THE RUTGERS SCHOOL OF ENVIRONMENTAL AND BIOLOGICAL SCIENCES IS LOCATED ON THE BUCOLIC GEORGE H. COOK CAMPUS IN THE CITY OF NEW BRUNSWICK, NEW JERSEY. THE SCHOOL IS THE ACADEMIC HOME OF CLOSE TO 3,500 STUDENTS WHO BENEFIT FROM THE INTIMACY OF A SMALL COLLEGE SETTING WITHIN THE CONTEXT OF A LARGE, COMPREHENSIVE PUBLIC RESEARCH UNIVERSITY.
Robert M. Goodman  
Executive Dean,  
School of Environmental and Biological Sciences

Welcome to this inaugural “Year in Review” publication celebrating the Rutgers School of Environmental and Biological Sciences, which has a long and rich history with deep roots in science-based agricultural education.

Today, reflecting the vast potential of scholarship in the environmental and biological sciences, the school has evolved into an integrated center of teaching and research that covers “organisms to ecosystems.”

In fall 2010, we enrolled 3,496 undergraduate students, our largest enrollment ever! My goal is to grow the school to 4,000 through strategic recruitment, here and abroad, and enhanced course offerings that enrich the student learning experience.

From the moment they step on campus, our first-year students are exposed to fascinating experiences like the Byrne Family seminars, taught by senior professors in small discussion settings designed to give purpose to our students’ natural passion and creativity.

I’ve been thrilled to learn just how strongly international are the expertise and commitment of our faculty. Coupled with the increasing presence of international students on our campus and the growing options for study abroad, students who grow up in New Jersey as well as those who choose to come to Rutgers from states across the U.S. are gaining a truly global education.

Recent faculty hires, noted for their interdisciplinary approach to teaching and research, are helping to change the culture of scholarship on our campus. As our faculty incorporate more global dimensions of course syllabi and service learning opportunities beyond the classroom, our students benefit from a vastly expanded and enriched college experience.

A journey of discovery awaits you at our school!
Formal classroom instruction as well as informal interactions outside the classroom among students, staff, and faculty help to build a sense of campus community and enhance the educational experience for students. Residential and commuter students are supported by a range of resources designed to keep them engaged and make the campus a vibrant place to live and study.

**COMMUNITY DAY**

The fall semester on the George H. Cook Campus begins with a celebration to mark the new academic year. The annual Community Day, held in mid-September, typically attracts over a thousand students, faculty, and staff. Scores of organizations entice students, with multiple giveaways, to stop by display tables featuring materials on a range of academic, administrative, and student volunteer services offered on the New Brunswick campus. Students come together to enjoy live music, learn how to become involved in organized campus activities, and share a barbecue under the tent on Skelley Field.

**CLUBS AND ORGANIZATIONS**

Students have access to over 400 clubs and organizations, ranging from campus-specific or university-wide student government organizations to social action, religious, academic, community service, and special interest organizations. From the chapter of Alpha Zeta, the national honor and service fraternity founded in 1897 to promote fellowship among students at colleges of agriculture to the Rutgers University Seeing Eye Puppy Raising Club that raises puppies for the visually-impaired, students are bound to find a club or organization that’s right for them.

**MONSTER MASH**

Once a year, the Cook/Douglass Recreation Center is inhabited by ghouls, ghosts, and things that go bump in the night as the campus plays host to hundreds of children and their parents at the annual Monster Mash. The event, sponsored by the Cook/Douglass Residence Life office and organized by student club volunteers, allows children from the surrounding New Brunswick neighborhoods to experience an alternative Halloween, trick-or-treating in a safe and secure setting.
Richard L. McCormick  
President, Rutgers, The State University of New Jersey

The School of Environmental and Biological Sciences is proud to be the academic home of the only accredited program for landscape architecture in New Jersey. This exciting major, which added a Master's degree component this year, plus dozens of other degree and certificate programs are part of an integrated and dynamic learning environment.

I invite you to visit and learn more about this historic school.
Strategic faculty hires strengthen our mission of teaching, research, and outreach, and mark our commitment to engage students in a breadth of academic pursuits that ignite their curiosity and position them to meet the challenges of the 21st century. Our goal is to prepare students for employment and citizenship in an increasingly complex and interdependent planet.

DEBASHISH BHATTACHARYA The breathtaking diversity of life inspires the cutting-edge research done in the Bhattacharya lab. Led by this respected evolutionary biologist, the lab employs the powerful toolkit of modern bioinformatics and genomics to seek answers at the genomic level to important scientific questions. Can we build a better algal biofuel source? What causes “red tides” in the ocean? How did plants and algae become photosynthetic? Can we reconstruct Darwin’s tree of life using genomes? What will the analysis of single cell genomes reveal about the origins and maintenance of biodiversity?

LAURA LAWSON A professor and chair in the Department of Landscape Architecture, Lawson is a passionate advocate of user-initiated public landscapes. Her research on historical and contemporary community open space focuses particularly on community gardens and the changing roles of parks in low-income neighborhoods. Her seminal work, *City Bountiful: A Century of Community Gardening in America*, followed by *Greening Cities, Growing Communities: Urban Community Gardens in Seattle*, reflect her scholarly interest. Lawson joins the faculty at the school, eager to engage in interdisciplinary collaborations around community food security, community gardening, and urban agriculture.

PETER GILLIES After a distinguished career in the private sector, Gillies joined Rutgers as a professor in the Department of Nutritional Sciences and the founding director of the New Jersey Institute for Food, Nutrition, and Health. His research and development experience in cardiovascular drug discovery, functional foods, dietary supplements, and molecular nutrition are crucial to the university’s new strategic initiative in nutrition and health. Gillies’ extensive research focuses on the cardioprotective effects of omega-3 fatty acids in humans.

INVESTMENT IN STRATEGIC FACULTY HIRING STRENGTHENS OUR MISSION OF TEACHING, RESEARCH, AND OUTREACH, AND DEMONSTRATES OUR COMMITMENT TO ENGAGE STUDENTS IN ACADEMIC PURSUITS THAT IGnite THEIR CURIosITY AND POSITION THEM TO MEET THE CHALLENGES OF THE 21ST CENTURY. OUR GOAL IS TO PREPARE STUDENTS FOR EMPLOYMENT AND CITIZENSHIP IN AN INCREASINGLY COMPLEX WORLD.
A warm welcome to the Rutgers School of Environmental and Biological Sciences.

Our bucolic campus in New Brunswick is the academic home of close to 3,500 students who benefit from the intimacy of a “small college” experience within the context of a large, comprehensive public research university like Rutgers. The school is firmly rooted in the historic land-grant mission of creating and applying knowledge with a public purpose, and provides complementary support to help guide students in their decisions regarding education, career, and life goals.

An excellent faculty-to-student ratio, focus on an enriching academic environment for entering students, and a graduation requirement of hands-on, experienced-based learning are only three of the many distinguishing features of our school. Students have access to 25 undergraduate and 12 graduate programs of study in biological, natural resource, environmental, and applied social science disciplines that span the spectrum from molecules and organisms to ecosystems and social systems.

New initiatives to provide global educational experiences for a larger percentage of our student body are among the many exciting developments at the school. A complete revisioning of our agricultural science major, focusing on innovation, entrepreneurship, and sustainable food systems, is underway. A master’s program in landscape architecture began in fall 2010.

Our most popular majors—biology, animal science, nutrition, exercise science, and biotechnology—continue to grow. Through the extraordinary efforts of our faculty and staff, all of our majors enjoy remarkable success in professional placements of their graduates.

We invite you to take a closer look at the School of Environmental and Biological Sciences. We’re confident that you’ll like what you see.
World-class faculty at the school bring tremendous ingenuity and energy to their teaching, helping to stimulate young minds and influencing the lives and careers of generations of bright, engaged students.

SCOTT GLENN
In December 2009, school children in Baiona, Spain, gave RU-27 a rock-star welcome at the completion of the glider’s historic trans-Atlantic crossing. This success and an award-winning documentary of the voyage brought unprecedented attention to marine biology professor Scott Glenn. Leading the team of faculty and staff scientists and dozens of undergraduates who helped to navigate the longest underwater flight of an unmanned vehicle, Glenn’s passion and commitment to student learning earned him the coveted CASE 2010 New Jersey Professor of the Year award.

JACK RABIN
"Priceless!" is how one student describes his experiences in Jack Rabin’s undergraduate farm internship program, which affords students unique, hands-on instruction about food production. Rabin, who oversees outreach programs at five of the university’s outlying research farms, gets students out into fields, learning side-by-side with renowned Rutgers professors and successful New Jersey farmers. Students critically dissect important topics around food production, and in the process, find their own passion for discovery and a sense of their place in the world.

BARBARA ZILINKSAS
Rutgers’ undergraduate biotechnology curriculum is 21 years old, but emerging technologies constantly change the landscape of this field. In May, the program graduated the first of three cohorts of Biotechnology Scholars. These students receive annual $5,000 Scholarships for Science, Technology, Engineering, and Mathematics (S-STEM) for Biotechnology through a National Science Foundation grant won by professor Barbara Zilinskas, who coordinates the program. Zilinskas enriches the S-STEM curriculum with special seminars and a 10-week summer research internship guided by faculty mentors.

WORLD CLASS FACULTY AT THE SCHOOL OF ENVIRONMENTAL AND BIOLOGICAL SCIENCES BRING TREMENDOUS INGENUITY AND ENERGY TO THEIR TEACHING, IN AND OUT OF THE CLASSROOM, HELPING TO STIMULATE YOUNG MINDS AND INFLUENCING THE LIVES AND CAREERS OF GENERATIONS OF BRIGHT, ENGAGED STUDENTS WHO ARE DESTINED TO BECOME TOMORROW’S LEADERS.
One hundred forty-seven years of learning and the accomplishments of our graduates underscore the continuing impact of our school on the nation and the world. The mission of community engagement at the school is to share the news of the important work of our alumni, faculty, and students with the public at large and within the Rutgers community.

**CAMPUS CONNECTIONS** Alumni pass on the legacy of a Rutgers education through their occupations, their service to their communities, and their pastimes. Learned microbiologists, environmentalists, plant scientists, pharmaceutical researchers, physicians, veterinarians, oceanographers, entomologists, economists, farmers, food scientists, lawyers, educators, writers, accountants, corporate executives—the list goes on—with a connection to the George H. Cook Campus, improve life for those around them. We welcome their varied and continued connections to our school.

**ALUMNI & PARENTS** The school proudly celebrates its graduates through the Rutgers University Alumni Association and the Cook Community Alumni Association charter group, both of which stay connected through newsletters, events, and programs. The Rutgers Parents Association, with especially strong ties to the school, enjoys the support of mothers and fathers of students who are currently enrolled. Even parents whose sons and daughters have graduated remain a committed and valued part of our community.

**DISCOVERY INITIATIVE** These interwoven relationships are supported and encouraged by the school’s Office of Community Engagement, as it brings together individuals and organizations whose interests align with the school and the university in a program called “The Discovery Initiative.” As a unit of the Office of the Executive Dean, Community Engagement creates and assists in scores of programs each year and invites all who wish to discover the excellent work of our faculty and students to take part in our events. Visit discovery.rutgers.edu.
The Office of International Programs connects undergraduate students with opportunities to broaden their horizons in a variety of ways. Advancing beyond the classroom, they apply their Rutgers education globally, returning with rich, rewarding experiences that are as relevant as they are transformative.

International Summer Scholarships

These awards provide an alternative to semester-long study for students limited by structured science curricula and funding. For the past three years, International Programs has matched funding by the Office of Academic Programs, awarding scholarships to 31 undergraduates to enhance their experience of the world beyond our national borders. In the summers of 2009–2011, these students studied, conducted research, participated in internships, and served local communities around the world, including Africa, the Americas, and Europe.

Science Education Abroad

An increasing number of opportunities exist for students to experience real-world applications of scientific concepts. Made possible by the International Curriculum Initiative 2009–2010, faculty from the school developed courses and learning opportunities engaging the interest and imagination of students. These opportunities include the microbiology of cheese and wine in France, landscape architecture in Japan, medical service in Mexico, meteorology in the UK, nutritional health in Brazil, global marketing of agriculture in Sri Lanka, and local crops in Asia.

2+2 Dual Degree Programs

A novel articulation agreement enables bright students from partner institutions in China to earn degrees from Rutgers as well as their own home university. The agreement requires students to take foundational courses at Shanghai Jiaotong University or South China University of Technology, followed by upper level courses at the school. So far, dual degree programs are offered in environmental sciences, plant science, and most recently, food science. The cohort of applicants to the 2+2 program doubled in the second year.
Through research grants and government, corporate, and foundation support, our faculty, students, and staff drive a rigorous and innovative research portfolio. Spanning interdisciplinary fields such as agriculture, biological sciences, environmental sciences, health, nutrition, and climate change, we serve local communities and beyond, offering promise of a healthier population, a cleaner environment, and more robust economic development.

**Healthy lifestyles**

Plant science professor Thomas Gianfagna and his students are investigating the chemicals found in extracts of edible lily, *Lilium longiflorum*. These extracts reduce blood glucose and body weight in mice on high-fat diets. This research could lead to the development of functional foods or nutritional supplements for human consumption to prevent the onset of metabolic syndrome and diabetes, triggered by obesity. Animal science professor Andre Pietrzykowski focuses his research on genetic predisposition for alcoholism. Understanding the role of certain genes may allow our scientists to identify susceptible individuals and prevent them from becoming addicted.

**Cleaner waterways**

New Jersey’s waterways are good indicators of the state of our environment and our food systems. Take oysters for example. Research sponsored by the NY/NJ Baykeeper and Hackensack Riverkeeper will eventually lead to the reintroduction of the Eastern Oyster to the Hudson-Raritan Estuary. Environmental science professors Beth Ravit and Christopher Obropta, landscape architecture professor Wolfram Hoefer, as well as their students, work in partnership with non-governmental organizations to improve habitats throughout the freshwater Bergen County Park system and to create urban design solutions for cities along the Passaic River.

**Healing plants**

Plant biology professor Nick Vorsa and his research team isolate and evaluate compounds from cranberries that cure urinary tract infections, with the aim of breeding varieties with additional health benefits. The flora and fauna of our planet provide the basis for at least 50 percent of all pharmaceuticals. Rutgers plant biology professors Ilya Raskin, Jim Simon, and colleagues travel far beyond the U.S. borders to exotic locales in search of novel plants, whose health-promoting compounds show promise for new medicines.
Over the past year, Rutgers announced the public launch of its historic $1 billion fundraising campaign, “Our Rutgers, Our Future,” to ensure the university’s place among the world’s top institutions. As part of this campaign, the school has set its own ambitious goal of raising $92 million with the strong support of alumni, faculty, friends, and partners in industry.

BUILDING NEW LEARNING AND RESEARCH ENVIRONMENTS

The New Jersey Institute for Food, Nutrition, and Health is much more than a new research facility to be built on the George H. Cook Campus; it is an organizational enterprise that brings faculty and staff together from across the university, to work on large, multidisciplinary research projects. The design of the new building includes research, community, and administrative space, all housed within what is proposed as Rutgers’ most sustainable, planned facility.

INCREASING SCHOLARSHIPS AND STUDENT SUPPORT

As a public university with a proud tradition of educational opportunity, Rutgers is committed to making higher education accessible to students from all socio-economic backgrounds. Undergraduate scholarships and graduate fellowship support are key to achieving this goal. Robust efforts are underway at the school to double its scholarship endowment. The Dennis and Linda Fenton and James Macmillan Endowed Graduate Fellowship in Microbiology as well as the Barry and Deborah Venezia Adler International Study Scholarship are two examples of new scholarships and fellowships established this year.

FACULTY AND RESEARCH

More than 225 teachers and researchers, many with national and international reputations, form a diverse and dynamic faculty at the school. Through inspired teaching and meaningful research, our faculty members leverage those efforts to spark the student experience of discovery. A $950,000 grant from the Alfred P. Sloan Foundation allowed the Institute of Marine and Coastal Sciences to develop a priceless database of the diverse and abundant life in our oceans. Research on the wellbeing of horses was boosted by gifts of $100,000 each by Sandy Denarski and animal science professor Karyn Malinowski. The Rutgers Gardens continues to grow, thanks in part to more than $75,000 in gifts this year.
During the past year, more than 2,500 donors invested generously in our students and faculty, as well as the outstanding research, community service, and outreach of the school and the New Jersey Agricultural Experiment Station. A mere thank you cannot properly express our gratitude for their commitment to supporting the impressive work happening here on our campus, across the state, and around the globe.

### Donors

#### $100,000 AND UP
- Dennis and Linda Fenton
- Alfred P. Sloan Foundation
- Robert Wood Johnson Foundation
- The Nicholson Foundation
- Syngenta Crop Protection
- Donald Agthe
- E.J. Dubuc de Nemours & Co., Inc.
- Johnson and Johnson
- Gibson Family Foundation
- Valent BioSciences Corporation
- Bill and Melinda Gates Foundation
- Bayer Crop Science LP
- Bush Flansm
- Leah Veri

$50,000 - $99,999
- Geraldine R. Dodge Foundation, Inc.
- American Heart Association
- Ara Parseghian Medical Research Foundation
- Bernard G. Steinetz
- Hudson River Foundation
- Alfred Wegener Institute for Polar and Marine Research

$25,000 - $49,999
- Eleanor Dunnning
- Annie Moreau Thomas
- Phyllis Katz Greenberg
- Nelson Doland Jr.
- Farm-Rite, Inc.
- Steven and Joan Handel
- Bayer Environmental Science
- The New York Farmers
- Valent U.S.A. Corporation
- Plangrove Foundation, Inc.
- Chemizu Corporation
- Austin T. Fragomen
- Alexander and Lorena Kulpacz
- Marrus Family Foundation, Inc.

$10,000 - $24,999
- Clarice Mosquito Control Products, Inc.
- David S. Blanch
- Peter and Jennifer Kahn
- Barry and Debrah Venezia Adler
- Tyco International (135), Inc.
- Valero Energy Foundation
- Audrey C. Burkart
- Herbaulp & Alchemist, Inc.

$5,000 - $9,999
- J. Fanok Services, Inc.
- Ammac Chemical Corporation
- The Cranberry Institute
- World Cocoa Foundation
- Violet Packaging LLC
- BionWorks, Inc.
- Eva Lindauer Pell

### Thanks to Our Campus Partners

- Exigent LLC
- Samuel and Irene Goldfarb
- The McRane Foundation
- C. Reed Funk
- Dow Agrosciences LLC
- OHP, Inc.
- New Jersey Committee of the Garden Club of America
- Gardeners of Somerset Valley, Inc.
- Bruce and Ellen Hamilton
- Floyd and Helen Rugg
- Frederick J. Goff
- Allen and Scott Off Scholarship Fund
- Williams and Barbara Bauer
- Bedoukian Research, Inc.
- Cipriano Landscape Design
- Robert and Carol Clark
- Elizabeth and Stephen Dey II
- John C. Feldkamp
- GCASAN Foundation
- Charles E. Hess
- Standardbred Breeders & Owners Association of New Jersey
- The Columbus Foundation
- Pam Arena Weidel
- Michael J. Graziano
- Kyle R. Barbbehren
- Clement Pappas & Co., Inc.
- Fair Winds Farm, Inc.
- Erwin Emil Harbat
- Johnson & Johnson Finance Corporation
- Antoinette Nigito
- Glenn and Lynn Noland
- James J. O’Brien
- Sharon L. Rosen
- United Phosphorus, Inc.
The Rutgers School of Environmental and Biological Sciences has undergone several enriching transformations since its beginnings in 1864 as the Rutgers Scientific School. However, what has not changed in the almost 150 years since, is our school’s commitment to generating and applying knowledge on a wide range of issues that are of global relevance.

Robert M. Goodman, Executive Dean
Agriculture and Natural Resources
School of Environmental and Biological Sciences
goodman@aesop.rutgers.edu

Gail Alexander, Chief of Staff
Office of the Executive Dean
alexander@aesop.rutgers.edu

Paul Elwood, Associate Dean
Academic Personnel, Office of Human Resources
elwood@aesop.rutgers.edu

Lisa Esler, Associate Dean
Planning and Budgets
esler@aesop.rutgers.edu

Barry W. Jesse, Associate Dean
Academic Administration and Assessment
jesse@aesop.rutgers.edu

Jerome J. Kukor, Dean
Academic Programs
kukor@aesop.rutgers.edu

Richard D. Ludescher, Campus Dean
George H. Cook Campus
ludescher@aesop.rutgers.edu

Xenia K. Morin, Associate Dean
Director of Sponsored Programs, Office of Grants Facilitation
xmorin@aesop.rutgers.edu

Mark C. Robson, Dean
Agricultural and Urban Programs
robson@aesop.rutgers.edu

Kelly L. Watts, Associate Dean
Director of Development
watts@aesop.rutgers.edu

Lily Y. Young, Dean
International Programs
lyoung@aesop.rutgers.edu

Contact

The Rutgers School of Environmental and Biological Sciences has undergone several enriching transformations since its beginnings in 1864 as the Rutgers Scientific School. However, what has not changed in the almost 150 years since, is our school’s commitment to generating and applying knowledge on a wide range of issues that are of global relevance.
Acknowledgments:

This publication was designed and produced by the Rutgers Office of the Executive Dean of the School of Environmental and Biological Sciences and the Office of Communications; Michael Green, director.

Photo credits:
Cover: (large photo) Don Hammerman (photos counter clockwise from top) Jerry Casciano, Nick Romanenko;
Table of contents: Nick Romanenko; Page 1: Jerry Casciano;
Page 2: Nick Romanenko; Page 3: Jerry Casciano;
Page 4: (top) Jerry Casciano, (bottom) Nick Romanenko;
Page 5: Nick Romanenko; Page 6: (top) Nick Romanenko, (bottom) Don Hammerman; Page 7: Jerry Casciano;
Page 8: (top) Susanne Ruemmele, (bottom) Nick Romanenko;
Page 9: Roy Groething; Page 10–11, Nick Romanenko;
Page 12: (top) Don Hammerman, (bottom) Nick Romanenko;
Page 13: Nick Romanenko; Page 14: (top) Patty Kastner, (bottom) Nick Romanenko; Page 15: Nick Romanenko;
Page 16: (top) Courtesy of the Office of International Programs, (bottom) Kelvin Turner; Page 17: David Tulloch;
Page 18–20: Nick Romanenko; Page 21: Jerry Casciano;
Page 22: (top) Michelle Baffuto, (bottom) Nick Romanenko;
Page 23: Courtesy of Woods Bagot; Page 24–25: Nick Romanenko;
Back Cover: Nick Romanenko.

Price per printed copy $1.16