

ESF IN FOCUS



2014-15
ANNUAL REPORT



Quentin Wheeler, Ph.D.
President

Dear Friends,

ESF has had a wonderful year. We continue to be ranked the #1 college of the environment in the country; we welcomed our most highly qualified class; and the generosity of our alumni, community, friends and supporters concluded ESF's first comprehensive capital campaign ahead of schedule and \$1.5 million over our \$20 million goal. Work on the restoration of the American chestnut continues — an unprecedented scientific achievement. The Roosevelt Wild Life Station is modernizing its vertebrate animal collections, has adopted an exciting new five-year strategic plan and has partnered with the Boone and Crockett Club to endow the first wildlife professorship in the country that fuses conservation and public policy studies.

These and many other impressive achievements by our faculty, staff and students are merely the opening act. This was a year of dreaming — imagining what ESF can become with strategic investments and a renewed set of audacious goals. Through more than two dozen events over the past year, the ESF community contributed a treasure trove of creative ideas for our future. Our challenge now is too many good ideas. To ensure success, we must now select a handful of the best ideas for special focus and investment over the next five years; ideas with the potential to transform ESF to meet the challenges of the 21st century and solidify our leadership position among our peer institutions. Let me mention just three areas that I believe will become signature strengths of ESF.

First is a uniquely excellent ESF experience for our students. We will create an experience that seamlessly combines curricular improvements with co-curricular opportunities to enrich our students' experience and inspire them to great achievement. Beyond the formal elements of this experience we will nurture the unmatched ESF *ethos* that makes us unlike any other campus in the world. The sense of common high purpose, of *esprit de corps*, of hands-on engagement, and of optimism for the future of humanity and the environment will continue to distinguish ESF from all others.

Second is the creation of knowledge. From the fundamental exploration of what we can learn from nature and the dynamics of our planet to use-inspired research creating new and sustainable options for the future, ESF will continue to be a source for new ideas, understanding and possibilities. We aim to balance two overarching discovery goals. On the one hand, we are committed to being nimble and responsive to unforeseen needs and opportunities as they arise in Central New York, the nation, and the world. On the other, we will choose a few areas for which we will be national leaders.

Third is the convening of discussions of the great environmental challenges of our time. Through our Center for a New American Environmentalism and diverse campus initiatives, ESF will strive to be an honest broker in the difficult debates about how we respond to environmental problems. The polarization and political impasse of such issues today must give way to decisions founded on science and guided by values, and that respect the input of all voices.

I invite you to join me in celebrating ESF's achievements this year, following our strategic planning as it happens (www.esf.edu/strategicplan), and, most importantly, sharing your views this fall as we progress from a draft plan to a plan of action for the College.

Sincerely,



President Quentin Wheeler addresses the audience at the inauguration held at Hendricks Chapel.

Quentin Wheeler Installed as ESF's Fourth President



Dr. Quentin Wheeler was installed as the fourth president in the institution's 103-year history Sept. 12, 2014, in the presence of members of the College community, family and friends.

In his inaugural address, Wheeler acknowledged ESF's deep commitment to the environment, saying that ESF is uniquely positioned to play a leadership role in seeking solutions to today's environmental challenges, such as natural resources exploitation, climate change and degraded ecosystems.

"The ESF community, with its passion for the environment, small and nimble size, access to America's great experiment in conservation — the Adirondacks — and networked with the great institutions of SUNY, is perfectly poised to create a new vision, take necessary risks, and become a model institution for the confrontation of this new generation of problems," he said.

Wheeler issued a challenge to the ESF community: "I challenge our dedicated and creative faculty and staff to redesign the ESF experience for undergraduates, creating a unique and comprehensive set of classes and experiences ... that fully prepares the next generation of environmental leaders. ... Let's compile a list of learning outcomes that distinguish our grads from all others and that stretch the normal definition and boundaries of education."

Strategic Planning

This year we were fully engaged in a strategic planning process that will culminate in December 2015 with an adopted draft document that sets new and exciting directions and priorities for ESF. We are imagining how we can make our already outstanding undergraduate experience even better and how we can have the greatest impacts on the environment and human welfare. We also are identifying those areas where we can enjoy preeminence, providing national and international leadership.

We have set the seemingly contradictory tasks for ourselves of both building depth in selected areas *and* remaining nimble and responsive to unforeseen challenges and opportunities. We are taking a fresh look at our amazing field stations and experimental and demonstration forests, seeking to link them into an environmental observatory network that is greater than the sum of its parts. And we are preparing to identify a small number of areas where strategic investments can take us to the next level of accomplishment and impact.

ESF will work to bring to New York and the nation leadership in public understanding of environmental problems and the options we have by convening discussions of disparate views in a process based on science, informed by values, and respectful of diverse perspectives.

The next five years will be transformational for ESF as we position the College for success and leadership in its second century. I encourage you to participate in the final months of discussion of the strategic plan, whether in person on campus or on our website www.esf.edu/strategicplan.



ESF Named to The Princeton Review's 'Best 379 Colleges'

ESF is one of the nation's best colleges for undergraduate education and earned a Top 20 ranking for residence hall quality, according to The Princeton Review. The education services company features ESF in the 2015 edition of its annual college guide, "The Best 379 Colleges."

ESF was also recognized with a Top 20 Princeton Review ranking for "Best College Dorms." The Top 20 residence hall award is not surprising to ESF students living in the College's LEED (Leadership in Energy and Environmental Design) Gold-Certified Centennial Hall. The building features large suites with private bathrooms and Stickley furniture that was custom designed and built with sustainable hardwood. Most importantly at ESF, the building incorporates a host of environmentally friendly features.

The Princeton Review also listed ESF among Top 10 "Impact Schools," saying, the College is dedicated to its mission of sustainability. The ranking described ESF as "a great school for those interested in research and theory" and said students are "out in the field learning how to do what they want to do in life." ESF was described as having "a great small-school atmosphere (with)...all of the perks of a big university," thanks to its relationship with neighboring Syracuse University.

U.S. News: ESF Ranks among the Best

ESF has earned a place among the top universities in America for 2016, as ranked by U.S. News & World Report.

ESF is ranked number 89 on the Best National Universities list in U.S. News' 2016 edition of Best Colleges, the smallest institution to receive such a distinction.

ESF was also recognized as one of the best college values in the nation, earning a ranking of 41 on the U.S. News "Great Schools, Great Prices" list. ESF is the only SUNY campus listed among 50 National Universities selected for this recognition.

ESF is one of three top-ranked SUNY schools on the Best National Universities list. The college is tied with Binghamton University and Stony Brook University for top honors among the SUNY campuses.

The magazine says the National Universities category comprises the 280 institutions (173 public, 100 private and seven for-profit) that offer a wide range of undergraduate majors as well as master's and doctoral degrees. Many of the nation's most prestigious research universities are ranked in this group.

The calculation to determine the best-value schools takes into account a school's academic quality, based on its U.S. News Best Colleges ranking, and the 2014-15 net cost of attendance for a student who received the average level of need-based financial aid.

The magazine states: "The higher the quality of the program and the lower the cost, the better the deal. Only schools in or near the top half of their U.S. News ranking categories are included because U.S. News considers the most significant values to be among colleges that perform well academically." U.S. News pointed out that 70 percent of ESF students receive need-based grants.

Forbes Ranks ESF 20th Nationwide for Best Value Colleges

Forbes placed ESF at number 20 in its listing of "Best Value Colleges 2014."

Forbes said the "Best Value" schools are "top colleges and universities that deliver the goods without picking your pocket." ESF is the only SUNY institution on the list.

Forbes took the school's Quality Score — calculated for Forbes' annual rankings — divided by the school's in-state tuition and fees to identify the 25 "Best Value" colleges in the nation.

ESF also ranked among the Top 250 colleges in the nation in Forbes' overall college rankings, which included both public and private institutions.





ESF Ranked a Best Value Green College

ESF is named one of the top colleges at the forefront of environmentally sustainable practices. The College is ranked 17th on the list of 30 Best Value Green Colleges by Best Value Schools.

The list was compiled using seven categories: net price; Sustainability Tracking, Assessment, and Rating System (STARS) ranking; number of “green” majors; number of research centers and institutes with a sustainable focus; “green” student volunteer opportunities; outdoor/nature-focused recreational activities; and quality/quantity of environmental policies on campus.

ESF Ranked 65th in List of Nation’s Public Colleges

ESF is ranked 65th out of 484 four-year public institutions on the list of Best Public Colleges in America by the American City Business Journal, the parent company of the Albany and Buffalo Business Review and some 40 similar publications around the nation.

The ranking is based on a 19-part formula that looks at multiple factors including a school’s admissions process, graduation and retention rates, costs of tuition and housing, diversity and the economic strength of the surrounding community.

ESF Welcomes Strong Class for Fall 2015

ESF welcomed 318 new first-year students to campus this fall. While the number is slightly smaller than fall 2014’s record number of 331, it is one of the largest first-year classes to ever enter ESF.

The number of new transfer students entering the College this fall is 229, which is a very strong year for transfers. The combined number of new first-year and transfer students — 547 — sets a new record for the College.

With Ranger School enrollment at 62 students, the College also has its largest Ranger School class in recent years.

The total undergraduate enrollment of 1,755 including first-year, transfer, and continuing students is another record for the College. These numbers reflect ESF registered students and do not include cross-registered Syracuse University students taking classes at ESF or students enrolled in the ESF in the High School program.

A record 24 percent of the first-year class will come from outside New York state, along with approximately 9 percent of new transfer students, maintaining ESF’s position as one of the most geographically diverse campuses in SUNY.

Student quality is again expected to be exceedingly strong. College entrance examination (SAT/ACT) scores and high school grade averages are expected to be higher than last year’s very strong class. The “typical” first-year student at ESF earned a high school average of 93 percent, was ranked in the top fifth of his/her class, and reported SAT scores in the top 25 percent of students tested nationally. The cumulative college GPA for entering ESF transfer students is 3.24 this year, exceeding the 3.15 level reached by the fall 2014 class.

On the graduate level, the College welcomed 125 new graduate students for the fall semester, bringing graduate school enrollment to approximately 466 students.

The combined graduate and undergraduate enrollment at ESF is 2,221, up slightly from 2,209 last fall.



SUNY Honors ESF Student Excellence

Kristy Northrup (center) receives the SUNY Chancellor's Award for Student Excellence. At left is SUNY Chancellor Nancy Zimpher, at right is Laura Crandall, director of Student Involvement and Leadership.



Peter “PJ” Connell of Oceanside, New York, and Kristy Northrup of Marmora, New Jersey, were honored with the Chancellor’s Award for Student Excellence. Honorees received framed certificates and medallions that were worn at commencement.

Chancellor’s Award honorees excel both in academic achievement and in at least one of the following areas: leadership, athletics, community service, creative and performing arts or career achievement. The students were honored at a reception hosted by SUNY Chancellor Nancy Zimpher April 2, 2015.

At the time of the award, Connell was a senior environmental resources engineering (ERE) major. He served two terms as president of the Undergraduate Student Association and was a resident assistant and senior resident assistant, a teaching assistant for ERE and senior class marshal. He has volunteered with the Rescue Mission, Relay for Life and the Salvation Army, and as a merit badge facilitator for the Boy Scouts of America. Connell was a student in ESF’s Upper Division Honors Program and was named to the dean’s and president’s lists repeatedly.

He was the student representative on the ESF College Foundation Board of Directors and the ESF Alumni Association Board of Directors. He is a member of the service fraternity Alpha Phi Omega.

Northrup was a senior chemistry and environmental science dual major. She was a teaching assistant, and involved in several student organizations, including serving as president of the ESF Music Society and secretary of the Ecotones. She was a member of ESF’s Alchemist’s Society, Alpha Chi Sigma Honor Society and Green Campus Initiative. She was a member of the Undergraduate Student Association and the Chordatas, an all-female choral group.

Sustainable Energy Management Major Grows

A new sustainable energy management (SEM) major is growing quickly at ESF.

SEM combines the technical understanding of energy and making energy resources more sustainable, and trains students as professional managers of those resources. The program — with its focus on management — is unique.

ESF boasts a number of on-campus energy projects, such as the photovoltaic arrays on Baker Laboratory and Walters Hall, and the combined-heat-and-power plant in the Gateway Center. One of the reasons those projects were put in place was to serve as a living laboratory for students. This allows students to see the projects and the data from them, get experience analyzing them and analyze the financial decisions the College made in adopting them.

The new major is growing quickly. In May 2015, SEM had 15 graduates – a substantial number for a three-year-old major. Some of those graduates are heading into jobs as photovoltaic technicians, shadowing energy advisers before pursuing an advanced degree, and attending Lewis and Clark Law School to specialize in energy law. Currently, there are 100 students enrolled in the program.

FACULTY & STAFF HIGHLIGHTS

Five Employees Receive Chancellor's Awards

Caroline B. Bailey, senior staff assistant in the Department of Landscape Architecture, was honored with the Chancellor's Award for Excellence in Professional Service Award. 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.

Dr. Douglas J. Daley, associate professor in the Department of Environmental Resources Engineering, received the Chancellor's Award for Excellence in Teaching. This award honors those who consistently have demonstrated superb teaching at the undergraduate, graduate or professional level.

Dr. David J. Keiber, professor and associate chair in the Department of Chemistry, was presented with 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. Diane Kiernan, lecturer in the Department of Forest and Natural Resources Management, received the Chancellor's Award for Excellence in Adjunct Teaching, which recognizes consistently superior teaching at the graduate, undergraduate, or professional level.

Dr. Jack P. Manno, associate professor in the Department of Environmental Studies, received the Chancellor's Award in Faculty Service, which recognizes outstanding achievement and skill in providing leadership, service and assistance to the university, community and profession that exceeds expectations.

Faculty, Staff Members Honored

Paul L. Crovella, an instructor in the Department of Sustainable Construction Management and Engineering, was presented with the 2015 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.

Dr. Giorgos Mountrakis, associate professor in the Department of Environmental Resources Engineering, was named the College's Exemplary Researcher for 2015-16. This College-level award recognizes a current researcher who has exemplary research activity, an impressive publication record and active graduate/undergraduate student research programs.

Dr. Lee Newman of the Department of Environmental and Forest Biology received the ESF Public/Community Service Award. The award is given to an employee whose outreach activities to the public provide excellent representation for the College and its mission and/or for those whose volunteer service to the community enhances life for others.

Timothy O'Mara, residence hall director at The Ranger School, was honored with the ESF Quality of Worklife Award. The award is given to an employee whose positive attitude and approach to work provides an excellent example of service and improves the work environment for the entire campus community.

Dr. Stephen V. Stehman, a professor of biometrics in the Department of Forest and Natural Resources Management, was named Distinguished Teaching Professor. The Distinguished Teaching Professorship recognizes and honors mastery of teaching. Stehman was nominated for his demonstrated commitment and skills in the art of teaching. Candidates must have demonstrated consistently superior mastery of teaching; outstanding service to students; and commitment to their ongoing intellectual growth, scholarship and professional growth, and adherence to rigorous academic standards and requirements.

Sustainable Construction Management and Engineering Realigned

ESF's Department of Sustainable Construction Management and Engineering has been dissolved with the construction management programs moving to the Department of Forest and Natural Resources Management and the wood products/science programs moving to the Department of Paper and Bioprocess Engineering. The change took effect July 31, 2015. The realignment will allow the construction management and wood products/science programs to thrive and allow the College to better meet its mission.

German Foresters Visit Ranger School

Foresters from Bavaria, in Germany's southern region, came to the school in Wanakena to develop a better understanding of the different forest management techniques in the United States and Germany.



The Ranger School's Family Weekend had an international flare in 2014 as foresters from Germany were on hand to learn about forest management in the Adirondack Park and share information about the Bavarian national parks.

Foresters from Bavaria, in Germany's southern region, came to The Ranger School in Wanakena to develop a better understanding of the different forest management techniques in the United States and Germany.

"They made comparisons with their counterpart system in Europe, and developed professional contacts during their

visit," said Dr. Michael Bridgen, director of The Ranger School.

The trip was organized by Arthur Reinelt, head of geoinformation for the Bavarian Forest National Park. Reinelt has led previous groups to The Ranger School.

The Germans' arrival coincided with The Ranger School's Family Weekend. "This provided an 'international' experience for our students without having to go international," Bridgen said.

The visit not only included events at The Ranger School, but also visits to the Adirondack Museum and Lake Placid, hikes, and presentations to local officials and interested parties. "The activities were selected to demonstrate silviculture and forest/park management activities, as well as recreational and cultural activities within the park," Bridgen said.

Professor Ramarao Honored with Andrew Chase Award

Dr. Bandaru V. Ramarao



Dr. Bandaru V. Ramarao, a professor in ESF's Department of Paper and Bioprocess Engineering, was honored with the 2014 Andrew Chase Award from the American Institute of Chemical Engineers (AIChE), Forest Bioproducts Division (FBD) recognizing his outstanding scientific contributions to the field of forest bioproducts and leadership and service to the division.

Ramarao has been a professor at ESF since 1997 and has served as the director of the Empire State Paper Research Institute since 2003.

Ramarao's research contributions are in the area of transport processes and separations. He has researched moisture transport processes and water removal from lignocellulosics, including pulps. His primary area of research is in separation processes and has led to commercial applications. He is an editor of "Separation and Purification Technology."

Ramarao has served in leadership roles of the AIChE's FBD for many years as programming chair and division chair.

Dr. Robin Kimmerer, Distinguished Teaching Professor, spoke at the U.N. to commemorate International Mother Earth Day.

Dr. Robin Kimmerer Speaks at the U.N.



Dr. Robin Kimmerer, a Distinguished Teaching Professor at ESF, addressed the United Nations General Assembly April 27, 2015, speaking for 20 minutes as part of the U.N.'s commemoration of International Mother Earth Day.

Kimmerer, a botanist and ecologist, was one of three people invited to address the General Assembly as part of an interactive dialogue called “Harmony with Nature: Towards achieving sustainable development goals including addressing climate change in the post-2015 development agenda.”

She was joined on the panel by Dr. Mark Lawrence, scientific director at the Institute for Advanced Sustainability Studies in Potsdam, Germany; and Maude Barlow, national chairperson of the Council of Canadians, Ottawa, Ontario.

Kimmerer spoke about the importance of a shift from the anthropocentric worldview to a biocentric worldview in support of global sustainability, informed in part by indigenous wisdom.

An enrolled member of the Citizen Potawatomi Nation, Kimmerer told the assembly that more than 100 years ago her grandfather was taken from his home and forced to attend a government-run boarding school that replaced his Native view of the world with that of western settlers. She said it could be seen as a “miracle” that his granddaughter was invited to speak at the U.N.

Kimmerer spoke of the Native view that all species — including fish, birds and plants — deserve respect and thanks for the gifts they give humans. She said humans’ relationship with the land is broken and that correcting the problem requires a transformation of our worldview.

The path to sustainability, she said, lies at the intersection of science and culture: “Can we collectively imagine a new kind of science?”

Kimmerer, director of the ESF Center for Native Peoples and the Environment, also delivered the fourth Dale L. Travis Lecture in September 2014 on the ESF campus to a standing-room-only crowd. Her subject was, “The Honorable Harvest: Indigenous Knowledge and Conservation.”

Kimmerer said many of the issues the world faces involve questions of values; objective, value-free science might not always answer them. “While science is an extremely powerful tool to help us address the issues of sustainability, biodiversity and conservation, it is not the only tool,” she said.

Feinstone Award Honors Conservationist Photographer

ESF presented the 2014 Sol Feinstone Environmental Award to Larry Master in honor of his professional and volunteer contributions to conservation and environmental protection.

Master has cared for the environment and added to society’s understanding of environmental issues throughout his career and his countless volunteer activities. He spent the majority of his career serving as a zoologist for The Nature Conservancy. He eventually joined NatureServe, a non-profit conservation organization that provides a network of natural heritage programs and conservation data centers as a source of information on rare and endangered species and threatened ecosystems.

For more than 50 years, Master has practiced the art of wildlife and natural history photography. He donates the majority of his work to support conservation causes. His website, www.masterimages.org, offers high resolution images and framed prints at no cost to conservation organizations that are working to conserve natural habitats or to curb greenhouse gas emissions.

Master currently serves on the boards of NatureServe, the Adirondack Chapter of the Nature Conservancy, Northern New York Audubon, the Adirondack Council, the Adirondack Explorer, the Ausable River Association and the Northern Forest Atlas Foundation, as well as the Wildlife Conservation Society's Adirondack Advisory Group, the Advisory Group of the Biodiversity Research Institute, the Science/Recovery Advisory Board of Living with Wolves, the Vermont Center for Ecostudies Science Advisory Council and the Mirror Lake Watershed Association.

The Feinstone program has made more than 100 awards, honoring individuals from across the United States for their significant contributions to protecting the environment, promoting the wise use and management of our country's natural resources and promoting the spirit of volunteerism. Sol Feinstone, a widely known historian and author who was a graduate of ESF, established the Feinstone awards program in 1976.

Two alumni honored for career, lifetime achievement

Dr. Jean M.J. Frechet '69 ▶



ESF honored two alumni during December 2014 Convocation.

The Lifetime Achievement award was bestowed upon Dr. Jean M.J. Frechet '69, '72, and the Notable Achievement Award was given to Dr. Jin Yoshimura '89.

Frechet is a world-class materials chemist who has dramatically advanced the field of materials science, chemistry and numerous other related disciplines and was a recipient of the 2013 Japan Prize, one of the most prestigious international awards in science and technology.

He received his master's degree and Ph.D. in chemistry from ESF in 1969 and 1972, respectively.

Dr. Jin Yoshimura '89 ▶



Frechet studied chemistry at ESF with renowned chemistry professor Dr. Conrad Schuerch and is currently vice president for research at King Abdullah University of Science and Technology in Saudi Arabia. He has served as an advisor to several global companies, including Unilever, IBM Corporation, Xerox and DuPont.

After receiving his Ph.D. from ESF's Department of Environmental and Forest Biology in 1989, Yoshimura achieved a number of important professional accomplishments.

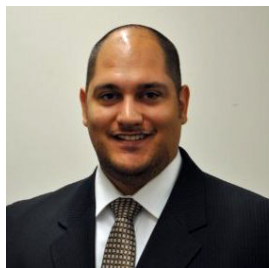
His dissertation on how chance influences the evolutionary process and ecological systems is still widely cited today. His recent work on the evolution of periodic cicadas has received much attention in the world of entomology and evolutionary ecology. One of his papers on this topic was published in PNAS, and others in "Evolution" and "American Naturalist," the top journals in their fields. Yoshimura's prominence in the field is indicated by the numerous positions he has earned with top researchers in ecology and evolution during his career and by his wide collaborations on a multitude of topics in these areas. He has an impressive publication record in terms of breadth, creativity and journal outlets.



Scott J. Blair, the new director of Student Diversity and Inclusion Initiatives

ESF Steps Up Diversity Efforts

ESF is committed to developing a campus rich in diversity and respectful of a wide range of thoughts and experiences. The ESF Diversity and Inclusion Initiative exists to support underrepresented students and foster a campus community where diversity is valued and appreciated. The initiative aims to prepare all members of the ESF community to effectively interact with others in an increasingly diverse and global society.



College Develops Diversity, Inclusion Staff

A visible symbol of ESF's commitment to diversity is the establishment of a staff devoted to those efforts.

Dr. Anne E. Lombard, ESF dean for student affairs, is serving as interim chief diversity officer. Her primary goal is to help develop a diversity plan, in conjunction with a College-wide group or advisory council, for implementation by the staff member who eventually holds the position on a permanent basis. Lombard joined ESF in 2011.

The College has also appointed Scott J. Blair as director of Student Diversity and Inclusion Initiatives in the Office of Student Affairs. Blair, who joined ESF in 2008, previously directed the Academic Support Services Office and led critical elements of the First-Year Experience. He is also the head coach of the Mighty Oaks men's basketball team.

In his new role, Blair will serve as an advocate and resource for all underrepresented students, provide education for the ESF student body, including supporting the development of individual identity/self-awareness, coordinate activities that enhance ESF students' understanding of diversity and inclusion issues in the 21st century and coordinate a pre-orientation program for first-year underrepresented students to aid their transition to college.

Blair describes his role this way: "At ESF, we want our students to go out and improve our world. They can't do that if they don't understand the world they're in. They have to understand the people and cultures in the communities where they work. Only then can they apply what they learned here."

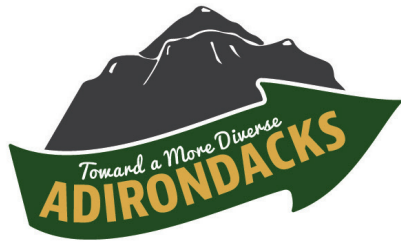
Programs Focus on New, Returning Students

Blair and four other ESF staff members continued the "CONNECTIONS" pre-orientation program that provides support for first-year underrepresented students along with Collegiate Science and Technology Entry Program and Educational Opportunity Program students. The students arrive on campus three days before their classmates and attend programming aimed at helping them adjust to college and achieve academic success.

As highlights of other diversity efforts during the 2014-15 academic year, Blair pointed to a panel discussion called "Breaking Through," which drew members of the ESF community together to discuss the racial climate in the United States and examined the culture at ESF. The College also hosted a presentation by Dr. Carl S. Moore, associate professor with the Research Academy for Integrated Learning at the University of the District of Columbia. His lecture, "Inclusive Teaching=Effective Teaching," focused on the importance of appreciating difference and self-acceptance in developing a greater sense of accountability for one's learning. It also addressed creating an inclusive learning environment and the importance of recognizing various learning styles and needs with a focus on cultural and gender diversity.

ESF's diversity work involves participants ranging from high school students to experts in the field of education and extends to the College's regional campuses. Blair looks to build on this year's successes as he prepares the Diversity and Inclusion programming slate for 2015-16.

ESF Joins Effort Toward Diversity in the Adirondacks



use, enjoy and care about the future of the largest park in the contiguous United States. The event was held at ESF's Adirondack Interpretive Center; the second annual conference was held in the summer of 2015.

ESF's Newcomb Campus is participating in an effort to broaden diversity in the Adirondacks. More than 50 civil rights leaders, community activists, social scientists and others gathered in Newcomb in August 2014 to discuss the need to broaden diversity in race, ethnicity, sexual orientation and gender identity among the park's residents and visitors. A symposium titled "Toward a More Diverse Adirondacks" featured a day of discussion about challenges to and opportunities for widening the pool of people who

College Hosts Visit from NYC Scholars

SEO scholars take in some lessons in Elmwood Park in Syracuse



GIS mapping, fisheries science and invasive species. One of the highlights was assisting with a survey of fish species in Onondaga Lake.

ESF established a relationship with the New York City-based non-profit Sponsors for Educational Opportunity (SEO) Scholars. SEO Scholars is a free eight-year academic program that supports low-income public school students through their high school and college years. The program has a 95 percent college graduation rate. The partnership brought about 20 New York City high school students in the summer of 2015 for a week of hands-on science education. The students were exposed to a variety of topics and activities including sustainability, water ecology,

CSTEP Serves 50 Students

CSTEP students learn hands-on science



The College's longstanding Collegiate Science and Technology Entry Program (CSTEP) has a contract with New York state to serve 50 students. The 2014-2015 roster had 52 students, from freshmen through graduate students. Four seniors attended the Emerging Researchers in STEM Conference in Washington, D.C., with one presenting a poster and winning in her chemistry division, and three others attending the statewide CSTEP Conference in Lake George.

Other highlights of the program during the year were:

- Two CSTEP-funded undergraduate fellows, one with research on campus, one with an off-campus internship
- A joint pre-orientation program with Student Affairs and ESF's Educational Opportunity Program with 15 students enrolled

- A 1-credit optional class with 14 students in the fall and 10 in the spring stressing career development, academic support and community service
- Faculty mentoring and program participation by 26 faculty members across all departments, including a barbecue and kickball game in September
- Workshops on topics that included time management, developing study plans, finding internships, staying balanced, and establishing professional relationships
- A role as host for Syracuse city students on campus for a Shadow Day and helping out during a science day at the Milton J. Rubenstein Museum of Science and Technology

Center for Native Peoples and the Environment Melds Traditional, Scientific Knowledge

Dr. Robin Kimmerer works with students in the field



ESF's Center for Native Peoples and the Environment expanded its influence this past year, holding the Native Earth Environment Youth Camp for the sixth year in a row and delivering educational programs both on and off campus.

The Native Earth Summer Stewardship Camp was held this year at the Adirondack Ecological Center at ESF's Newcomb Campus. Native high school students from across the region explored remote areas of the Adirondacks to participate in stewardship activities and explore the intersection between

traditional ecological knowledge and environmental science. Native Earth programs bring together indigenous environmental stewardship philosophy and the tools of western science, taught by Native elders, teachers and environmental professionals through wilderness field experience, traditional instruction, and cultural and scientific activities.

Other highlights of the year for the center were:

- The hosting of a historic first-ever meeting between the New York State Department of Environmental Conservation (DEC) and the leadership of the Haudenosaunee nations. Attended by DEC Commissioner Joseph Martens and the Chiefs and Clan Mothers of Haudenosaunee nations, as well as ESF faculty and staff, the two-day event provided a forum for exchange of concerns and opportunities for collaboration between the indigenous nations and the DEC over issues of environmental protection and resource use.
- Expansion of educational outreach to Native-serving schools included development of a new "Onondaga Frog Sounds" project, which brought ESF faculty and students to the Onondaga Nation territory to teach schoolchildren to identify frogs by sound and sight. The goal was to prepare citizens to monitor future changes in frog populations.
- A keynote address by Neil Patterson Jr., Tuscarora, assistant director of the center and a member of the Haudenosaunee Environmental Task Force, during the ESF in the High School Environmental Summit in June.
- The fourth Dale Travis Lecture at ESF in September 2014, delivered by the center director, Dr. Robin Kimmerer. To commemorate the 100th anniversary of the extinction of the passenger pigeon, Kimmerer shared insights from indigenous environmental ethics on species conservation.

During a presentation called “The Honorable Harvest,” Kimmerer, an enrolled member of the Citizen Potawatomi Nation, weaved together stories and science before a rapt audience, addressing the current crises around climate change and biodiversity loss.

- The development and submission by center faculty and staff of a number of grant proposals in support of the center’s mission, including a major proposal to the U.S. Department of Agriculture for creation of an innovative graduate program in indigenous environmental issues. Additional funding was received in support of the Native Earth youth camp and from the U.S. Environmental Protection Agency in support of environmental education based on Haudenosaunee environmental philosophy.

Research Opportunity Gets Syracuse Students into ESF Lab

Syracuse city school students Mariam Bility and Max Charlab sort roots as part of a research project



Thirty-seven high school students have participated over the last two years in a research opportunity offered through a partnership between ESF in the High School, a program run by ESF Outreach, and Dr. Ruth Yanai of the Department of Forest and Natural Resources Management. The majority of the students were from underrepresented groups, including many first-generation immigrants, reflecting the rich diversity of the Syracuse City School District. Many of the students devoted enough time to the project to earn a college credit. The students were helping with Yanai’s research in forest ecology and nutrient cycling

(Multiple Element Limitation in Northern Hardwood Ecosystems).

They processed root samples from various soil depths, evaluated herbivory by insects on leaves, analyzed soils, identified snails, built sap flow sensors, and learned to do data entry and analysis. Students also can enroll in the program through the academic year, meeting at ESF on weekends.



ESF Tallies 375 Funded Research Projects

The past year was a successful one for research at ESF, reflecting high levels of research productivity by the faculty, a record expenditure of \$16 million and an impressive \$16.7 million in new awards.

Virtually every key indicator met or exceeded last year’s goals. The College’s five-year performance remains remarkably stable during times of increasing competition for extramural funds. A total of 375 funded projects are underway, including several won through the SUNY Research Foundation Networks of Excellence.

ESF’s record per capita research expenditure level of \$119,700 (vs. \$108,700 last year) remains well ahead of all SUNY doctoral-granting campuses except for Albany. A record number of proposals (335 vs. 308 last year) were submitted to a diverse group of private, state and federal entities.

ESF Nurtures Blight-Resistant American Chestnut Trees

ESF scientists are growing the first American chestnut trees that can withstand the blight that virtually eliminated the once-dominant tree from the eastern United States.

Members of the ESF research team have published three peer-reviewed papers that, along with continuing research, support their conviction that their biotechnology work with a gene originating in wheat makes the American chestnut tree at least as blight resistant as the Chinese chestnut tree that can co-exist with blight with minimal ill effects.

“Our goal was to develop an American chestnut tree that has blight resistance equal to that of a Chinese chestnut and we are there. We’ve done it,” said Dr. William Powell, an ESF professor who leads the research project along with Dr. Chuck Maynard. “The leaf assays show it, the small-stem assays show it,” Powell said, referring to the analytical processes the researchers go through to determine the level of blight resistance. “These American chestnut trees are blight resistant.”

“It is tremendously satisfying to reach this level of success. We have a lot of people to thank for this. It’s been a long haul but we are happy with where we are,” Maynard said. A significant milestone in the process, he said, was reached when the transgenic trees, inoculated with the blight during testing, remained essentially as healthy as control trees that had been inoculated with only water.

Scores of the young transgenic trees developed at ESF were planted in the spring of 2015 across New York state. “Plantlets” about a foot high are now growing in Central, Western and downstate New York under a U.S. Department of Agriculture permit. Their growth will be controlled and monitored as the newly developed strains undergo a rigorous federal approval process.

ESF Researchers Monitor and Model New York Moose Populations

ESF researchers are working with the DEC to determine if the moose population is growing, stable or in decline.



ESF researchers, led by Dr. Jacqueline Frair, are taking a close look at the health of the state’s moose population.

The New York State Department of Environmental Conservation (DEC) partnered with ESF’s Roosevelt Wild Life Station to determine the current status and future potential for moose in the Adirondacks. Frair is the principal investigator in the study.

Under the direction of Frair, associate director of the Roosevelt Wild Life Station, and Dr. Paul Schuette, Roosevelt post-doctoral scholar, moose were fitted with GPS collars and aerial population surveys were completed. In collaboration with project

partners, samples from collared moose provided the first-ever health assessment of live moose in the state.

Over the next four years the ESF team will work with the DEC to determine if the moose population is growing, stable or in decline; estimate the carrying capacity of the Adirondacks to determine moose population potential; identify factors most limiting to moose population growth through their patterns of resource selection, productivity and mortality; and devise an efficient and reliable long-term monitoring plan for moose in the state. This research will frame the first-ever management plan for moose in New York and provide critical insight into the persistence of this important species along their southern range margins.

No species is more iconic of the North Woods than moose (*Alces alces*), a species lost from much of their eastern range in the United States since the 1800s. In recent decades, moose have recolonized forests as far south as the Adirondack Mountains in New York and the Berkshires in Massachusetts. But recolonization of their geographic range has coincided with a warming climate, and moose are now living on the edge of their range of thermal tolerance. Steep moose declines in Minnesota and severe outbreaks of winter tick (*Dermacentor albipictus*) in the eastern United States have each been linked to climate change.

▶ **Forty years after the first captive-bred tortoises were reintroduced to the island of Española by the Galapagos National Park Service, the endemic giant tortoises are reproducing and restoring some of the ecological damage caused by feral goats that were brought to the island in the late 19th century. Said Dr. James P. Gibbs of ESF, this is “a true story of success and hope in conservation.”**

Giant Galapagos Tortoise Population Increasing



A population of endangered giant tortoises, which once dwindled to just over a dozen, has recovered on the Galapagos island of Española, a finding described as “a true story of success and hope in conservation” by Dr. James P. Gibbs, the ESF professor who is the lead author of the study.

Some 40 years after the first captive-bred tortoises were reintroduced to the island by the Galapagos National Park Service, the endemic Española giant tortoises are reproducing and restoring some of the ecological damage caused by feral goats that were brought to the island in the late 19th century.

The global population was down to just 15 tortoises by the 1960s. There are now some 1,000 tortoises breeding on their own. The population is secure. It’s a rare example of how biologists and managers can collaborate to recover a species from the brink of

extinction, according to Gibbs, a professor of vertebrate conservation biology at ESF and lead author of the paper published in the journal “PLOS ONE.”

Gibbs and his collaborators assessed the tortoise population using 40 years of data from tortoises marked and recaptured repeatedly for measurement and monitoring by the Galapagos National Park Service, Charles Darwin Foundation and visiting scientists.

While the tortoise population is stable, it is not likely to increase until more of the landscape recovers from the damage inflicted by the now-eradicated goats.

After the goats devoured all the grassy vegetation and were subsequently removed from the island, more shrubs and small trees have grown on Española. This hinders both the growth of cactus, which is a vital piece of a tortoise’s diet, and the tortoises’ movement. Chemical analysis of the soil, done by Dr. Mark Teece, an ESF chemistry professor, shows there has been a pronounced shift from grasses to woody plants on the island in the last 100 years.

The shrubs and trees also inhibit the movements of the endangered waved albatross that breeds on the island. The plants make it difficult for the ungainly sea birds to take flight.

Gibbs’ co-authors on the study are Elizabeth A. Hunter, an ESF alumna who is now a Ph.D. student at the University of Georgia; Kevin T. Shoemaker, an ESF alumnus who is now a research scientist

at SUNY's Stony Brook University; Washington H. Tapia, formerly of the Galapagos National Park Service; and Linda J. Cayot of the Galapagos Conservancy. The research was supported by the Galapagos National Park Service, the Galapagos Conservancy, the Prometeo Program of Ecuador's National Secretariat for Higher Education, Science, Technology and Innovation, and the U.S. National Science Foundation.

Gibbs was the scientist who, in 2013, traveled with the body of the famed Lonesome George as it was moved from Galapagos to New Jersey to be taxidermied. Lonesome George was the last known Pinta Island giant tortoise and Gibbs had been involved in unsuccessful efforts to stave off the species' extinction by finding George a mate. Gibbs was present at the American Museum of Natural History when the mount of Lonesome George was unveiled in September 2014.

Willow Research Yields Promising Results



The use of shrub willow as a source of renewable energy is beginning to yield promising results. ESF researchers have spent almost 30 years in research and development on shrub willow as a source of biomass for renewable energy as well as its alternative applications.

In northern New York, ESF is supporting landowners who are growing willow on almost 1,200 acres. All of the biomass produced on this land is used at facilities owned by ReEnergy to produce renewable power and heat. Plans are underway with support from the U.S. Department of Agriculture to increase the

area planted to willow to about 2,500 acres. The development of this renewable energy crop in the region will put marginal agricultural land back into production, create jobs and provide another source of income for landowners and local communities.

Increasing yields of willow biomass crops and determining their long-term potential have been goals of the ESF research program for many years. Increasing yields is important to improve the economics and the environmental benefits of the willow system. Research is showing that new cultivars of willow developed at ESF can improve yields by 15-20 percent without increasing inputs to grow the crop. With these higher yields, willow has a slightly negative greenhouse gas balance. This means that wood produced from the system can be used to generate renewable energy with no net addition of CO₂ to the atmosphere. For every unit of fossil fuel invested in growing, harvesting and transporting willow biomass to an end user, between 18 and 43 units of energy can be produced. Along with yield, harvesting and transportation of the willow biomass from the field to an energy generator are other important factors.

The U.S. Department of Energy awarded ESF and a network of partners a \$3 million grant to improve the harvesting and logistics of the willow biomass system. One of the partners, New Holland Agriculture, supported this effort by delivering to ESF one of their FR series forage harvesters fitted with a specially designed cutting head for willow biomass crops, valued at more than \$400,000. The harvester is a key addition to ESF's efforts to improve harvesting operations in willow, which will reduce costs and improve environmental benefits.

ESF also is busy working with partners on other applications for shrub willow. In partnership with Honeywell International, ESF has established more than 100 acres of shrub willow on a former industrial site near Onondaga Lake. The willow will address concerns about potential salt contamination to the lake and will be harvested on a regular basis to generate renewable energy.

Dr. Giorgos Mountrakis, associate professor in the Department of Environmental Resources Engineering

Study Maps Development One County at a Time



ESF researchers have developed a county-by-county map of the United States' "lower 48" that tells a story of land cover and development across the nation and could provide a framework for planners and policy makers as they consider future development.

In a study published in the journal "PLOS ONE," Dr. Giorgos Mountrakis, associate professor in the Department of Environmental Resources Engineering, and Dr. George Grekousis, post-doctoral associate at ESF, compared land

consumption in about 3,000 counties across the country. They integrated satellite data with census population data and produced a map that depicts how each county's developed land compares to that of counties with similar populations.

The hope is that the study will serve as the starting point for a national conversation about urban development and land cover.

Mountrakis obtained the funding through NASA's New Investigator Program.

The scientists used satellite imagery from the U.S. Geological Survey to determine the amount of developed land per county in the continental United States (exclusive of Alaska). Developed land includes anything constructed by humans, such as buildings, roads and parking lots. Then they combined that data with socio-economic information from the U.S. Census Bureau.

The researchers found a diverse range of patterns. The amount of developed land per person in a defined area has strong linkages to human quality of life and ecosystem health. The findings can be used to shape a sustainable future.

Their work also identified socio-economic patterns present in counties that consume significantly more or less land than counties of similar size. Combining socio-economic variables with land-cover information allowed the team to unveil interesting hidden patterns and links among them. For example, they found that counties with less consumption per person were often marked by poverty and higher populations of minorities, raising questions about whether those counties offer adequate services for the population.

TRINITY Institute Promotes Sustainable Energy and Water Systems

ESF's TRINITY Institute for Sustainable Energy and Water Systems continues its work to develop and implement sustainable energy, water and wastewater treatment technologies.

Led by Dr. Klaus Doelle, the institute is part of ESF's Department of Paper and Bioprocess Engineering.

TRINITY works to develop, implement and promote sustainable energy, water and wastewater treatment technologies and processes for municipalities and a variety of businesses. It also works to implement educational and public service components through assisting the College in educational programs and providing scholarship support for students. All sustainable energy and water system research, development and demonstration activities are carried out at ESF and the Cleanwater Educational Research Facility (CERF) in Minoa, New York.

Work conducted at TRINITY helped establish a future Zero Waste operation at CERF. Various undergraduate internships and undergraduate and graduate research projects were provided through the TRINITY Institute at CERF. Two graduate students conducted research on the removal of pharmaceutical compounds and gasification.

TRINITY also is involved in an educational STEM (science, technology, engineering and math) program between ESF, Minoa, and the East Syracuse-Minoa School District (ESM) that allowed the high school students to conduct research projects at CERF. This effort led to a Partnership for Learning Award from the school district.

In the coming year, work will continue to establish a wastewater laboratory within PBE. Researchers will continue to study, monitor and improve the Minoa wastewater operation including anaerobic fermentation gasification and composting. The ESM TRINITY Partnership will grow with the involvement of ESF Outreach.

ESF Researcher, Colleagues Focus on Medical Nanomachines

Nausea. Hair loss. Exhaustion. Memory Problems. Treating cancer with chemotherapy drugs takes a major toll on the body because the medications kill everything in their paths — cancer cells and healthy cells alike. And after causing all this damage, the drugs still can miss their targets, especially when the cancer is metastatic. Similarly, imaging agents — such as dyes that stain cancerous tissue and can be visualized with different imaging techniques like MRI — also can miss their mark.

Dr. Ivan Gitsov, chair of ESF's Department of Chemistry, and colleagues may have found a way around these issues. The multidisciplinary team, which received funding from the Biomaterials subgroup of the Materials and Advanced Manufacturing Network of Excellence, has developed a kind of tiny container that holds both an imaging agent and a cocktail of drugs and delivers them directly to diseased tissue.

This dual-purpose nanoparticle enables doctors to deliver drugs, and track both the rate of delivery — how fast the drug is accumulated in the target's tissue — and the fate of the tissue. In addition, if the cells are already spreading throughout the body, doctors can monitor the spread and treat it because ESF's nanoparticle will follow the spreading cells.

According to Gitsov, associate professor of polymer chemistry and director of ESF's Michael M. Szwarc Polymer Research Institute, the team is focusing its studies, at least initially, on cancer and atherosclerosis, diseases that are among the leading causes of death in the United States.

Faculty Member Focuses on Collaboration as Presidential Fellow

Dr. Paul Hirsch of the ESF Department of Environmental Studies spent the 2014-15 academic year researching and implementing ways to overcome barriers to interdisciplinary collaboration.

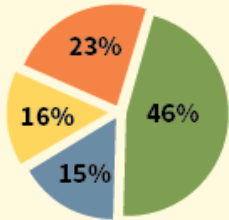
The work, which he is doing under a Presidential Fellowship awarded by the Research Foundation for SUNY, involves the university system's Networks of Excellence program. The program aims to bring together SUNY's top scholars and industry experts to encourage research and commercialization in different areas of science.

Hirsch is engaged in the coordination among the SUNY Networks of Excellence and supports collaboration within and across the networks, assisting with strategic communications and planning.

Hirsch is an assistant professor whose research focuses on the organizational and conceptual challenges of managing complex environmental problems. He joined the ESF faculty in 2011.

In his capacity as a Presidential Fellow, his work included leading workshops to support interdisciplinary and inter-institutional collaboration. For example, he led a workshop at SUNY Buffalo to help engineers and neuroscientists learn how to work together on projects that touch both their realms. He was invited to speak to the SUNY Research Council about using technology as a tool for collaboration.

Campaign Donation Sources



- ESF Family
- Foundations
- Friends
- Corporations

ESF Foundation Marks Successful Capital Campaign

The ESF College Foundation, Inc. wrapped up its successful Centennial Campaign for ESF 18 months ahead of schedule. The campaign came in \$1.5 million over the \$20 million goal. Of those donations given by 9,200 donors, \$10 million was given for academic innovation, \$6.2 million for undergraduate scholarships, \$2.5 million for campus facilities and \$2.8 million for flexible resources.

The Foundation also had the successful launch of ESF's first "crowd funding" campaign. The 10,000 Chestnut Challenge raised more than \$100,000 for ESF research on restoration of the American chestnut tree. Donors hailed from almost every state in the United States, along with Brazil, Canada, Finland, Germany, New Zealand, The Netherlands and Portugal. The chestnut research website was viewed by approximately 500,000 people during the course of the campaign.

Other highlights from the ESF College Foundation, Inc. are worth noting.

Total Foundation Assets

- Total assets as of March 31, 2015, were \$72.6 million
- More than \$22 million ahead of the required benchmark toward the \$100 million asset goal for year 2020

Property Management

- Acquired a new 70-acre hardwood stand in town of Pompey to be managed for sustainable timber harvest
- Received the donation of a 142-acre parcel in Watertown that will be sold for commercial development
- Expanded a partnership with Neotropica Foundation in Costa Rica to enhance management of the Sundt Field Station in Costa Rica
- Created new recreation lease opportunities for individual and group use of foundation timber properties

Boone & Crockett Endowed Program in Wildlife Science

- Executed a memorandum of understanding with Boone & Crockett Club in November 2014 to establish a prestigious endowed program in wildlife science
- The program will include:
 - The first Boone & Crockett named program in the Northeast
 - A professorship, research initiatives and graduate student support
 - A partnered fundraising program is underway with Boone & Crockett Club and Campfire Club of America

Construction Projects

- An 84-bed addition to Centennial Hall was completed and occupied in August 2014.
- Centennial Hall continues to maintain occupancy rates of 96 percent or greater.
- The renovation of the Masten House facility in Newcomb was completed.
- The Masten House became available for conferences and educational programs during summer 2015.
- Construction of the new student researcher building at Thousand Islands Biological Station (TIBS) was completed. The TIBS building was occupied during summer 2015 research season.
- Donor-funded enhancements at Adirondack Interpretive Center were completed. The work included the installation of a new educational display depicting the social and ecological history of the Adirondacks in the Northern Forest Room funded by Charles and Elsbeth Morgan and renovation of a free-standing classroom facility funded by Fritz and Ginny Parker.

A rendering of COR Development's plans for the Inner Harbor at the intersection of West Kirkpatrick and Solar streets.

\$20M SUNY Grant Funds ESF Research Center at Onondaga Lake



N.Y. Governor Andrew Cuomo visited Syracuse in September 2014 to announce that ESF and several partners had received \$20 million through the New York SUNY 2020 Challenge Grant program to develop a science education and research center at Onondaga Lake.

The funding was announced during a packed news conference at Syracuse's Inner Harbor.

Cuomo said the new project symbolizes “the shine of a new era” as the Syracuse region undergoes a “seismic transformation,” moving away from a manufacturing-based economy to one that embraces economic development, education, tourism and tax-free zones for new businesses.

ESF President Quentin Wheeler said Onondaga Lake is undergoing a “fantastic environmental turnaround story” as evidenced by the bioblitz held there in connection with his inauguration.

At the facility, scientists from ESF and other partners will monitor changes to the lake ecosystems. In partnership with the Great Lakes Research Consortium, research funding will flow to the areas of robotic water-quality monitoring, lake restoration and water-quality sensor design. Additional opportunities exist for tourism through the center, STEM education for K-12 students, distance learning and other workforce education. The Center will strengthen Central New York's role as a national center for water research technologies and related industries.

The project will feature a 34,000-square-foot building on the shore of Onondaga Lake at the heart of the Syracuse Inner Harbor revitalization initiative.

Library Receives I2NY Library as Publisher Innovator Grant

ESF's F. Franklin Moon Library was awarded an I2NY Library as Publisher Innovator grant by NY 3Rs Association, Inc.

The \$5,000 grant was awarded for the “Library as Publisher of Graduate Student Data” project at the library. The program addresses a relatively new area of library publishing. Knowing that graduate students at master and doctoral levels generate many data sets that are all too often forgotten once the student leaves the institution, librarians at the Moon Library will work with students and the lab groups to curate the data and publish it on the institutional repository Digital Commons @ ESF, making it accessible to current and future researchers.

Jessica Clemons, interim director of college libraries, is the leader on the project which will allow the library to demonstrate to ESF faculty and the larger community that the library is an essential part of the entire research process.

The I2NY Work Group on Libraries as Publishers developed the grant process to highlight how libraries are no longer just content providers — they are publishers and content creators — as well. ESF was one of two libraries statewide to be awarded a grant. The Fulton Library also received a grant for its Fulton Memoir Project.

SUNY Funding Benefits ESF Work

SUNY awarded \$710,000 in the first round of funding from the SUNY Materials and Advanced Manufacturing Network of Excellence in October 2014. Six of the nine collaborative projects receiving funding involved ESF faculty.

The program aims to support the state's manufacturing sector by bringing faculty and student researchers together with industry experts to spur the development and commercialization of their work. Nine collaborative projects on seven SUNY campuses received funding.

- **\$175,000 for Therapeutics:** This project aims to enable personalized treatment of diseases and injuries through large-scale manufacturing of advanced biomaterials. Dr. Ivan Gitsov, chair of the Department of Chemistry, collaborated with faculty from the University at Buffalo, Binghamton University, SUNY Polytechnic Institute and Stony Brook University.
- **\$60,000 for Green Materials and Manufacturing:** SUNY campuses will engage corporate partners to submit a competitive proposal to establish a Clean Energy Manufacturing Center in New York state. Led by Dr. Christopher T. Nomura, Department of Chemistry, and involving Gitsov and Dr. Mark Driscoll, research associate, the group worked with SUNY Albany, Binghamton University and Stony Brook University.
- **\$15,000 for Characterization:** This project will facilitate online access to a database of more than 250 laboratory resources and advanced materials testing and analysis equipment across the SUNY system. The database will contain information about each piece of equipment as well as contact information for local experts who can advise about their use. David Kiemle, ESF's nuclear magnetic resonance and mass spectrometry specialist and director of Analytical & Technical Services, partnered with faculty from SUNY Polytechnic Institute, Binghamton University, Stony Brook University, University at Albany and University at Buffalo.
- **\$40,000 for Manufacturing Technology:** Participating campuses will partner with industry representatives to expand the development and use of 3D printing and additive manufacturing technology. Driscoll worked with colleagues from Stony Brook University, University at Buffalo and Binghamton University on the project.
- **\$40,000 for Functional & Responsive Materials:** This project will explore the feasibility of creating a "smart sensor platform" that integrates multifunctional sensing materials on a flexible substrate. Gitsov collaborated with colleagues from University at Buffalo, Binghamton University, Stony Brook University and SUNY Polytechnic Institute on the project.
- **\$15,000 for Technology:** This project will facilitate online access to SUNY's informatics resources. The site will contain information about all relevant SUNY assets as well as contact information for experts who can provide further detail. Stephen Weiter, former director of college libraries at ESF, was involved in this project along with professionals from the University at Buffalo, Stony Brook University and Binghamton University.

SUNY Materials and Advanced Manufacturing is one of five Networks of Excellence recently established to increase research collaborations and spur commercialization activities between SUNY and industry partners in core research areas.



Engineering Class Launches Balloon in Global Competition

ESF students participated in an international competition to develop balloons able to gather data in a manner less expensive than using satellites. Led by Dr. Giorgos Mountrakis, the class designed an electronics payload that contained a miniature computer, a panoramic camera, a GPS unit and a radio transmitter for the Global Space Balloon Challenge.



Students in Dr. Giorgos Mountrakis' engineering class participated in the Global Space Balloon Challenge. The international competition involved 295 teams in 17 countries using innovative design to develop balloons able to gather data in a manner less expensive than using satellites.

The ESF team designed an electronics payload that contained a miniature computer, a panoramic camera, a GPS unit and a radio transmitter. The system was carried by a high-altitude balloon, inflated with helium

and took flight April 29 from the ESF campus. The launch was the culmination of a semester spent designing, constructing and testing the balloon.

The payload, launched into a cloudless sky, was missing in action for over a month until it was found by two hikers in Cuyler, New York. The package had landed in a "dead zone" that prevented radio signals from reaching a team of searching students. Mountrakis discovered that the video and still photos collected by the camera during its 2.5-hour flight were still intact so he could download them.

He estimates the balloon reached an altitude of 110,000 feet before it popped, sending the payload back to the ground.

Rosen Fellowships Send Students into the World

Elizabeth Katja Fiertz, an environmental resources engineering major, worked in Kathmandu, Nepal, as a Rosen Fellow.



There is more clean tap water in Kathmandu, Nepal, thanks to the efforts of ESF student Elizabeth Katja Fiertz.

Fiertz, an environmental resources engineering major, worked in Kathmandu, during the summer of 2014 with support from ESF's Rosen Fellowship program.

Her most significant experience was building a new water filtration system for the Kevin Rohan Memorial Eco-Foundation, which is a small non-governmental organization that provides programs that educate local residents about sustainable lifestyle

practices that also benefit less-privileged populations.

Fiertz was one of five participants in the Rosen program, which gives students a chance to learn while pursuing real-world experience linked to their career and life goals. The fellowships are supported by a \$25,000 gift from the Florence and Robert A. Rosen Family Foundation. The Rosens also have generously sponsored ESF interns at their Lakeside Farms property in the Hudson Valley.

The other 2014 participants were Austin Demarest, who conducted coral reef surveys and quantified a native turtle population in the Philippine archipelago; Erin Reidy, who worked primarily in Thailand, learning how Thai medical professionals treat everything from mental illness to tropical diseases; Stanley Kolosovskiy, who built an aquaponics system almost from scratch in his Syracuse apartment to raise both fish and plants; and Katie Mott, who interned at Soil for Life, a non-profit organization in Cape Town, South Africa.

Senior Emily Hall spent her summer at the Fort Johnson REU program at the College of Charleston. Hall studied how marine organisms might respond to a more acidic ocean.

Undergraduate Research Takes Students into the Field and Labs



Five ESF undergraduates participated in the highly competitive Research Experience for Undergraduates (REU) program funded by the National Science Foundation (NSF) that gives undergraduates real-world and hands-on experience in scientific research. The program supports active research participation by students in any of the areas of research funded by the NSF.

Charlene Grabowski, a chemistry major with a polymer concentration, was accepted into the Polymers and High Performance Materials REU at the University of Southern

Mississippi. Grabowski, a junior, participated in the school's Sustainable Chemistry, Engineering, and Materials REU Site: Polymer Innovation for a Sustainable Future program at the School of Polymers and High Performance Materials. Her work was titled "Exploring the Influence of Nanoparticle Composition on the Wetting State of Superhydrophobic Thiol-ene Surfaces."

Senior conservation biology major Connon Thomas studied non-native species while working as an intern in the College of Charleston REU program in Charleston, S.C. He studied the growth of different populations of a non-native marine seaweed named *Gracilaria vermiculophylla* under different treatments of salinity. The species, which originates from Japan, has rapidly spread to the Mediterranean and Atlantic and Pacific U.S. coasts over the last few decades.

Senior Cassandra Beaulieu, an environmental chemistry major, did her REU through the Summer Undergraduate Research Fellowship in Oceanography at the University of Rhode Island's Graduate School of Oceanography. She developed a scientific method to calculate the isotopic composition of nitrogen in the ammonium molecule. After developing the calculation method, she used it to analyze water coming from wastewater treatment facilities to see if that water discharge was affecting the water in Narragansett Bay watershed. She did it by comparing the isotopic compositions of the different waters.

Senior Emily Hall spent her summer at the Fort Johnson REU program at the College of Charleston studying how marine organisms might respond to a more acidic ocean. Ocean acidification, considered "the other CO₂ problem" in addition to climate change, is caused when the ocean absorbs carbon dioxide emissions from the atmosphere. That absorbed carbon dioxide reacts with seawater to form carbonic acid, making the ocean more acidic.

Senior chemistry major Eric Stevens did his REU at Auburn University, working on the chemical conversion of biomass into fuel as part of the Auburn Biosystems Engineering program. His project, "Biochemical Conversion of Biomass into Butanol Using *Clostridium Acetobutylicum*," involved the conversion of chemically pretreated switchgrass into butanol using *C. acetobutylicum*.



Mighty Oaks Men Win Fourth USCAA National XC Meet; Women Finish Third

The Mighty Oaks men's cross-country team celebrates its fourth straight USCAA national championship.



For the fourth time in as many years, the Mighty Oaks men's cross-country team won the United States Collegiate Athletic Association (USCAA) Cross Country National Championship. The ESF women's team finished third, marking the fourth time the women finished in the top three.

The top three colleges in the men's 8K were ESF, Dine College of Tsaile, Ariz., and Alfred State of Alfred, New York. In the men's race, the overall fastest runner of the day was ESF team Captain Tim Callahan with a time of 26:46.3. Four of the top 10 men runners were from ESF.

The Mighty Oaks women's cross-country team celebrates its third-place finish at the USCAA national championship.



The women's team finished third at the 2014 USCAA Cross Country National Championships. The team won the CCOC (Cross Country Only Conference) meet and had a second-place finish at the Hobart Invitational.

ESF Coaches Honored

ESF men's and women's cross-country Head Coach John View was named the 2014 USCAA Men's Cross Country Coach of the Year. View led the men's cross-country team to its fourth straight USCAA cross-country national championship.

ESF men's and women's soccer Head Coach Dan Ramin was named the 2014 USCAA Women's Soccer Coach of the Year. Ramin guided the women's soccer team to 12-1 record and a #2 seed in the USCAA Soccer National Tournament.

In photo at left, men's and women's soccer Head Coach Dan Ramin, left, accepts the 2014 USCAA Women's Soccer Coach of the Year award.



In photo at right, men's and women's cross-country Head Coach John View, left, accepts the 2014 USCAA Men's Cross-Country Coach of the Year award.



ATHLETICSHIGHLIGHTS

Men's Basketball: The Mighty Oaks men's basketball team finished the season with a 5-14 overall record. The team had quality wins against established programs such as Davis College and Alfred State. Leading the team in scoring was senior Suthod Young with an average of 11.8 points per game. Young also lead the team in rebounding including a 17-rebound performance in the season finale against SUNY Canton.

Men's Golf: The Mighty Oaks men's golf team saw improvements during the fall 2014 season, which was highlighted by wins at the S.U. and ESF invitationals. The team placed 11th out of 25 teams at the 2014 USCAA National Championships played on Penn State's Blue Course.

Men's Soccer: The Mighty Oaks men's soccer team dominated in its first six games with a combined score of 29-4, including winning the NHTI Tournament. The team finished the season with a record of 9-7. The Mighty Oaks were led throughout the season by senior Dillon Buchberg, who scored nine goals for the season.

Women's Soccer: The Mighty Oaks women's soccer team ended its season with a program-best 13-2 record including earning a #2 seed at the 2014 USCAA Soccer National Championships. The season also included victories at the Queen of the Hill Cup vs. Onondaga Community College, the Barkeaters Cup at Paul Smith's College and the NHTI Tournament. Senior Bridget Cuddihy led the team in scoring with 18 goals and sophomore goal keeper Kiki Hilmer led the nation in goals against average (.086). The team ended the season as semi-finalists in the USCAA Soccer National Tournament held in Charleston, West Virginia.

Indoor Track: The Mighty Oaks indoor track team competed in three major competitions in the 2015 indoor season. The squad was competitive in each of its meets which included several of SUNY's NCAA Division III campuses and NCAA Division I athletic programs. Leading the team was freshman sprinter Shannon Gordinier. Gordinier finished in the top five in the 60m dash in all of the team's competitions. Her time of 7.74 seconds would have ranked her in a tie for third place nationally among all NCAA Division III schools.

Woodsmen: The ESF Woodsmen's team finished its spring season at the Northeast Woodsmen Conclave at Dartmouth College April 24 and 25, 2015. The men's team finished in fourth place while the women's team finished strong, taking second place at the event. The highlight of the spring season was at the Fifth Annual Pioneer Games held at Alfred State where both the men's and women's squads took home first place.



ATHLETICS HIGHLIGHTS

ESF Athletes Honored by SUNY Chancellor

Two ESF athletes were named 2014-15 Scholar Athletes by SUNY Chancellor Nancy L. Zimpher.

Cambria Ziemer and Ashley Miller were recognized for their outstanding academic excellence and athletic achievement.

Ziemer, a May 2015 graduate of the College's environmental resources engineering (ERE) program, was a member of the women's cross-country team. She is from Boise, Idaho. Miller is a May 2015 graduate from Webster, New York. She majored in ERE and was a captain of the women's soccer team.

Athletes were nominated by their campus athletic director. Nominees' academic credentials and athletic accomplishments were then reviewed by a panel of athletic directors from across the SUNY system and members of the provost's office.

ESF Athletes Win Awards

ESF students were honored for their academic excellence and outstanding athletic achievements. All-Americans are nominated by their coaches and then voted on by coaches in the United States Collegiate Athletic Association (USCAA).

Athletes named All-Americans by the USCAA are:

- Men's cross country — first team All-Americans Timothy Callahan, Thomas Arcuri and Stephen Slonosky; second team All-American Reed Scott.
- Women's cross-country team — second team All-Americans Camila Ferguson-Sierra and Cambria Ziemer
- Women's soccer team — first team All-Americans Kiki Hilmer, Heather Carl and Ashley Miller; second team All-American Bryony Striffler
- Men's soccer team — first team All-American Dan McGraw; second team All-American Kyle Bardwell

Athletes named to the All-Academic team (upperclassmen with a cumulative GPA of 3.5 or higher) are:

- Men's Cross Country — Thomas Arcuri, Nicholas Grieco
- Women's Cross Country — Jenny Frank, Elle Leach, Cambria Ziemer
- Women's Soccer — Heather Carl, Megan Kuczka, Makayla McCormick, Ashley Miller, Kiana Morse, Ariel Roys, Kyna Sanchez
- Men's Soccer — Christopher Kane, Eli Wildey

Bass Fishing Team Catches on at ESF

The newest addition to ESF's athletic lineup is the Bass Fishing Team. Michael Longacre, an aquatic and fisheries science major, founded ESF's first competitive bass fishing team in the spring of 2013.

Since then, the team has placed in the top three out of 50 or more teams in almost every tournament they've attended.

The group, which operates as an ESF club team, competes through the northern college division of the professional organization called Fishing League Worldwide (FLW).

The club meets once a week. The meetings mainly consist of technique discussions and plans for future competitions.

New York is considered one of the top 10 fishing states in the country; ESF is about an hour's drive from many of the best bass fishing lakes in the state, such as Oneida, Onondaga, Cayuga and Ontario.

The ESF bass fishing team is bringing awareness to the sport, as ESF supports the sport's focus on sustainability. Bass fishing is conservation driven, with guidelines for catch-and-release fishing to take care of the resource for future generations.



Mike Longacre, right, and Zach Longo hold some of their catch.



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