering specialist William Roberts in 1964, the AIDLPG revolutionized the use of greenhouses worldwide, allowing for long-term use of double layers of cost-effective polyethylene, held firmly in place by pumped air between the layers. This technology not only aids commercial growers with low-cost greenhouses, but it is also used extensively in third-world countries to extend growing seasons, thereby increasing food security. The AIDLPG so revolutionized the industry that in 2004, the American Society for Agricultural and Biological Engineering (ASABE), dedicated the structure as an ASABE Historic Landmark.
Get WHAT THEY Give

Whether they’re helping the campus community or their neighbors in town, these students are on a mission to give back.

Rutgers University Seeing Eye Puppy Raising Club (RUSEPRC)

Ash C. Dunlevy SEBS’21, vice president of the RUSEPRC, knew he wanted to join the club before he even started as a student. “I had come to the SEBS Honors Program open house, and I ran into a fellow with a puppy just sitting in the student center,” he recalls. “I was delighted by the idea that you could be a student, live on campus, keep up with classes, and also engage and give back in such a fun way.”

Club members have different roles, all in support of one mission. Puppy raisers have the most responsibility, receiving a puppy at seven weeks old and being the primary caregiver until the puppy is about 15 months old. Sitters step in when raisers need a helping hand. And general club members help with events and meetings. “We have a strong identification with the G.H. Cook campus,” Dunlevy says. And, as the club arrives at its 20th anniversary, Rutgers students—especially SEBS students—have a special connection to the dogs and mission in return. Why?

“There’s a general positivity we bring to campus, I think,” Dunlevy adds. “Professors and students love having the puppies in class, and there’s something to be said for a campus that supports this club. We’re not just any old campus—we’re the campus where students have dogs for charity.”

The puppies go everywhere the students go, with very few exceptions. “We housetrain them, teach them basic commands, and most importantly, provide exposure training,” explains club president Emily Dela Cruz SEBS’20. “We don’t know if the dog will end up in a suburb, city, or rural setting, or with someone young or retired. So we make sure they see all kinds of people and places, and hear all kinds of sounds.” This means most SEBS students encounter the dogs at some point, and derive a unique benefit in addition to the one the club provides The Seeing Eye and its beneficiaries.

In return, raisers and club members alike gain valuable time management skills and learn the importance of commitment (especially if they’re raising a puppy while taking on a full course load). “A lot of people think we’re teaching these puppies, but we’re learning a lot more than we’re teaching,” says Dela Cruz. “I’ve learned to be more responsible, but I’ve also learned to be selfless. The club and The Seeing Eye are made of the greatest group of people who want to make a difference in the world.”
Kaitlin Quinn SEBS’21 has been coming to Ag Field Day since she was a child (her mother is a Cook College grad), and she remembers seeing the Mounted Patrol officers on campus. When she arrived at the Admitted Student Open House as an incoming freshman, she was happy to see they were still around. “I went to the Facebook page, and asked how I could get involved,” she remembers. “I’ve always been involved in service, so when I came to campus I wanted to continue.”

Rutgers University Mounted Patrol is the only student-run mounted patrol in the country, and plays a vital role as part of campus security. Every student serving on Mounted Patrol is a Campus Security Officer, with a direct line to RUPD, and responsibilities ranging from canvassing the campus to enforcing the handbag policy at football games (which, alone, is a lesson in patience, customer service, and communication). But their value extends well beyond their formal job descriptions. “We’re ambassadors of public safety,” says club president and company supervisor Lara Watrous SEBS’20. “People are more prone to come up to us when we have the horses because they want to pet them or ask us questions. They may not feel as comfortable approaching us if they see us simply walking about in a reflective vest.”

In addition to serving the campus community, these students are also strengthening the university’s ties to the surrounding community, by participating in university events open to the public. This past fall, for example, Mounted Patrol brought the horses to the Graveyard Smash, a safe trick-or-treating option for New Brunswick children. “There’s usually a stigma against any kind of law enforcement, which I can understand, but Mounted Patrol brings people together,” Watrous says. “We help bridge that gap and show people that we’re not all bad. We’re nice people and you can pet the horses!”

Student Farm

Rachel Rapach SEBS’21 (pictured below), an agriculture and food systems major, wasn’t sure what she wanted to do when she graduated. What she did know was that she enjoyed gardening and growing things. So she became a summer intern at the Rutgers Gardens Student Farm. Farm interns have a range of responsibilities, from starting seedlings and prepping beds to installing drip irrigation, hand-tilling, harvesting, and selling produce at the farmers market. Along the way, they learn how to grow food, but also hone their responsibility, creativity, and organization skills. “Farming is harder than it seems,” says former intern Ameen Lotfi SEBS’20 (pictured below). “It takes a lot of intellectual and physical skills, as well as a deep sense of timing. It’s an art.” And, it’s one that gives back.

In addition to the market, produce from the farm finds its way to local food pantries like Elijah’s Promise in New Brunswick and the Rutgers Student Food Pantry, which is a new partnership started this year on the heels of reporting that one-third of Rutgers students are food insecure. “This helps those who need food and use the pantry to get something nutritious,” says Rapach. “A lot of the time, the food pantry has boxed or canned food—which is valuable—but we can supplement that with lettuce, kale, chard, eggplant, tomatoes, potatoes, and other fresh foods.”

That said, the farm’s reach goes beyond those who enjoy its bounty. “We’ve lost our connection to food,” says Lotfi. “The farm helps us reestablish that connection.” Plus, since it’s located at Rutgers Gardens, anyone can stop by and learn more. “There’s a lot of people who come to the farm to see what’s available or walk around,” says Rapach. “It gives them the opportunity to see how food is grown and what plants look like, because not a lot of people know what plants look like with fruit on them!”
The Chrysler Herbarium at Rutgers University is the last internationally recognized herbarium still in existence in the state of New Jersey, and it contains over 200,000 scientific specimens collected over the last 180 years. So it’s no surprise that the students who work there are a proud group—even after they graduate. Here are just some of the experiences of “Herbarium Army” members.

Natalie Howe GSNB’16
Ecology and Evolution

Natalie Howe is a biological scientist at the US Department of Agriculture’s Animal and Plant Health Inspection Service.

On the value of the herbarium:
I used the Philadelphia Herbarium at the Academy of Natural Sciences at Drexel University after leaving Rutgers, and I had the confidence to work with those specimens and know I was handling them with the proper reverence.

On her Rutgers mentor:
I had a lot of great mentors! John Dighton, my adviser, taught me to fix problems as soon as they present themselves. Lena Struwe taught me there are lots of different ways people connect with plants and science in general, and that it’s fine (and great!) to embrace the parts of your field that seem more commercial, less serious, or more fun than the contents of the standard curriculum. Ken Clark taught me you can do an awesome job even if, from time to time, you indulge in hobbies you love. Claus Holzapfel, my birding mentor, taught me how fun it is to work with amateur scientists. And, from Steven Handel, I got to do my dream job of leading nature walks, and this helped me appreciate that nearly every place we encounter has some interesting natural history background.

Her favorite spot:
The D&R Canal towpath. I had so many nice days of dog walks, jogs, and chats with friends there, plus some great nature encounters.

Alexandria Sun SEBS’17
Ecology, Evolution, and Natural Resources

Alexandria Sun is currently pursuing a master’s degree in biology from Ball State University, with plans to work in wildlife and resource management or science outreach.

On Rutgers Pride:
I love being able to tell people about all of the cool opportunities I had at Rutgers. Working at the Chrysler Herbarium definitely set me up for success with getting my internship at the New York Botanical Garden. The field techniques classes in the Department of Ecology, Evolution, and Natural Resources were great hands-on experiences. The Leadership in Sustainability capstone I took was so interesting and fun. It’s easy to get lost and forgotten in such a big school, but if you advocate for yourself and take advantage of the resources, it’s great.

Her favorite campus spot:
Every time there’s a nice day out, wherever I am, I wish I was spending the afternoon in my hammock out by Passion Puddle reading and talking and climbing trees with friends.

Her message for the Herbarium Army:
To future members of the Herbarium Army: Please write neatly, don’t overdo the glue, and appreciate and respect those who surround you. We nerds have to stick together.
Jill Azzolini is currently pursuing a doctoral degree in evolutionary biology at Arizona State University. Her research interest is conservation physiology, specifically, investigating the physiological effects of environmental stressors on a population, and using the results to better inform conservation management strategies.

**On the value of the herbarium:**
Working as collections manager of the herbarium taught me many important lessons about teamwork, leadership, organization, and communication. With an army of 14 undergraduates under my supervision, communicating effectively and staying organized were absolutely essential! This has translated well to my graduate studies, where the same skills are critical.

**Her “ah-ha” moment:**
I had just finished my second year at Rutgers, which meant I had just completed all of my core science requirements and was beginning to turn my attention to gaining research experience. However, as I had not yet taken any major-specific classes, I hadn’t met most of the DEENR faculty. It’s hard to help with someone’s research when they have no clue who you are! So I looked to outside sources for gaining experience, and I ended up doing a science media internship with Day’s Edge Productions.

Part of my internship involved interviewing a faculty member and creating a short documentary-style video about their research. My video was exactly what I needed to stand out in the crowd. Henry John-Alder was impressed with the video, and featured it on the DEENR homepage. I even got interviewed! The video helped put me in a position where I felt comfortable asking Dr. John-Alder about research opportunities. He accepted me into his lab, and also recommended me to other faculty as well. This got the ball rolling to begin gaining research experience, which is critical for someone like me who wants to continue on to graduate school.

**Her message for the Herbarium Army:**
Don’t just go through the motions! Many herbarium tasks are straightforward enough that you can become a bit desensitized to what you’re doing. Recognize how incredible it is to have beautiful, preserved specimens dating all the way back to the 1800s. If you find a specimen that looks interesting, find out more about that plant: Is it endangered? Does it grow near me? Has its range shifted due to climate change? There are all kinds of interesting things to learn about, and I think taking advantage of that will help future members get even more out of working in the herbarium.

Rebekah Buczynski works with the New Jersey Department of Environmental Protection’s Office of Natural Lands Management, the Natural Heritage Program, and Raritan Valley Community College, researching New Jersey’s rare and endangered plants and studying the state’s forest ecology.

**On the value of the herbarium:**
Working in the herbarium opened avenues of communication with professionals working in the fields that interested me the most such as mycology and botany. I now have the honor of working in the same office as NJ State Botanist David Snyder, who I was fortunate enough to have met in the Chrysler Herbarium during my work there.

**On her Rutgers mentor:**
I was very lucky to have been enrolled in SEBS when I was. There were many professors, graduate students, alumni, and fellow classmates that I looked to for support and who I felt all had my back during my time at Rutgers. Several were closely involved with the Herbarium Army (and one even started it—thank you Dr. Struwe!). I consider all these people my mentors, regardless of traditional academic hierarchy.

**On next steps:**
I hope to continue studying and stewarding plants and their natural communities in New Jersey. There are constant ecological threats in our state that need strong teams of scientists addressing them.

**Her message for the Herbarium Army:**
Pursue what interests you, do work that makes you proud, and never forget your comrades; they are the reason for your success.
Pay it forward

The Cook Community Alumni Association puts philanthropy at the center of its mission.

Rutgers alumni make up a worldwide network that’s 500,000 strong, and there are countless ways to reconnect with friends, show Scarlet pride, and maintain ties to the campus. Not only are all Rutgers alumni automatically enrolled in the Rutgers University Alumni Association once they graduate, but a number of chartered organizations provide graduates with specialized alumni groups focused on a variety of interest areas.

The Cook Community Alumni Association is one such group, and a place where College of Agriculture, College of Agriculture and Environmental Sciences, Cook College, and SEBS graduates can reconnect. But it’s also a place where members can leverage their collective resources to give back to the campus they called home. “Philanthropy is built into our constitution and bylaws, but it’s also just part of the culture at Cook,” says association president Amanda Dougherty CC’08, GSE’09. “We try to exemplify this supportive culture through our association and vision.”

Supporting current SEBS students is one significant way the association gives back to its alma mater. Specifically, the association was able to found the Cook Community Alumni Association Endowed Scholarships. These are awarded primarily based on academic merit, but in the spirit of the association, preference is given to students who demonstrate a commitment to community service.

The association also maintains a strong and supportive bond with current students by earmarking money in the budget for student groups in need of funding. “They can ask for anywhere from $100 to $1,000 to support a program that’s beneficial to the community or connected to alumni in some way,” explains Dougherty. So, for example, the association recently funded an ice cream truck for Party At the Puddle, an annual Passion Puddle event that kicks off the fall semester.

In addition to students, Rutgers Gardens is another area of focus for the Cook Community Alumni Association. “We have a tradition of supporting Rutgers Gardens because it is not only physically close to Cook, but it also supports everything the campus is about: student learning, faculty research, and extension programs for the community,” Dougherty says.

The association has raised funds for the Gardens’ internship program, improvement project, and arts programs, in addition to the development of Cook’s Market. Though Rutgers Gardens has been home to a farm market since 2008, Cook’s Market provides a year-round venue with green roof. Cook’s Market protects vendors and shoppers from unpredictable weather conditions and the elements throughout the year. It also attracts more local visitors to the Gardens, since it is visible from the road. This was an appealing project for the Cook Community Alumni Association because it was not only a sustainable idea, but it was one that helps provide ongoing income to the Gardens.

“We don’t see it as giving back,” says Dougherty. “We see it as paying it forward. That’s the goal. We’re paying it forward to students today so that when they graduate and become alumni, they’ll be motivated to do the same.”
“Philanthropy is built into our constitution and bylaws, but it’s also just part of the culture at Cook,” says association president Amanda Dougherty CC’08, GSE’09. “We try to exemplify this supportive culture through our association and vision.”

For more information regarding how you can support the School of Environmental and Biological Sciences, contact Melissa McKillip, associate dean of philanthropy and strategic partnerships, at melissa.mckillip@rutgers.edu or 848-932-4214.
The Rutgers University Alumni Association welcomes news about your professional accomplishments and personal milestones. Submit your information at ralumni.com/mynews on the web, send it to your class correspondent listed in the Class Notes section of Rutgers Magazine, or drop a note via postal mail (Rutgers Alumni Communications, Rutgers, The State University of New Jersey, 7 College Avenue, New Brunswick, NJ 08901-1280). Ag, CAES, Cook, and SEBS news will be posted and indexed at alumni.sebs.rutgers.edu.

Richard Snethen AG'43, and seven members of his family, attended the Class of 1943’s 75th Anniversary Reunion. (Brian Clemson CC’87, Rutgers Landscape Architect; and Frank Wong CC'83, SPAA'07, Rutgers Assistant VP for Planning and Development, were welcomed at the lunch.) Stan Ross AG'43 drives and is enjoying life. Ed Simon AG'43 turned 98 in January. His hearing is very bad due to a World War II explosion, but otherwise he is OK. Class correspondent: William Suter AG’43 (billsuter1319@icloud.com).

Saturday, April 27 was a big day for the Class of 1944—it was our 75th reunion! Who was there to represent us? Irvin Baker AG’44! I think he holds the record for the number of reunions attended. Irvin attended the barbecue on Old Queens campus. He met one member of the Class of 1945 and two members of the Class of 1949. He also got to talk with several members of the Class of 1969. The weather could have been better, but they had a good time. Irv also had a nice discussion with the grandson of the late baseball coach, Fred Hill. John Pino AG’44, GSNB’51 had watched the funeral of former President George H.W. Bush and was reminded of his class’s past. They lived through the same period and most went on to have distinguished careers. Class correspondent: Doug McCabe RC’44 (973-226-3955).

Otto Bytof AG’48 passed away in August 2018. Peter F. Martens, Jr. AG’48 of Dayton, VA passed away on July 5, 2019 at age 96. He served in the U.S. Coast Guard and Navy during World War II, attaining the rank of Lt. (jg), U.S.N.R. He graduated cum laude from the College of Agriculture, Rutgers University in 1948. He retired in 1978 as professor emeritus from the faculty of Rutgers after 30 years of service with its Cooperative Extension Service as a county 4-H agent and educator. Class correspondent: Bart Klion RC’48 (bbklion@aol.com).

Jack Sacalis AG’53, GSNB’72 worked in the family florist business until 1969. He then returned to Rutgers to work.

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**School Abbreviations**

- **AG** College of Agriculture
- **CC** Cook College
- **CCAS** Camden College of Arts and Sciences
- **CLAW** School of Law—Camden
- **DC** Douglass College
- **ED** School of Education
- **EJB** Edward J. Bloustein School of Planning and Public Policy
- **ENG** School of Engineering
- **GSAPP** Graduate School of Applied and Professional Psychology
- **GSC** Graduate School—Camden
- **GSE** Graduate School of Education
- **GSM** Graduate School of Management
- **GSN** Graduate School—Newark
- **GSNB** Graduate School—New Brunswick
- **LC** Livingston College
- **MGSA** Mason Gross School of the Arts
- **NCAS** Newark College of Arts and Sciences
- **NLAW** School of Law—Newark
- **NUR** College of Nursing
- **PHARM** Ernest Mario School of Pharmacy
- **QC** Queen’s College
- **RBS** Rutgers Business School—Newark and New Brunswick
- **RC** Rutgers College
- **RWJMS** Robert Wood Johnson Medical School
- **SAS** School of Arts and Sciences
- **SB** School of Business
- **SBC** School of Business—Camden
- **SC&I** School of Communication and Information
- **SCILS** School of Communication, Information and Library Studies
- **SCI** School of Criminal Justice
- **SEBS** School of Environmental and Biological Sciences
- **SMLR** School of Management and Labor Relations
- **SNC** School of Nursing—Camden
- **SPAA** School of Public Affairs and Administration
- **SPA** School of Public Health
- **SSW** School of Social Work
- **UCC** University College—Camden
- **UCJC** University College at Jersey City
- **UCN** University College—Newark
- **UCNB** University College—New Brunswick
- **UCP** University College at Paterson
pursue a doctorate in plant physiology and remained on the Cook campus as a faculty member, teaching and doing research. He retired as professor emeritus in 2010. Jack lives with his wife, Anna, at Hunterdon Creek Community in Flemington, NJ, pursuing his longtime passion, watercolor painting. Class correspondent: Bill Sansalone AG’53, GSNB’61 (ws31@verizon.net).

Herb Dunmeyer AG’54 writes from Palo Alto, CA, that he was sorry he could not attend the 65th reunion. But he did send some memorabilia, including our Freshman Handbook from 1954, which brings back many happy memories. Warren Cryder Stiles AG’54, GSNB’55 of Dias Creek, NJ, died on July 28, 2019. He received his doctoral degree in 1958 from Penn State University. He served as assistant professor of pomology at Rutgers University from 1958 to 1963. He also taught at the University of Maine and Cornell. Class correspondent: Herb Hersh RC’54 (12 Whitehall Rd., Monroe Township, NJ 08831; 732-599-2196; herbhat@gmail.com).

Gordon Jewett AG’55, living in Cincinnati, OH, recently visited all four of his children and their families who live west of the Mississippi. He’s maintaining good health and staying active in his church and community. As of December 2018, the Class of 1955 Endowed Scholarship had reached a market balance of about $240,000—a worthy sum. The scholarship is assisting three students—enough to cover their tuition, books, and meals as a Fiji at 78 Easton Avenue (me too, Jon)! Class correspondent: Adrian Zapotocky ED’63 (abzap@verizon.net).

Those who attended the Class of 1959 60th Reunion include: Dave Blanch AG’59, Nick Borrello AG’59, and Morris Fabian AG’59, GSNB’61, GSE’76. Donald Block AG’59 of Leesburg, FL, died in July 2016. Class correspondent: Alan Schreihofer RC’59 (aschreihofer@bellsouth.net).

Dick Pellek CC’60 and his wife of 51 years continue their travels, which included a week in South Korea. It was the 107th country and territory they have visited. He recently published A to Z Word Potpourri: Chronicles of a Footloose Forester (AuthorHouse, 2019), his fourth book of essays, stories, adventures, and dreams. Class correspondent: Tom Siegel RC’61 (3739 Waldorf Drive, Dallas, TX 75229; 214-351-1009; tomsiegel@alumni.rutgers.edu).

Phillip Gordon AG’63, GSN’75 is still a fencer, even though 59 years have gone by since his fencing days “on the banks of the old Raritan.” He wears Rutgers gear when he competes. Now that’s Rutgers pride! Class correspondent: Jon Rodiek AG’65 (jonrodiek@me.com, rickstier4@aol.com).

Jon Rodiek AG’65 related the importance of working together and how he truly enjoyed sharing lives, time, and meals as a Fiji at 78 Easton Avenue (me too, Jon)! Class correspondent: Chuck Hennings RC’65, (6079 Tarawood Drive, Orlando, FL 32819; 407-909-0507).

Alberta Hemsley AG’67 writes, “I was one of four women in the College of Agriculture and Environmental Science. My master of science degree was at Southern Connecticut State College and I did coursework at the University of Oregon, Xavier University, and the University of Cincinnati. I have been teaching science for over 50 years with seven years abroad in the Philippines with the Peace Corps, and in Finland, the Netherlands, Germany, and Venezuela. I retired from the Cincinnati Public Schools, mostly teaching chemistry. Music has always been part of my life, including with the Rutgers Chorus, the Bach Society in Germany, the May Festival Chorus in Cincinnati, and 25 years playing the euphonium with the Sycamore Community Band in Cincinnati. I helped form the Greater Cincinnati Democrats. For over 10 years, I had my son works for Microsoft and my daughter is a director of restorative practices for the National Conflict Resolution Center.” Class correspondent: Mike Moran RC’67 (revmoran@gmail.com).

Eric Nielsen AG’73 met with a number of Rutgers Crew members from the classes of 1971 to 1976 in Sarasota, FL, to attend the World Rowing Championships in spring 2018. Former Rutgers freshman coach, Buzz Congram, also attended, and there was a reception hosted by Paul Hogan. Edward Sharj Jr. AG’73 is a member of the Portland, CT, Board of Selectmen and of the Greater Hartford, CT Board of Realtors. He retired as president of Tri-Town Foods. Class correspondent: Bob Cancro RC’73, GSE’78 (scarknight@aol.com).

Bob Glennon CC’74 is a private lands biologist in southeastern Virginia after a 30-year career with the US Department of Agriculture and the US Fish and Wildlife Service. Dave Gombas CC’75 and his wife, Kathy, celebrated their 25th wedding anniversary at Yosemite National Park. Among those in attendance were Seth Goldsmith CC’74 and myself. I have been working as a coeditor of Food Quality and Safety magazine based in Hoboken, NJ. Interesting work that allows me to get up on a soapbox every once in a while. Class correspondent: Rick Stier AG’74 (rickstier4@aol.com).

Donald Heilman CC’76, GSED’07, ’12 received the George Hammell Cook
Distinguished Alumni Award from the Cook Community Alumni Association at the annual awards ceremony on October 20, 2019.

Joseph Charette CC’77 received the George Hammell Cook Distinguished Alumni Award from the Cook Community Alumni Association at the annual awards ceremony on October 20, 2019.

Lewis Kleinhans CC’82 is a consulting exploration geologist who leads float trips through the Grand Canyon. Class correspondent: Norm Schleiffer RC’82 (168 Longwood Drive, Manalapan, NJ 07726; 732-792-0215; schleiff@alumni.rutgers.edu).

Kip Koelsch CC’88 recently released his latest novel, Delphys Rising, a speculative fiction thriller that was included in IndieReader’s “Best Reviewed Books” for the month of May 2019. It was also named a finalista in the Florida Authors and Publishers Association 2019 President’s Book Awards. Class correspondent: Valerie (Record) Delaney RC’88 (vdelaney@optonline.net).

Vincent Caputo CC’89, GSNB’96 marks his eighth year as superintendent of schools in Metuchen, NJ, and his 29th year in education. Class correspondent: John Fagan RC’89, GSNB’95 (johndfagan@verizon.net).

Ramona Huckstep CC’90 works for the Missouri Municipal League, assisting cities, towns, and villages on environmental issues. Scott L. Shapiro CC’90, an attorney with Downey Brand, was named as a 2018 Top Lawyer by Sacramento magazine. Class correspondent: Rob Bardsley RC’90 (856-952-0346; rob@alumni.rutgers.edu).

Christopher Erd CC’91 is an attorney with the firm Norris McLaughlin. Phil Wisneski CC’91 wrote “The Passion Puddle Reel,” an instrumental tribute to Passion Puddle on the George H. Cook campus. The song is a regular part of the repertoire of the Cook College Ramblers, comprising faculty and staff from the School of Environmental and Biological Sciences. Class correspondent: Thomas Roughneen RC’91 (thomas.roughneen@gmail.com).

Susan (Biegel) Carson CC’92 was recognized by the Cook Community Alumni Association with the George Hammell Cook Distinguished Alumni Award on October 20, 2019.

Jeffrey Klein CC’92, GSNB’96, ’99 is the director of toxicology and dermatology at Sinclair Research Center in Auxvasse, MO. Class correspondent: Colleen Kane Pangretic RC’92 (colleenpangretic@yahoo.com).

Linda Groff CC’93 works at IBM Watson Health.

Phil Cha CC’95, CLAW’99 was recently appointed to the partnership board of the international law firm Duane Morris LLP. Phil is situated in the firm’s Cherry Hill, NJ office and serves as a team lead for the Duane Morris Energy industry group.

Michael Wenk CC’95 is the author of Chemical Regulation in the Middle East (Wiley, 2018). Class correspondent: Richard Gawel RC’95 (5 Hilltop Trail, Denville, NJ 07834; 973-586-3060; richard.gawel@penton.com).

Gabriel Lerman CC’97 is program director of the Transitional Year Residency Program and director of Osteopathic Medical Education at Mercy Catholic Medical Center in Darby/Philadelphia, PA. Ben Trotter CC’97 was featured on ABC’s GMA Day in December 2018. While he was a student at Cook College, Ben signed up to be a bone marrow donor. Twenty years later, he was asked to donate his bone marrow, which cured a 12-year-old boy of sickle cell anemia, and the two met for the first time on the television show.

Jeff Heidelberg CC’00 is the manager of urban development services at Beals and Thomas, Inc. Class correspondent: Jon Horowitz RC’00, SCILS’00 (jon.horowitz@alumni.rutgers.edu).

Brian Prang CC’01 is an umpire for the Broward Baseball Umpires Association in Florida. Class correspondent: David Sheihan Hunter Lindez MGSA’01 (sheihan@icloud.com).

Alessandra De Cicio CC’02 completed a chef training program at the Natural Gourmet Institute for Health and Culinary Arts. Class correspondent: Michele Bayer PHARM’02 (michele-bayer@yahoo.com).

Lana Ros CC’03, with the law firm, Norris McLaughlin & Marcus, is legal counsel to the Medical Society of the County of Queens.

Lisa Makarewicz-Prang CC’04 teaches fifth grade at Tradewinds Elementary School in Coconut Creek, FL. Class correspondent: Melissa Wyse RC’04 (melissawy23@yahoo.com).

Jamie O’Regan CC’05 is president of the Rutgers Club of New York City.

Danny Phan CC’05 is a foot and ankle surgeon in Metuchen, NJ. He is on the national board of the Institute for Podiatric Excellence and Development. Class correspondent: Amy Weiss RC’05 (amyweiss23@yahoo.com).

Christina Gordillo Farrell SEBS’09 married Ryan Farrell SEBS’09 in 2015.

Curtis McKittrick SEBS’13, SPA’18 is a field and soils analyst at Snyder Farm in Pittstown, NJ.

Victoria Catena SEBS’14 and Kevin Taddei SAS’14 are engaged to be married. The couple met at Rutgers.

Eileen Rudio SEBS’16 is studying for a master’s degree in biotechnology at Johns Hopkins University’s Krieger School of Arts and Sciences.
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