Dear Friends,

It is my pleasure to share with you the 2014 Annual Report of the SUNY College of Environmental Science and Forestry. As the report reveals, it has been another spectacular year for ESF as its faculty, staff and students continue to achieve excellence in a wide range of educational, research, scholarship and outreach activities.

Our students excel in an amazing diversity of courses of study and define our campus community with their optimism, enthusiasm and sense of purpose to make the world better. When I learned that ESF was ranked second in its class among all colleges in the production of Peace Corps volunteers, I was only surprised we were not number one. And as I have met outstanding young women attending ESF, I understand why Forbes ranked us among the best in the nation for women majoring in science and engineering fields. Beyond academic accolades and awards, ESF students are incredibly generous and engaged, volunteering more than 73,000 hours to community service, from Syracuse to a remote village in the Andes and around the world. And they are establishing the Mighty Oaks sports teams as forces to be reckoned with, including a third consecutive national championship for our men’s cross-country team.

ESF faculty and staff continue to distinguish the College as a national leader in the environmental sciences and sustainability. From bioengineering the American chestnut from the brink of extinction to reintroducing Galapagos tortoises to an island where they had been hunted out of existence, conceiving a New Forest Economy for the 21st century, and designing a state-of-the-art biomass fuel research facility, ESF faculty continue to have major impacts advancing science and solving complex problems for society. While we prefer to measure our progress in successful students and impactful ideas, it is worth noting that, on a per capita basis, ESF faculty were among the top three SUNY campuses in externally funded research this year.

Our latest building, the Gateway Center, is a spectacular LEED-certified edifice that continues to receive architectural awards for its design and living roof, and we are making final plans for a new research and academic building on the western front of the campus. The ESF College Foundation has had a banner year, too, receiving the largest single gift in ESF history and fast approaching the successful completion of the Centennial capital campaign. I invite you to join me in celebrating the year’s accomplishments and congratulating our students, staff and faculty on a job truly well done.

Sincerely,

Quentin Wheeler, Ph.D.
ESF welcomed Dr. Quentin Wheeler as its fourth president in January 2014.

Wheeler, director of the International Institute for Species Exploration, came to ESF from Arizona State University where he was the Virginia M. Ullman Professor of Natural History and the Environment.

Wheeler took office in January after former President Cornelius B. Murphy, Jr., stepped down after leading the College for more than 13 years.

Wheeler’s vision for ESF involves a campus without borders educating and inspiring the public to understand and value the biodiversity around us and embracing sustainable alternatives for a better world, a diverse faculty and student body drawn from the brightest and most dedicated candidates, and a reputation as a trusted and open source of objective information regarding the environment, both natural and built.

Wheeler joined Arizona State University in 2006. He served as interim dean of the Division of Natural Sciences in 2006 and in 2007 was appointed to the position of vice president and dean of the College of Liberal Arts and Sciences, a position he held until 2011.

Wheeler previously served in distinguished academic roles for 24 years at Cornell University, where he earned the rank of tenured full professor. He was chair of entomology and director of the Liberty Hyde Bailey Hortorium while at Cornell.

Wheeler also previously served as Keeper and Head of Entomology at the Natural History Museum in London from 2004-2006 and was director of the Division of Environmental Biology at the National Science Foundation from 2001-2004.

His research career has focused on the role of species exploration and natural history collections in the exploration and conservation of biodiversity; theory and practice of phylogenetic systematics and cybertaxonomy; the evolution and classification of insects, especially beetles; and public science education.

He has received a number of academic honors, including several fellowships and has had three species named in his honor.

He is the author of approximately 150 scientific articles and six books, including What on Earth? - 100 of Our Planet’s Most Amazing New Species. He has named more than 100 new species and writes a weekly feature on new species for The Observer newspaper in London. Wheeler holds bachelor’s, master’s and Ph.D. degrees in entomology from The Ohio State University.

The ESF-based International Institute for Species Exploration, founded and directed by President Quentin Wheeler, announced the Top 10 New Species for 2014.

An international committee selected the Top 10 from among the approximately 18,000 new species named during the previous year. The list was released May 22, 2014, to coincide with the birthday, May 23, of Carolus Linnaeus, an 18th century Swedish botanist who is considered the father of modern taxonomy.

The annual list, established in 2008, calls attention to discoveries that are made even as species are going extinct faster than they are being identified.

Scientists believe 10 million species await discovery, five times the number that are already known to science.

Wheeler hopes the Top 10 draws attention to the urgent need, and real possibility, of completing an inventory of all of Earth’s species. News of the Top 10 was carried by major media outlets both in the United States and abroad.

The appealing olinguito, resembling a cross between a slinky cat and a wide-eyed teddy bear.

Even by snail standards, Zospeum tholussum moves slowly, creeping only a few millimeters or centimeters a week.
ESF Named One of Princeton Review’s ‘Best Value’ Colleges

ESF has again been named one of the nation’s 150 “Best Value” colleges and universities by The Princeton Review. The 2014 college guide describes ESF as “nationally renowned” and “highly specialized and selective,” and quotes ESF students who described the College as “dedicated to its mission of sustainability” and as an institution where professors “set the bar high for expectations and keep it there.”

The 150 “Best Value Colleges” were selected based on institutional data and student opinion surveys collected from 650 colleges and universities the company regards as the nation’s best undergraduate institutions. The selection process analyzed more than 30 data points broadly covering academics, cost and financial aid. Data from students attending the schools, collected from fall 2012 through fall 2013, included their assessments of professors and their satisfaction with financial aid awards. The list includes 75 public and 75 private schools.

ESF’s Landscape Architecture Program Nationally Ranked

The Department of Landscape Architecture at ESF is ranked among the nation’s top programs in that discipline. In rankings compiled by Design Intelligence, the undergraduate program at ESF was ranked 13th in the United States, and the third best program in the East, along with Penn State and Cornell University. ESF’s graduate program in landscape architecture was also ranked 13th nationally.

The magazine rankings were based on a survey of more than 300 professional landscape architecture firms asked to rank the strongest university programs.

ESF among Top Producers of Peace Corps Volunteers

In its rankings of the top volunteer-producing colleges and universities nationwide, the Peace Corps ranked ESF No. 2 among small schools. This is ESF’s first appearance on the annual Peace Corps’ Top Colleges list. In the past two years, the school has seen a 143 percent increase in undergraduate alumni volunteers, jumping from seven alumni volunteers in 2012 to 17 in 2013. ESF alumni currently serve as volunteers in Cameroon, Ethiopia, Fiji, Jamaica, Kenya, Liberia, Madagascar, Malawi, Mexico, Panama, Senegal, Sierra Leone and Zambia. They work in sectors including agriculture, education, English and health. Since the first days of the Peace Corps, 164 ESF alumni have traveled abroad to serve as volunteers.

Here are the rankings for small colleges and universities (fewer than 5,000 undergraduates), with the total number of volunteers: 1. Gonzaga University, 22; 2. SUNY College of Environmental Science and Forestry, 17; 3. (tie) Carleton College, Macalester College and Pacific Lutheran University, 16.

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ESF graduate and Peace Corp volunteer Don Quinn-Jacobs and his counterparts in Madagascar tend to the soil.
Record Class Set for Fall; 330 First-year Students Expected to Enroll at ESF

ESF is preparing to welcome the largest entering class in its history. More than 330 first-year students and an additional 250 transfer students are expected to enroll for the fall 2014 semester.

Enrollment counts will be finalized as students register for fall semester classes, but the combined total of more than 580 new undergraduates will easily surpass the previous record of 551 set in fall 2012. Several additional characteristics will also make this class a special one.

The entering transfer class will include more than 60 students who are expected to enroll at ESF’s Ranger School campus in Wanakena, N.Y. The recent addition of a new degree program in environmental and natural resources conservation has helped to attract the largest number of Ranger School students in many years.

Twenty-two percent of the entering first-year students and 10 percent of the transfer students will come from outside New York state, maintaining ESF’s position as one of the most geographically diverse campuses in the SUNY system.

The record class will also set a new standard for student diversity. Twenty-two percent of the first-year students and 10 percent of transfers identify themselves as African American, Asian American, Native American, multiple race, or Hispanic. Three percent of the first-year students are international students, and 47 percent are women.

The “typical” entering first-year student will have earned a high school average of 91 percent, a class rank in the top fifth of his or her graduating class, and SAT college entrance examination scores in the top 25 percent of all students tested nationally. Incoming transfer students also earned strong grades at their previous colleges, averaging 3.15 (B+) on a 4.00 scale.

On a graduate level, ESF anticipates the arrival of approximately 125 new graduate students for the 2014-15 academic year bringing graduate school enrollment to approximately 455 students.

ESF Feinstone Award Celebrates STEM Education

ESF recognized the importance of STEM education during its 2013 Feinstone Environmental Awards dinner Oct. 17, 2013.

STEM education - science, technology, engineering, math - works to promote an interest in those critical subjects early in students’ academic careers.

Larry Leatherman, president of the Milton J. Rubenstein Museum of Science and Technology (MOST), received the Feinstone Award in recognition of his leadership at the MOST and in the advancement of science education in Central New York. The event also featured remarks by Emmy-nominated actor, director and environmentalist Ed Begley Jr.

Leatherman has served on the boards of the Syracuse Chamber of Commerce, the Everson Museum of Art, Syracuse Stage, the ESF College Foundation, Inc., and the Syracuse International Film & Video Festival.

The Feinstone Award was presented during a dinner at the Gateway Center on the ESF campus.

The Feinstone Awards program was established by Sol Feinstone, a widely known historian and author who was a 1915 graduate of ESF. His goal was to reward people and organizations that exemplified his belief that the best insurance for a free society lay in people’s desire to do voluntarily the things that need to be done for the good of all.
SUNY Chancellor Honors ESF Student Excellence

Two ESF students were honored with the Chancellor’s Award for Student Excellence.

Beverly Agtuca of Holbrook and Lauren Alteio of Montgomery received the honor, which includes framed certificates and medallions that can be worn at commencement.

At the time of the award, Agtuca was a senior biotechnology major. She was a member of the College’s Honors Program and Alpha Xi Sigma honor society. Agtuca was an intern at the Brookhaven National Laboratory and an undergraduate research assistant for the Connecticut Agricultural Experiment Station. She authored and co-authored publications. She is a member of service fraternity Alpha Phi Omega.

Alteio was a senior environmental biology major. She was the recipient of a highly competitive internship at Harvard Forest under the guidance of distinguished scientist Dr. Jerry Melillo. Alteio participated in the ESF Honors Program and was awarded an Honors Program Scholarship to complete her senior thesis on the effects of earthworm invasions on microbial enzymatic decomposition.

Faculty members join distinguished ranks

Two faculty members at ESF have received SUNY’s highest faculty honor. Dr. Russell Briggs was appointed a Distinguished Teaching Professor and Professor Richard S. Hawks was appointed Distinguished Service Professor.

Candidates for Distinguished Service Professorship must have demonstrated substantial distinguished service not only at the campus and the State University, but also at the community, regional and state levels. Hawks, professor and former chair of ESF’s Department of Landscape Architecture, has provided decades of service to ESF, the SUNY system, national organizations such as the Trust for Historic Preservation and the American Society of Landscape Architects (ASLA), and communities and institutions nationally and internationally.

He has served as president of the Council of Educators of Landscape Architecture (CELA), vice president of ASLA, and is a Fellow of ASLA and CELA. He serves as the only permanent academic on the CEO Roundtable, an organization of leading landscape architecture design firms. Hawks created the Citizen’s Institute on Rural Design, which he co-directed for 23 years to produce workshops for rural community leaders on the importance of planning and design in community success.

The Distinguished Teaching Professorship recognizes and honors mastery of teaching. The designation gives Briggs, a professor in the College’s Department of Forest and Natural Resources Management, an academic rank above that of full professor and recognizes faculty members who have demonstrated superior mastery of teaching skills, scholarship, professional growth, student services, academic standards and evaluation of student performance.

Briggs joined the ESF faculty in 1995, having earned his Ph.D. at ESF in 1985. He is a professor of forest soils, director of the Division of Environmental Science, and director of the Forest Soils Analytical Laboratory. Briggs’ areas of expertise are forest soils and silviculture.

He is held in high regard by his peers for both the diversity of courses he teaches as a divisional director and the joy and enthusiasm he brings to his daily work.

Briggs is an outstanding researcher who is active in the Soil Science Society of America and the Society of American Foresters. He has held leadership positions in both organizations and was selected to serve as division chair within the Soil Science Society. He has authored or co-authored with his students more than 70 articles for these professional societies. He has served as an associate editor for two national/international journals in the field.
ESF faculty, staff honored

A number of ESF employees were honored for their contributions to academics, the campus community and service to the State University of New York.

Five employees received SUNY Chancellor’s Awards:

Dr. Stephen V. Stehman, a professor in the Department of Forest and Natural Resources Management, received the Chancellor’s Award for Excellence in Scholarship and Creative Activities. The award recognizes outstanding academic and creative achievements across a broad spectrum of scholarly and artistic fields.

Dr. Kelley Donaghy, associate professor in the Department of Chemistry, received the Chancellor’s Award for Faculty Service, which recognizes outstanding achievement and skill in providing leadership, service and assistance to the university, community and profession that exceeds expectations.

Dr. Charles Kroll received the Chancellor’s Award for Excellence in Teaching, an award that honors those who consistently have demonstrated superb teaching at the undergraduate, graduate or professional level.

Susan E. Benoit, a senior staff assistant in the Office of Research Programs, was honored with the Chancellor’s Award for Excellence in Professional Service. The award recognizes consistently superior professional achievement within and beyond the position and those who serve as professional role models for a university system in the pursuit of excellence.

Teri Frese, secretary 1 in the Department of Environmental Resources Engineering, received the SUNY Chancellor’s Award for Excellence in Classified Service. The award is given to University Classified Service staff who have consistently demonstrated superlative performance within and beyond their position.

Two faculty members received ESF’s Exemplary Researchers Award:

Dr. Charles Maynard, Department of Forest and Natural Resources Management, and Dr. William Powell, Department of Environmental and Forest Biology, were named ESF’s Exemplary Researchers for 2014-2015, for their groundbreaking work to restore the American chestnut tree. The recognition comes with a $5,000 research account and a presidential salary adjustment. This college-level award recognizes successful, currently active researchers with exemplary research activity, publication records and graduate/undergraduate student mentorship programs.

Powell was also named director of the Council on Biotechnology in Forestry at ESF, has been named 2013 Forest Biotechnologist of the Year by the Institute of Forest Biotechnology (IFB).

A department chair received the 2014 ESF College Foundation Award for Exceptional Achievement in Teaching:

Dr. Gary M. Scott, chair of the Department of Paper and Bioprocess Engineering, received the 2014 ESF College Foundation Award for Exceptional Achievement in Teaching. The award, presented by the ESF College Foundation, Inc., celebrates the accomplishments of ESF faculty members who excel at the art of teaching.

Two employees received campus awards:

Barb Sorrells, secretary 1 in ESF’s Physical Plant, was honored with the campus Quality of Worklife Award in recognition of her contributions to the College, exemplary performances of duties beyond expectations and involvement in campus activities.

Emanuel Carter, Jr., professor in the Department of Landscape Architecture, received ESF’s Public/Community Service Award in recognition of contributions made on behalf of the College to the community through public/community service.
ESF Students March at Super Bowl with S.U. Band

Thirteen ESF students marched at Super Bowl XLVIII Feb. 2 as members of the Syracuse University Marching Band. The band performed during pregame festivities at MetLife Stadium in East Rutherford, N.J., making a joint appearance with the Rutgers University Marching Band. The SU band was invited to the Super Bowl by the National Football League.

For the Super Bowl performance, the band performed music by New Jersey natives Bruce Springsteen, Bon Jovi and Frank Sinatra and Brooklyn native Jay-Z.

Through the longstanding relationship between Syracuse University and ESF, students at ESF may participate in all the clubs and student activities at SU, including musical ensembles and club athletics.

ESF Students Make a Difference Through Community Service

ESF students contributed 73,990 hours of community service during the 2013-14 academic year through the College’s Service Learning Initiative and its focus on community service.

Community service is an integral part of the culture at ESF as students begin participating in community service when they arrive on campus as first-year students through the Saturday of Service, Transfer Day of Service and First-year Service Projects. Through these and other programs, our students learn to become engaged citizens while improving the well being of the local community.

The College works with 200 community partners to provide service opportunities.

Service learning is a form of structured experiential education in which students engage with the community to be active learners, enrich their sense of civic responsibility and explore a practical application for course content. Faculty oversight, students’ reflective thinking, and college/community reciprocity are key components of service learning.

Local Team Takes Grand Prize in Challenge Home Student Design

A team of area college students was named Grand Winner in a national competition to design an energy-efficient, affordable house based on the median family income of the area.

Students from ESF, Onondaga Community College and Syracuse University took top honors in the Challenge Home Student Design competition held in Boulder, Colo., and sponsored by the Department of Energy (DOE) and the National Association of Homebuilders.

The team, which called itself Montage Builders Northern Forest, won the grand award in the single-family detached home category for its Craftsman-style, sustainable design.

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73,990
COMBINED NUMBER OF COMMUNITY SERVICE HOURS ESF STUDENTS VOLUNTEERED DURING THE 2013-14 ACADEMIC YEAR

200
COMMUNITY PARTNERS THAT WORK WITH ESF TO PROVIDE SERVICE OPPORTUNITIES
ESF Landscape Architecture Students Receive National Award for Project

ESF students received a national honor award from the American Society of Landscape Architects.

Seniors Samuel Kolb, Gena Morgis and Curtis McMahon and junior Michael Frederick were honored for their project, Groundwork: Primary Productivity in the Hudson River Estuary. They received an Honor Award from the professional organization. Jamie Vanucci, Dan Reeder and Susan Dieterlen served as their faculty advisors.

The Groundwork project proposes to lay the foundation for design developments in the Hudson River Estuary that acknowledge a new ecology where once disregarded elements of the estuary become the solution for problems in the area and establish a cohesive environment between human populations and estuary ecologies.

The awards honor the top public places, residential designs, campuses, parks and urban planning projects from across the United States and around the world.

ESF Wildlife Society Wins Quiz Bowl

ESF’s Wildlife Society Quiz Bowl team won the Quiz Bowl at the Northeast Student Conclave at Penn State in March. The ESF team beat 10 other teams competing in the bowl.

Quiz bowl team members are Peter Iacono of Brooklyn, junior, wildlife science; Thea Cooper of Howard Beach, sophomore, conservation biology; Rob Meyer of Buffalo, senior, wildlife science; and Sarah McIntire of Waltham, Mass., senior, wildlife science.

Members of ESF’s chapter of The Wildlife Society also placed highly in other events including: dendrology competition, second place, Russell Winter of Washington Grove, Md., junior, wildlife science; ornithology competition, third place, McIntire; mammal identification, second and third places respectively, Cooper and Iacono; human dimensions photo contest, first place, Kevin Skrzynski of Buffalo, sophomore, wildlife science.

The team also won the New York state Wildlife Society Quiz Bowl held in Oxford, N.Y., beating teams from SUNY Cobleskill and Cornell.

The club is advised by Assistant Professor Jonathan Cohen of the Department of Environmental and Forest Biology.
The Mighty Oaks men’s cross-country team brought home its third United States Collegiate Athletic Association (USCAA) Cross Country National Championship Nov. 8, 2013, at Drumlins. The ESF women’s team finished with a strong second-place showing.

The top three colleges in the men’s 8K were ESF, Daemen College, Amherst, N.Y., and Dine College, Tsaile, Ariz. Also in the men’s race, the overall fastest runner of the day was the ESF team captain, senior Timmy Callahan, with a time of 27:30. In the men’s race four of the top 10 runners were from ESF.

Daemen College took first in the women’s 6K race with ESF coming in a close second. Third-place honors went to the University of Dallas, Texas. The top ESF woman finisher was senior Emily Martin.

This marked the first time Syracuse was selected to host the USCAA Cross Country Championships. The USCAA Cross Country National Championships will also take place in Syracuse in November 2014.

The Mighty Oaks women’s soccer team made ESF history with the most wins and its first post-season appearance in the USCAA National Championship tournament. The team closed with a record of 10-3-1. The Mighty Oaks sat undefeated and ranked nationally for nine weeks. The team lost to SUNY Alfred State in the United States Collegiate Athletic Association Soccer National Championship tournament.

The team captured three trophies during the season winning the New Hampshire Tech Invitational tournament, the Barkeater Cup and the Queen of the Hill Cup.
ESF Student-Athletes Receive Honors

ESF students were honored for their academic excellence and outstanding athletic achievements. Mighty Oaks athletes named to All-American teams were:

- **Women’s soccer** — second team All-American, Ashley Miller and Susan Fassler; honorable mention All-Americans, Heather Carl and Bridget Cuddihy
- **Men’s soccer** — second team All-American, Kyle Siegel
- **Women’s cross-country** — second team All-American, Emily Martin
- **Men’s cross-country** — first team All-American, Timothy Callahan and Jon Cleveland; Second team All-American, Stephen Slonosky, Peter LeDuc and Malcolm Moncheur
- **Men’s Basketball** — Honorable mention All-American, Suthod Young

Mighty Oaks athletes named Fall All-Academic Athletes were:

- **Women’s soccer** — Kiana Morse
- **Men’s soccer** — Eli Wildey

Runner Receives Chancellor’s Scholar Athlete Award

Timothy Callahan, a member of the Mighty Oaks men’s cross country and track and field teams, was named a 2014 scholar athlete. Callahan, a May 2014 graduate, majored in conservation biology. Student athletes are nominated by their campus athletic director. Their credentials and accomplishments are then reviewed by a panel of athletic directors from across SUNY as well as the provost’s office.
ESF Celebrates Accomplishments of Graduates and Alumni

ESF conferred more than 500 degrees during joint Commencement exercises with Syracuse University May 11 in the Carrier Dome.

Approximately 425 ESF students received bachelor’s degrees and about 150 received master’s and doctoral degrees.

The College also awarded associate degrees at its Ranger School in Wanakena. Twenty-two students in the forest technology program, 22 students in the environmental and natural resources conservation program and 13 students in the land surveying technology program were honored during a ceremony May 17 at Clifton-Fine High School in Star Lake.

During the College’s Convocation ceremony, held the day before the Commencement ceremony, Henry Lickers, a biologist and longtime director of the Mohawk Council of Akwesasne Department of the Environment, received an Honorary Doctor of Science degree in recognition of his contributions to building cross-cultural partnerships for environmental sustainability. Lickers is an internationally recognized Haudenosaunee leader on matters of indigenous knowledge, science and conservation.

Earlier in the academic year, two ESF alumni were honored during December Convocation, which marks the end of the fall semester. Lifetime Achievement awards were bestowed upon Robert Kinstrey, ’67 and Dr. Chin Yang, ’84.

Kinstrey is a longtime supporter of the College particularly through his involvement in the Syracuse Pulp and Paper Foundation. Kinstrey has 46 years of consulting, operating and technical experience in pulp and paper manufacturing. As director of Pulp & Paper Consultancy at Jacobs he manages pulp and paper business optimization activities.

He is a key supporter of ESF’s Department of Paper and Bioprocess Engineering assisting with the department’s accreditation and encouraging students in their career paths. He was a major contributor to the Class of ‘67 gift/ endowment scholarship and has served as a guest lecturer at the Joachim Center Forum. He received TAPPI’s 2013 Herman Joachim Distinguished Service Award, the highest honor the association bestows upon an individual.

Yang received his Ph.D. from ESF in 1984 in environmental and forest biology. He is a pioneer of microbiology testing in the indoor environment. His environmental microbiology laboratory has provided assistance on the investigations of Legionella bacteria in building water systems. Yang has been a strong supporter of ongoing research efforts at ESF in the area of indoor air quality and wood biodegradation.

A contribution from him and his wife, Li Hua Yang, to the Baker Equipment Fund was targeted to the wood decay research laboratory in the Department of Sustainable Construction Management and Engineering. The donation allowed the College to purchase new equipment to enhance and expand ESF’s research and teaching capabilities in the field of biodegradation of wood products.

College Recognized for Generosity to United Way/SEFA Campaign

The ESF community made a strong contribution to the annual United Way campaign. Through donations, raffles and campus events, faculty, staff and students raised more than $50,000 to benefit various non-profit organizations throughout Onondaga County and New York state.

Karen Moore, special events coordinator in the Office of Communications, and Doug Morrison, research associate, Forest and Natural Resources Management, served as campaign co-chairs. Moore was a finalist for the United Way’s Campaign Volunteer of the Year.

$50,000 CONTRIBUTION MADE TO UNITED WAY BY ESF
Researchers Study Impact of Environment, Physiology, Life History on Migration

Using a suite of research methods, including GPS telemetry of both young and adult Galapagos tortoises, Dr. James Gibbs is working to answer some of the fundamental questions underpinning movement ecology in all animals, not just giant tortoises.

Be it tiny Arctic terns navigating annually between the poles, or millions of wildebeest traversing Africa’s Serengeti plains, migration captures the imagination like few other biological events. Despite its ecological importance and cultural significance, the science of migration remains poorly understood. Questions about the why, when, where, who and how of animal migration are largely unanswered.

Gibbs is working on the project with Assistant Professor Jacqueline Frair of the Department of Environmental and Forest Biology (EFB). According to Gibbs, professor of conservation biology and wildlife management, answering these questions is not only central to understanding the biology of these famous but endangered and poorly known animals, but will also yield research insights applicable to other species in other ecosystems. The reason is that giant tortoises represent a tractable “model” for understanding animal migration.

Tortoise health — exposure to infectious diseases, parasite infection and stress levels — will be determined from a combination of blood and dung samples, while traditional field work will measure reproductive output of migratory versus non-migrating tortoises. Mathematical models will be used to integrate these variables with environmental conditions to answer some of the questions underpinning movement ecology in all animals. The scientific outputs will be packaged into an outreach program with the aim of inspiring and educating school-aged children in both Galapagos and the United States toward a stronger appreciation of ecological sciences and conservation of the natural world.

Clean Biotechnology Could Assist Pulp and Wood Products Industry

A clean biotechnology process — hot water extraction — is a key component to the New Forest Economy (NFE). Developed by Drs. Thomas Amidon and Biljana Bujanovic, and Preston Gilbert, the process systematically disassembles wood fiber in an environmentally friendly way and uses the wood’s components, such as cellulose and hemicellulosic sugars, to make dozens of valuable bioproducts. The integrated process and associated secondary industries result in enhanced wood products, biochemicals, compostable and biodegradable plastics, food additives such as acetic acid and vanillin, pharmaceuticals, nanocrystalline cellulose and energy products such as wood pellets and liquid fuels.

High-value products, including furfural from hemicellulose/pentosans, lignin-based carbon fibers, lignin-based adhesives, and nanocellulose are currently derived using sustainable and efficient means from other sources.

The broader impacts resulting from this work focuses on the forested portions of the northeastern United States, but extend to all forested regions of the country. This NFE technology is intended to extend and in some cases to replace the declining pulp and reconstituted wood products industry. The contraction of the pulp and fiberboard industry in the Northeast and nationally is having devastating impacts on national rural economies. The NFE is a technology-based innovative approach that will create six clusters of interrelated industries that will add value to raw fiber, and jobs and investment to rural economies regionally and nationally. The development of this technology will also create significant new economic opportunity for thousands of brownfield sites across rural America. Commercial scale-up of the hot water extraction process is to start early next year in New York state with the ready-to-apply portions of this work included in the commercialization plan.
Researchers Closer to Restoring American Chestnut Tree

ESF researchers have reached an exciting milestone in the American Chestnut Research and Restoration Project. Using genetic engineering, they have developed American chestnut trees that are at least as resistant to the chestnut blight as Chinese chestnut trees. Field trials will be needed to confirm these results.

Since 1904, when the chestnut blight was discovered, more than 4 billion American chestnut trees have perished. Valued for its resistance to decay, this tree was used in construction and countless everyday wood products. Its abundant nuts fed numerous wildlife species and were also enjoyed by people.

The American Chestnut Research and Restoration Project comprises two teams: one specializing in molecular biology and plant pathology, led by Dr. William Powell, and one specializing in tissue culture and forestry, led by Dr. Charles Maynard. The process started with establishing wild-type chestnut embryos in sterile tissue culture and getting them to multiply. The molecular team continues to hunt for potential blight-resistance genes. The genes are then inserted into the tissue culture chestnut cells, regenerated into whole plants and screened for resistance. When enough small trees have been produced and pre-screened in lab and greenhouse studies, they are planted out in field trials, where they grow for two to three years before they are inoculated with the blight fungus.

Researchers have produced several thousand variants and pre-screened more than 400, most of which were planted in field trials. The most resistant chestnut trees contain a gene (OxO) that codes for an enzyme, oxalate oxidase. This gene comes from wheat and is an excellent choice for chestnut because it is already eaten every day by billions of people. The enzyme works by detoxifying the oxalate (or oxalic acid) the fungal pathogen uses to attack the tree. The team continues to look at other genes and have found two from Chinese chestnut that partially enhances blight resistance. They are now producing trees with OxO and a Chinese chestnut gene stacked together to ensure a sustainable blight resistance.

The team is to work with government regulatory agencies to seek non-regulated status for the most blight-resistant American chestnut varieties. Several environmental impact studies are being conducted and are showing positive results for the blight-resistant American chestnut trees. In July 2014, the team opened a production lab for these trees in the Central New York Biotech Accelerator. The goal is to have blight-resistant American chestnut trees available to the public within three to five years.
The American Institute of Architects (AIA) selected ESF’s Gateway Center as one of the nation’s top 10 sustainable architecture and ecological design projects that protect and enhance the environment.

The selection was announced Earth Day, April 22, 2014, by the AIA and its Committee on the Environment (COTE).

In making the announcement, the AIA called the Gateway Center “a striking symbol of environmental stewardship and climate action leadership.”

The Gateway Center was designed by Architerra of Boston. The prestigious AIA award is the most recent honor in the Gateway Center’s portfolio:

- Leadership in Energy and Environmental Design (LEED) Platinum certification, the highest level attainable under the rating system established by the U.S. Green Building Council
- 2014 Society for College and University Planning/American Institute of Architects – Committee on Architecture for Education Excellence in Architecture for a New Building Award
- 2014 Excelsior Award for Public Architecture Design Award for New Construction from the AIA New York State in collaboration with contracting agencies
- 2014 American Society of Landscape Architects, New York Chapter, Design Merit Award for the green roof
- 2013 American Institute of Architects New England Merit Award for Design Excellence
- 2013 Boston Society of Architects Sustainable Design Award

The Gateway Center, which formally opened in September 2013, is both a hub for campus activity and a teaching tool that demonstrates sustainability. In addition to the unique power plant, the building features a green roof that uses native plant species from eastern Lake Ontario dunes and alvar pavement barrens at the northeastern end of Lake Ontario.

The Gateway is a centerpiece of ESF’s Climate Action Plan, which states ESF’s commitment to achieving carbon neutrality by 2015. In addition, the Gateway Center, with its Trailhead Cafe, ESF College Bookstore, conference center and gathering areas, serves as a centerpiece for campus life. A portion of the College’s renowned Roosevelt Wildlife Collection is also on display.
ESF Foundation Reports
Banner Year

The ESF College Foundation was the beneficiary of another strong year of increased contributions and investment return.

As of March 31, 2014, total assets of the Foundation equaled $65.5 million; more than $20 million ahead of the required benchmark toward the $100 million asset goal for the year 2020.

This year the Foundation received its largest single contribution ever. The estate of Raymond M. Smith, class of 1952, contributed $2.4 million to the Raymond and Rita Smith Scholarship Endowment. The Smith estate gift, combined with other strong fundraising initiatives is moving the Centennial Campaign for ESF toward early completion. As of April 30, 2014, 96 percent of the campaign’s $20 million goal had been received.

The ESF College Foundation development program compares well among SUNY peers. A recent SUNY Fundraising Report, ranked ESF 13th among 32 comprehensive colleges for total dollars raised in fiscal year 2012-13. The same report ranked ESF sixth for both total dollar and total percentage increases in fundraising for the fiscal years 2011-12 and 2012-13.

The ESF College Foundation is currently managing several construction projects to benefit students and academic programs at ESF. An 84-bed addition to Centennial Hall will open in August 2014. The Foundation-owned Masten House conference and hospitality facility in the Adirondacks is receiving a $1 million renovation. Construction of a new student and researcher facility at the Thousand Islands Biological Station is underway.