Maine's Public Universities
UNIVERSITY OF MAINE SYSTEM

Matthew Revitt <matthew.revitt@maine.edu>

Celebrating the Climate Change Institute's 50th anniversary, first 100% bio-based 3D-printed home, and more!

4 messages

UMaine Research <research@maine.edu> Tue, Dec 6, 2022 at 10:39 AM
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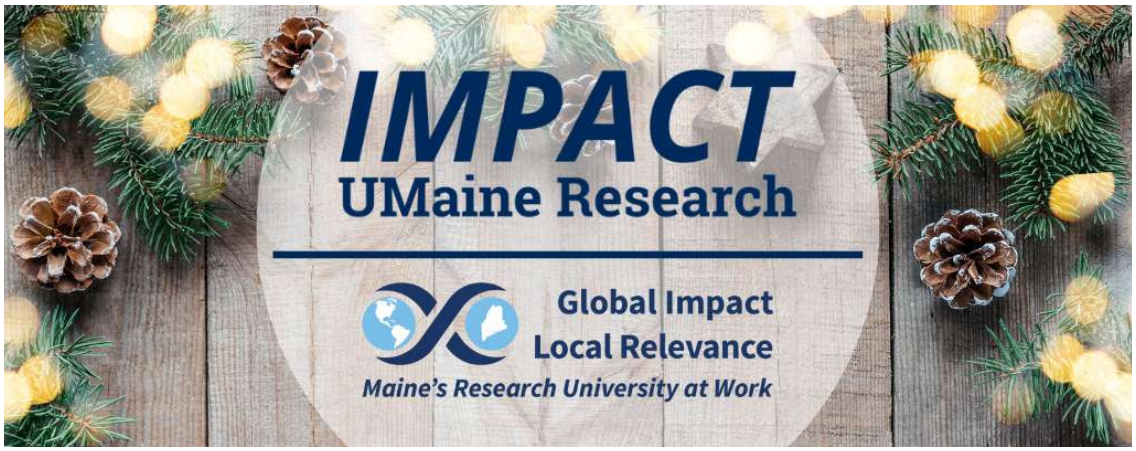

December 2022

Office of the Vice President for Research and Dean of the Graduate School

Spotlight

UMaine Climate Change Institute celebrates 50th anniversary

The University of Maine's Climate Change Institute (CCI) celebrates its 50th anniversary in 2023, marking a half-century of research and education related to climate change in Maine, New England and across the planet. The next half-century of the institute promises even more discoveries and contributions to tackling the all-encompassing challenge of climate change around

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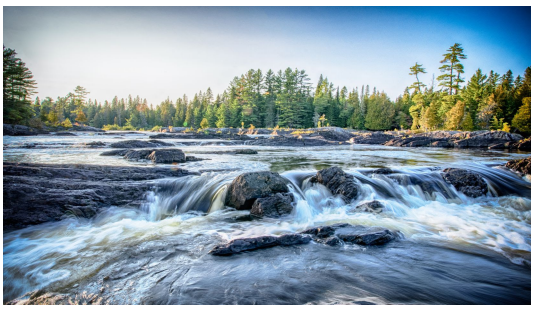

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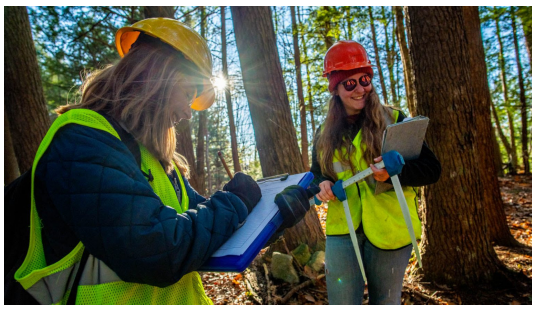

New study outlines ways to recruit more women for bioenergy and forestry

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THE UNIVERSITY OF MAINE

UMaine News

Nun Kun Massif, Ladakh, Indian Himalayas.Photo by Paul Mayewski

UMaine Climate Change Institute celebrates 50th anniversary

November 21, 2022

The University of Maine's Climate Change Institute celebrates its 50th anniversary in 2023, marking half-century of research and education related to climate change in Maine, New England and across the planet.

In 1973, professor emeritus Harold Borns, whose research focused on glaciers and glaciation in Maine, founded the Institute for Quaternary Studies with the goal of conducting interdisciplinary research studying the last 2 million years of Earth's physical, chemical, biological and social characteristics. In 2002, the institute was renamed as the Climate Change Institute (CCI).

Since then, CCI has spearheaded important projects leading to groundbreaking discoveries. Scientists at CCI first mapped the difference between climate during the Ice Age and today in the 1970s; discovered the importance of marine-based ice sheets in the 1980s; connected acid rain to human causes in the mid-1980s; uncovered the concept of abrupt climate change through studying ice cores in Greenland in the mid-1990s; and led expeditions traversing Antarctica to determine the impact of human-sourced pollutants into the 2010s.

Along the way, students at UMaine played a focal role in research and participated in other hands-on learning opportunities through CCI. Many have gone on to be leaders in fields studying the physical, chemical, biological and social aspects of climate change around the world.

More information about CCI's research expeditions can be found on its website.

Paul Mayewski, world-renowned polar explorer, climate scientist and glaciologist, has served as the director of the CCI since 2002. He has led more than 60 expeditions to some of the planet's most remote areas, including an expedition to Mount Everest with National Geographic and Rolex in 2019.

Mayewski said that CCI is one of the first — if not the first — truly interdisciplinary group at UMaine with a worldwide reach.

"Doing interdisciplinary science is not such a simple thing; it really requires an openness to other disciplines' methodologies and the problems that they care about. For a problem like climate change, you need to have a multidisciplinary approach. It's not enough to just have people in silos; you want people to be talking to each other and developing responses to the challenge together. This is bigger than an individual research and/or academic unit," says Mayewski. "We give our graduate students and many undergraduate students a life-changing experience through our approach to research and field expeditions throughout Maine, the polar regions, high mountains, deserts and oceans"

Mayewski discussed the 50th anniversary of CCI on last week's episode of the Maine Question podcast, along with UMaine researchers Cindy Isenhour, associate professor of anthropology and climate change, and Dan Sandweiss, professor of anthropology and Quaternary and climate studies.

On Nov. 18, current students, alumni and faculty gathered to celebrate the 50th anniversary of the CCI — its history, past accomplishments, future goals and continued impact on current students and alumni. Presenters included George Jacobson, director emeritus of CCI; Jim Roscoe, professor emeritus of anthropology with a cooperating professorship at CCI; CCI alumna Kimberly Miner, scientist and engineer at NASA's Jet Propulsion Laboratory (JPL); and CCI alumnus Kurt Rademaker, assistant professor of anthropology at Michigan State University.

Additional video testimonials contributed by CCI alumni that were screened at the 50th Anniversary proceedings can be viewed on YouTube.

Mayewski is proud to be celebrating CCI's 50th anniversary and reveling in its accomplishments, but their work is far from over. The next half-century of the institute promises even more discoveries and contributions to tackling the all-encompassing challenge of climate change around the world.

"Because climate change is a rapidly evolving challenge, it is constantly absorbing more and more disciplines and views," Mayewski says. "We need to constantly evolve with it."

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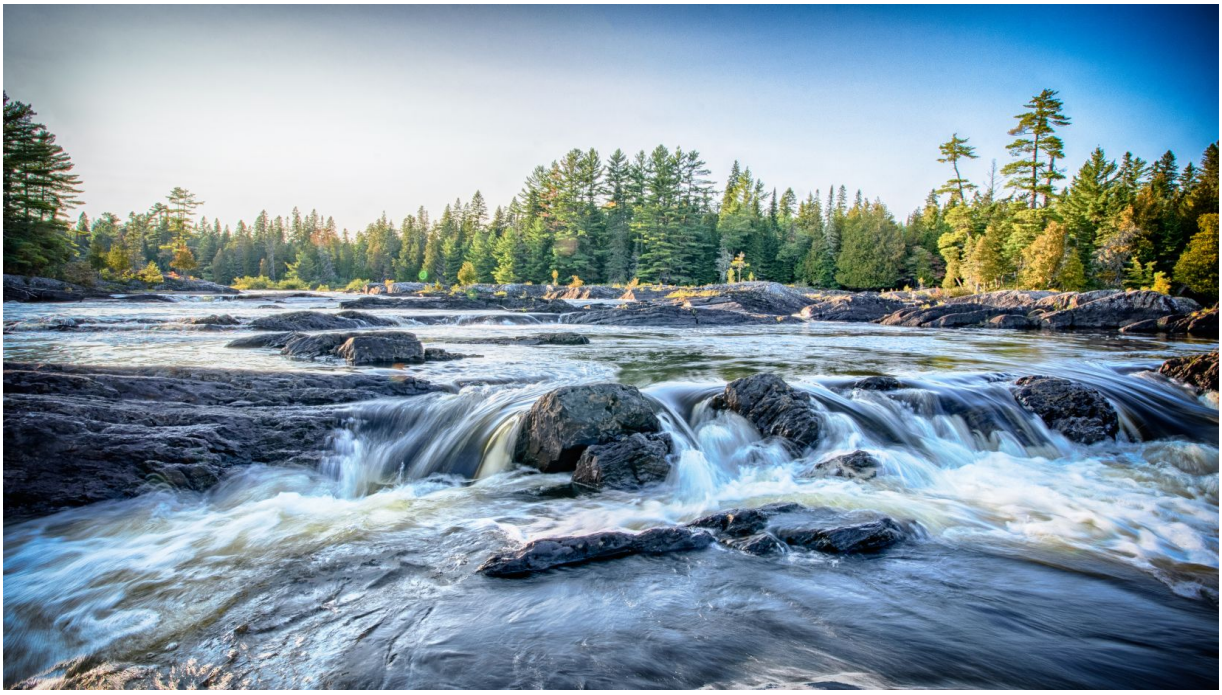

New UMaine PFAS+ Initiative strives to address forever chemicals crisis

December 5, 2022 Announcements, Program Highlight, Research News

The University of Maine has established the PFAS+ Initiative, a university-wide multi-disciplinary effort to address the per- and polyfluoroalkyl substances (PFAS) pollution crisis and its cascading environmental and societal impacts.

The new initiative is led by a steering committee made up of four members including Onur Apul, assistant professor of civil and environmental engineering, Jason Bolton, an associate Extension professor and food safety specialist, Sharmila Mukhopadhyay, a professor of Mechanical Engineering and director of the Frontier Institute for Research in Sensor Technologies (FIRST) and Ali Abedi, a professor of electrical and computer engineering and associate vice president for research.

Commonly called “forever chemicals” because they tend to break down very slowly or not at all, this group of chemicals is widely used in industrial and consumer products such as nonstick pans, takeout food containers and in firefighting foam. Over time PFAS can build up in the environment, impacting soil and water.

Current scientific research suggests that exposure to high levels of certain PFAS may lead to adverse health outcomes, including immune system disorders, thyroid hormone disruption and cancer.

The purpose of the initiative is to foster strategic planning of PFAS mitigation efforts, coordinate high-quality PFAS analysis and conduct cutting-edge research driven by the needs of government agencies, UMaine researchers and impacted stakeholders.

“The PFAS+ Initiative is a unique, collective effort of UMaine researchers to make Maine a nationwide leader in PFAS research. The new initiative will bring academics, government, industry, and community partners together to solve the complex environmental and public health problems caused by PFAS pollution. This is a solid first step in resolving Maine’s contemporary and stigmatic PFAS pollution in a transformative, safe, and sustainable way,” Onur says.

Long-term goals of the initiative are to unravel PFAS pollution pathways and develop safe and sustainable mitigation approaches involving new materials, devices, technologies, and processes for food, water and environmental safety. The initiative also aspires to create a transparent PFAS communication framework to minimize public health hazards.

The initiative's plus sign indicates the breadth of the impact that PFAS has on society, other emerging environmental pollutants and the transformative and novel approach that UMaine realizes.

Forever chemicals represent a grand challenge with local and global impact. UMaine Vice President for Research and Dean of the Graduate School Kody Varahramyan says, "The UMaine PFAS+ Initiative is part of a series of university-wide initiatives that have been strategically created as part of the University of Maine System's Research and Development Plan, and are supporting the realization of making Maine the best state in the nation in which to live, work and learn by 2030. This involves finding solutions to grand challenges that affect people both locally and around the world."

The new initiative builds on efforts by the Cooperative Extension and Senator George J. Mitchell Center for Sustainability Solutions PFAS Research Initiative to provide communities with important information regarding PFAS. Additionally, there are many ongoing collaborative projects across UMaine engaged in the assessment, impact and mitigation of these chemicals.

Onur remains hopeful that research will result in progress. "At the pace and the resources that are spent for PFAS mitigation, I see a light at the end of the tunnel. Meaning that we may be understanding the pathways better. We may find better mitigation technologies. We may be slowly phasing out the fear of PFAS with the knowledge-building," he says.

To read more about the initiative, visit the UMaine PFAS+ website.

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THE UNIVERSITY OF MAINE

UMaine News

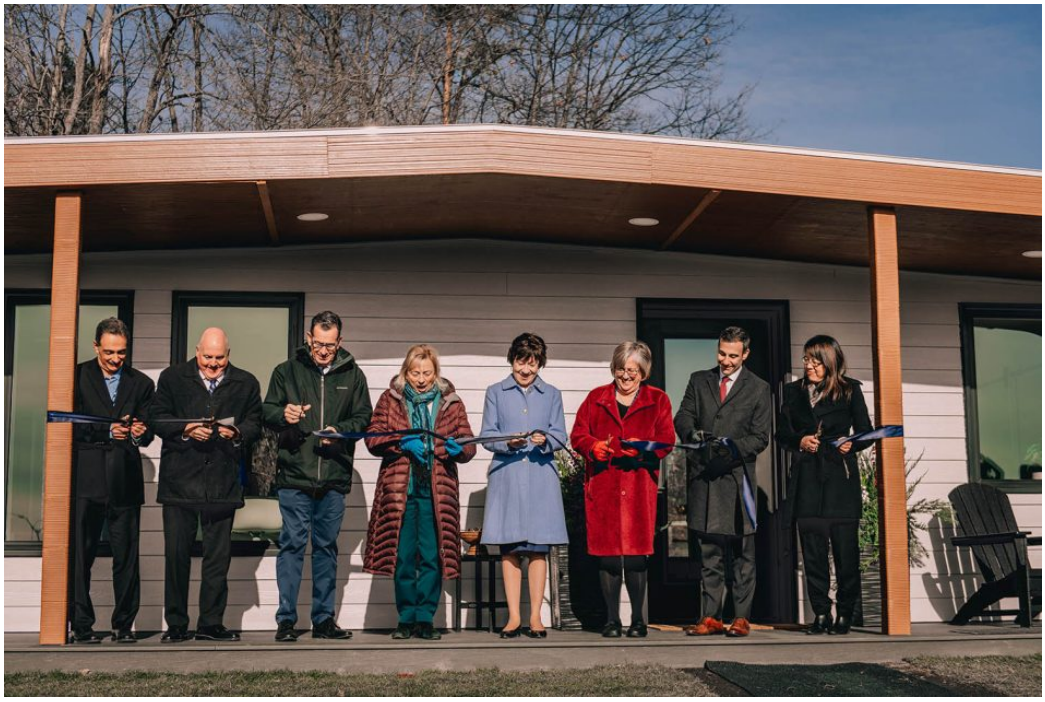
First 100% bio-based 3D-printed home unveiled at the University of Maine

November 21, 2022

On Nov. 21, the University of Maine Advanced Structures and Composites Center (ASCC) unveiled BioHome3D, the first 3D-printed house made entirely with bio-based materials. BioHome3D was developed with funding from the U.S. Department of Energy's Hub and Spoke program between the UMaine and Oak Ridge National Laboratory. Partners included MaineHousing and the Maine Technology Institute.

The 600-square-foot prototype features 3D-printed floors, walls and roof of wood fibers and bio-resins. The house is fully recyclable and highly insulated with 100% wood insulation and customizable R-values. Construction waste was nearly eliminated due to the precision of the printing process.

"Our state is facing the perfect storm of a housing crisis and labor shortage, but the University of Maine is stepping up once again to show that we can address these serious challenges with trademark Maine ingenuity," said Gov. Janet Mills. "With its innovative BioHome3D, UMaine's Advanced Structures and Composites Center is thinking creatively about how we can tackle our housing shortage, strengthen our forest products industry, and deliver people a safe place to live so they can contribute to our economy. While there is still more to be done, today's development is a positive step forward — one that I was proud to support through my Maine Jobs & Recovery Plan and my budget. I extend my congratulations and thanks to the University of Maine and its partners, and I look forward to continuing to tackle these problems with innovative solutions."



The U.S. and Maine, in particular, are experiencing a crisis-level shortage of affordable housing. The National Low Income Housing Coalition reports that nationally, there is a need for more than 7 million affordable housing units. In Maine alone, the deficit is 20,000 housing units and growing each year, according to the Maine Affordable Housing Coalition. Nearly 60% of low-income renters in Maine spend more than half of their income on housing. This untenable situation is exacerbated by the twin challenges of a labor shortage and supply chain-driven material price increases.

In addition to Mills, those participating in the unveiling event included U.S. Sen. Susan Collins; Jeff Marootian, senior advisor for energy efficiency and renewable energy for the U.S. Department of Energy; Rebecca Isacowitz, acting chief of staff for the office of energy efficiency and renewable energy at the DOE; Steve McKnight, acting advanced manufacturing office director for the DOE; and Xin Sun, associate laboratory director for energy science and technology with the Oak Ridge National Laboratory. The leaders toured ASCC, provided remarks and participated in the ribbon cutting ceremony. Also in attendance were legislators, housing advocates and developers, and Maine high school and university students.

“With today’s production of the world’s first ever 3D-printed house made from recycled forest products, the University of Maine continues to demonstrate its global leadership in innovation and scientific research,” said Sen. Collins. “This remarkable accomplishment was made possible by the tenacity and expertise of Dr. Habib Dagher, his team and students at the UMaine Advanced Structures and Composites Center. I commend them on pioneering this new market opportunity for Maine’s forest products industry, which could help alleviate our nation’s housing shortage. Their groundbreaking work will lay the foundation for the future of affordable housing and help create new jobs across our state.”

The technology is designed to address labor shortages and supply chain issues that are driving high costs and constricting the supply of affordable housing. Less time is required on-site building and fitting up the home due to the use of automated manufacturing and off-site production. Printing using abundant, renewable, locally sourced wood fiber feedstock reduces dependence on a constrained supply chain. These materials support the revitalization of local forest product industries and are more resilient to global supply chain disruptions and labor shortages.

Using the advanced manufacturing processes and materials developed at UMaine, future low-income homes can be customized to meet a homeowner’s space, energy efficiency and aesthetic preferences. Importantly, as the manufacturing technology and materials production are scaled up, homebuyers can expect faster delivery schedules.

“We are finding solutions here at ASCC to the pressing problems that our world faces and that Maine faces, through research on transformative offshore wind technology, next-generation solutions for transportation infrastructure, advanced forest products and large-scale 3D printing, and of course, affordable housing,” said UMaine President Joan Ferrini-Mundy. “The work that goes on in this lab absolutely exemplifies the work of a land grant institution — an institution that was started in order to help to solve the problems of, and further the economic advancement of, the state of Maine in partnership with the people of Maine. I couldn’t be more proud to point to this lab and exactly how that’s happening right here.”

The prototype is currently sited on a foundation outside ASCC, equipped with sensors for thermal, environmental and structural monitoring to test how BioHome3D performs through a Maine winter. Researchers expect to use the data collected to improve future designs.

BioHome3D was printed in four modules, then moved to the site and assembled in half a day. Electricity was running within two hours with only one electrician needed on site.

"Many technologies are being developed to 3D print homes, but unlike BioHome3D, most are printed using concrete. However, only the concrete walls are printed on top of a conventionally cast concrete foundation. Traditional wood framing or wood trusses are used to complete the roof," said Dagher, ASCC executive director. "Unlike the existing technologies, the entire BioHome3D was printed, including the floors, walls and roof. The biomaterials used are 100% recyclable, so our great-grandchildren can fully recycle BioHome3D."

"It's these type of public-private collaborations, supported by DOE's Advanced Materials and Manufacturing Technologies Office, that will help spur innovation in our manufacturing sector. These partnerships across industry, academia, government and our national labs have ushered in critical new technologies that are reducing emissions, improving efficiency, and making our manufacturing stronger, more resilient and more sustainable," said Marootian, also the nominee for assistant secretary of the DOE.

According to the United Nations Environment Programme, buildings account for nearly 40% of global carbon emissions. Sustainably grown wood fiber is a renewable resource that captures carbon during the tree growth cycle. BioHome3D may be thought of as a carbon storage and sequestration unit during its lifetime and after it is recycled.

This project is the product of strong partnerships in and beyond the UMaine community. The DOE-funded Hub and Spoke Program between UMaine and Oak Ridge National Laboratory is leading the research and development of sustainable, cost-effective bio-based 3D printing feedstock alternatives, such as the material used for BioHome3D. The Hub and Spoke program is a direct result of a request initiated in 2016 by Sens. Collins and Angus King for a U.S. Department of Commerce Economic Development Assessment team to help Maine bolster the forest economy and create jobs and opportunity in rural regions of the state following the closure of several large paper mills.

Oak Ridge National Laboratory's Manufacturing Demonstration Facility, a leader in advanced manufacturing, and UMaine, home to ASCC, Forest Bioproducts Research Institute and School of Forest Resources, are natural partners in the field of large-scale, bio-based 3D printing. The Maine Technology Institute supported the design of the prototype, and MaineHousing was a key partner in developing and reviewing the specifications for the home in alignment with low-income housing standards.

"This program shows the power of scientific collaboration to address critical national needs," said Sun. "Uniting the capabilities and facilities of ORNL with UMaine's expertise and drive for innovation, we have together achieved a significant milestone in the development of sustainable materials and manufacturing technologies, and decarbonizing the buildings sector."

This effort has been made possible by advances in large-scale additive manufacturing coupled with innovations in bio-based material chemistries that have emerged from these partnerships.

"This project gives us a real possibility to achieve something that has eluded us to-date, and that is the speed of production, to be able to mass produce in a very fast way housing. ...The idea that we can create housing units in a fraction of the time with a fraction of the workforce — that is an efficiency that we've never experienced before. It's going to stretch our precious state and federal resources exponentially, and most importantly, provide — quickly — for those most in need in our state," said Daniel Brennan, director of MaineHousing.

The successful print of BioHome3D builds on the ASCC's demonstrated excellence in advanced manufacturing, design and modeling. The prototype was printed on the world's largest polymer 3D printer, which, in 2019, produced the world's largest 3D-printed boat.

ASCC will be able to scale its advanced manufacturing research in housing construction with the opening of the Green Engineering and Materials (GEM) research Factory of the Future. When complete, GEM will serve as a hub for AI-enabled large-scale digital hybrid manufacturing. The Factory of the Future will drive innovation-led economic recovery in Maine, with bays dedicated to scaling up the production of housing, such as BioHome3D, as well as boatbuilding, an important Maine industry.

A key aspect of the GEM facility is preparing the workforce of the future through immersive world-class educational opportunities at the nexus of engineering and computing. GEM is at the core of the university's plan to create the new Maine College of Engineering, Computing and Information Science's (MCECIS), which integrates engineering and computing education and research. The new GEM facility will be for engineering and computing comparable to a teaching hospital in the medical field, where engineering, computing and information science students learn by working in the lab next to world-class faculty and staff. This effort is supported by the Harold Alfond Foundation and UMS TRANSFORMS, with a goal to double the output of engineers and computing and information scientists to meet workforce needs of the state."

"Workforce and economic development are essential components of ASCC's world-class research," says University of Maine System Chancellor Dannel Malloy. "Our federal and state policymakers know that an investment in Maine's research university is an investment in the state's future. We appreciate the shared vision and the opportunity to continue to show demonstrated return on investment through initiatives like BioHome3D and the students getting hands-on learning today to carry on the work tomorrow."

Already, $25 million in direct investment has been secured for GEM, including $15 million through the Maine Jobs & Recovery Plan — the proposal put forth by Gov. Mills and supported by the Maine Legislature to invest the state's share of federal American Rescue Plan relief funds — and $10 million in the FY22 federal budget thanks to funding requested by Sens. Collins and King. Nearly $40 million in other federal funds championed by Sens. Collins and King are pending for the project.

The Advanced Structures and Composites Center is a world-leading interdisciplinary center for research, education and economic development, encompassing material sciences, advanced manufacturing and engineering of composites and structures. Housed in a 100,000-square-foot ISO-17025-accredited facility, the center has been recognized nationally and internationally for cutting-edge research programs leading and impacting new industries, including offshore wind and marine energy, civil infrastructure, biobased composites, large-scale 3D printing, soldier protection systems and innovative defense-related applications.

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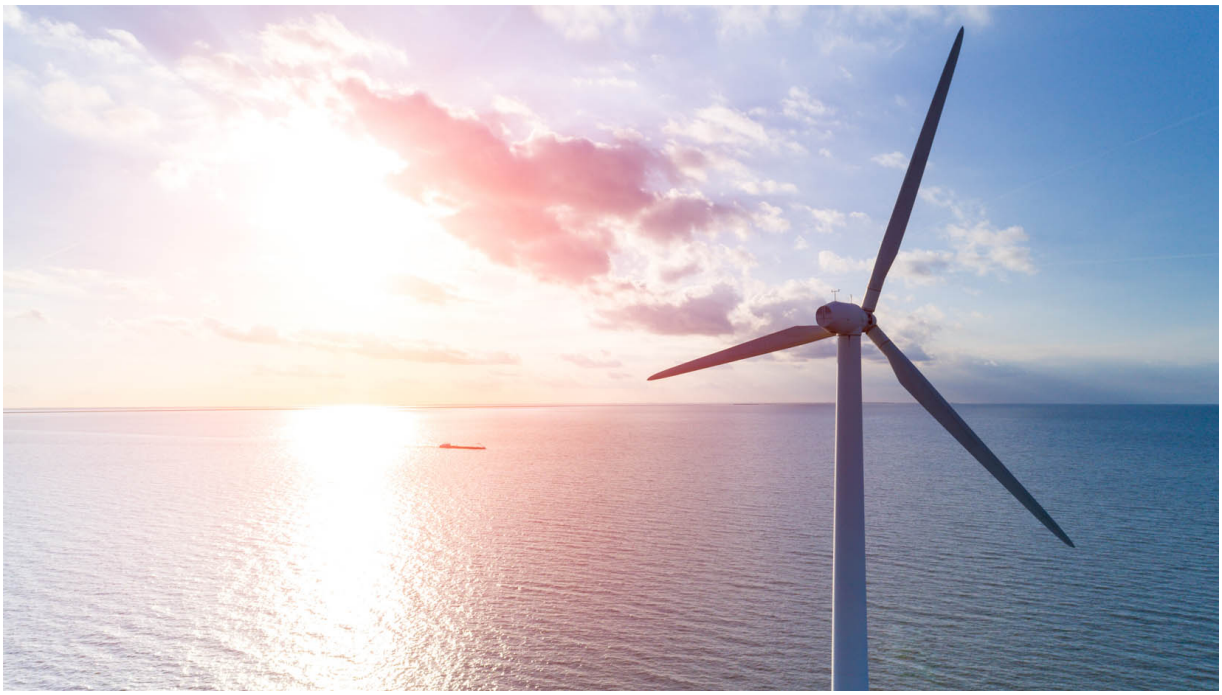
UMaine News



Verma leads UMaine to create new opportunities for students to study offshore wind in Norway

November 21, 2022

Editor's note: This release was updated Nov. 28.

University of Maine graduate students will soon have new opportunities to study offshore wind energy at the largest university in Norway.

The Norwegian government awarded UMaine and the Norwegian University of Science and Technology (NTNU) about $292,000, or approximately 3 million Norwegian krone, to develop new, collaborative learning and research opportunities between both the institutions in the area of offshore wind. This 4-year grant was allocated through the UTFORSK program, which is funded by the Norwegian Ministry of Education and Research and administered by the Norwegian Directorate for Higher Education and Skills. The project award will be shared equally among both the institutions.

Amrit Verma, assistant professor of mechanical engineering, is leading this project with a team of five other faculty members at UMaine. He will also work with a cohort of eight faculty members from NTNU, where he earned his Ph.D. in marine technology.

Among the offerings will be educational and research exchanges, through which UMaine master's and Ph.D. students can take courses and conduct thesis research at NTNU, and vice versa. Funding from the Norwegian government will support the exchange activities of 19 students — seven from UMaine and 12 from NTNU. The project also supports research exchanges for 14 faculty members from both institutions.

"I am thrilled by the new offshore wind power relationship with NTNU, as it provides me the opportunity to expand my graduate studies in innovative and exciting areas while also enhancing my Ph.D. research through travel, exchange, collaboration and publishing efforts with a broad range of Norwegian and other international experts," says Patrick Moroney a graduate student studying wind turbine blades at UMaine's Mechanical Engineering Department.

Through the collaborative project with NTNU scientists, UMaine researchers also plan to revamp five courses and create two new ones that includes a course on floating offshore wind turbines and one course on Marine Operations. Additionally, the multi-institutional team plans to establish four virtual summer intensive classes taught by faculty from both universities.

Researchers from both institutions also aim to prepare two externally funded project proposals and publish more than 10 international research articles together as part of this joint effort. They also plan to establish monthly virtual online seminars with guest lectures and panel discussions starting in January 2023, and two joint seminars held during conferences in 2024 and 2026.

Verma says part of the rationale behind the collaborative project is that the offshore wind industry is rapidly growing worldwide and is recognized as one of the most important strategic areas by Norway and the U.S. Both NTNU and UMaine have a wide range of common research and educational activities in the area of offshore wind technology, thereby formulating a sound basis for a partnership that will advance the growth of next-generation offshore wind infrastructures.

"By receiving the award, we will be able to advance offshore wind education at UMaine further while gaining access to complementary expertise at NTNU," Verma says. "The project will also enable visibility of both institutions nationally and internationally, will promote workforce development while providing an international perspective to UMaine students in the area of offshore wind."

For Verma, the joint effort between his current home institution and his alma mater will be crucial, as this will allow him to work with students and his previous colleagues at NTNU while advancing the research goals of his Wind Energy and Marine Operations (WEMO) Lab.

"I am eagerly looking forward to the collaboration with NTNU on offshore wind energy," says Saravanan Bhaskaran, a graduate student who started studying recently at Verma's WEMO Lab after completing his master thesis at NTNU. "I am sure that the new courses designed for this student exchange program will help me to broaden my knowledge on marine operations. My past affiliation with NTNU as a master student adds to the intrigue and attractiveness of this proposition."

Other UMaine faculty working on the project with Verma include Richard Kimball, Presidential Professor in Ocean Engineering and Energy; Andrew Goupee, Donald A. Grant, Associate Professor of Mechanical Engineering; Wilhelm Friess, associate professor of mechanical engineering; Keith Berube, associate professor of mechanical engineering technology; and Lauren Ross, assistant professor of hydraulics and water resources engineering.

Verma, Kimball, Goupee and Ross also are affiliated with the UMaine Advanced Structures and Composites Center.

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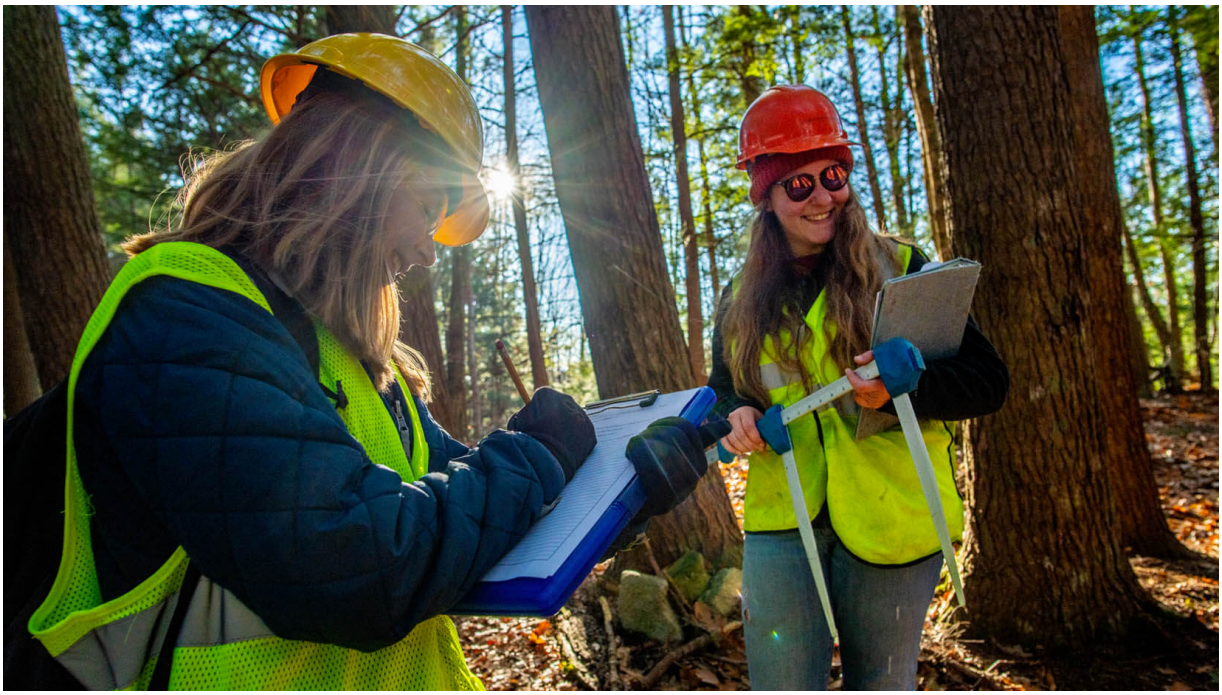
UMaine News



New study outlines ways to recruit more women for bioenergy, forestry

November 18, 2022

To recruit more women for careers in the forestry industry, particularly the bioenergy sector, University of Maine researchers have devised a road map.

The team, led by Abigayl “Abby” Novak, a master’s student in forest resources at the BioEnergy Lab of the School of Forest Resources (SFR), found that attracting and retaining women in bioenergy and related-fields, including those who are young or from historically underrepresented groups, can be done by offering interdisciplinary research opportunities in higher education, having employers provide ample support and outreach, and promoting relatable success stories.

Increasing gender diversity in the workforce not only helps women looking to enter into or advance careers in bioenergy or forestry, but also benefits companies. According to researchers, having more gender-diverse teams can result in better teamwork and more innovative products, services and problem solving.

Their study, conducted by Novak, Ling Li, an assistant professor of sustainable bioenergy systems of SFR, and Katherine Glover, a Research Associate with the Climate Change Institute, was published in the academic journal Sustainability.

To determine the possible benefits of university interdisciplinary research, the group hosted a summer program that involved students and faculty working on projects pertaining to biochar production and multiple applications, which was funded by the AY 21–22 UMS Research Reinvestment Fund (RRF) Grant Programs:Interdisciplinary Undergraduate Research Collaboratives. Eight undergraduate students, three graduate students and six faculty participated. Six out of the 11 students were women. One faculty participant was female.

The program allowed young students to learn skills that helped them envision having a career in forestry and identify and use their strengths for their projects, researchers say. They also benefited from collaborative work and exposure to mentors — graduate students and faculty — with diverse backgrounds.

At the end of it, two undergraduates, one of them female, produced research findings they were able to present at several conferences, symposiums and workshops. Two female students shared plans to pursue graduate studies in nanoscience and sustainability, and one enrolled in a forestry sustainability-related graduate program at UMaine. Several reports produced by program participants were featured in the "2021 Wild Blueberry Grower Report" published by University of Maine Cooperative Extension.

"When I participated in this program as a junior in my undergraduate career, it opened my perspective about the depth of interdisciplinary research," says now UMaine graduate student Jessica Hutchinson. "It is crucial in deepening your understanding of what collaboration looks like, as well as broadening the way you question and approach a topic. Now I am a graduate student in plant, soil, and environmental science working with native woody species. Having been a part of a bioenergy research project not only prepared me for the skills necessary for graduate research, it has broadened the scope in which the principles of my discipline can be applied. I hope to incorporate and promote interdisciplinary studies within my field, focusing on the wide applications of bioenergy."

In addition to offering opportunities for their students, researchers say universities with degree offerings in bioenergy and forestry can help create a more gender-diverse workforce in the industry by implementing ambassador programs, apprenticeships, internships and similar activities for nearby middle and high school students, as well as other forms of outreach.

"The need for universities and colleges to implement a more gender diverse workforce in bioenergy/forestry is essential to progressing as a society that fosters diversity and different backgrounds," Novak says. "In order to create change and new innovative ideas, for researchers and the community, we need to make it a priority to make moves to alter the existing institutional dynamic, especially in a historically white male dominated industry and sector. Being able to have multiple perspectives can move all voices to be united."

Study authors also determined efforts employers could make to not only enlist more women workers, but also better support them and encourage them to pursue leadership roles.

These measures include creating safe spaces for people from underrepresented groups to voice their hardships without fear of retaliation, establishing reachable goals for recruiting more women leaders, being transparent with those efforts and challenges associated with them, and highlighting past or present work of women in forestry in workshops, lectures, newsletters, social media or word of mouth.

Implementing efforts by academic institutions and companies will benefit from having well-developed and well-resourced planning committees, researchers say.

"Since the 1970s, women in forestry have grown from essentially zero to where we are now. While we have progressed significantly in this time, there is more which we can do, as a university, a sector and a state, to promote opportunities for women and under-represented populations in Maine's forest economy," Li says. "Bringing different experiences and backgrounds into the workforce and leadership provides greater opportunities for new ideas and approaches to solve problems."

The study also explored the degree of representation of women among bioenergy companies in Maine, which a particular focus on biochar. Through analyzing public data, researchers found that women account for 33–39% of leadership positions among companies in Maine that contribute to biochar production.

For the forestry industry overall, only a little over 30% is made up of women, with a small part comprising minority women. Nationwide, 38% of forestry workers and leaders are women.

"Abby started researching these demographics in her field in spring 2021 as a project for my 'Women and Climate Change' course," Glover says. "I'm so pleased to see how this study evolved to incorporate workforce development programs happening here on our campus. We now know from multiple studies that supported, diverse teams are in the best position to drive the innovation we will need to tackle the effects of climate change. With this study, we are able to offer actionable advice to others who want to implement similar training programs that develop a diverse workforce and a sense of belonging."

Contact: Marcus Wolf, 207.581.3721; marcus.wolf@maine.edu

UMaine Calendar

This event has passed.

Federal Funding to Improve Education Research and Practice: Lessons Learned, Insights Gained as a Program Director at the National Science Foundation (online)

December 9, 2022 @ 11:30 am - 12:30 pm

Presented by Asli Sezen-Barrie, associate professor of curriculum, assessment and instruction. Part of the School of Learning and Teaching Research Brown Bag series. Sezen-Barrie started an Intergovernmental Personnel Act (IPA) position at the NSF's Division for Research on Learning (DRL) at Formal and Informal Settings on Aug. 30, 2021. Since then, she has served as the program director for numerous DRL programs and represented her division in cross-directorate and interagency groups created to respond to climatic changes. On Oct. 3, 2022, she was appointed co-lead for the Discovery Research PreK-12 program that leads the nation in funding studies on STEM learning, teaching, and assessment at the PreK-12 level. In this talk, Sezen-Barrie will provide information about the structure of NSF and how the foundation works to respond to policy, needs from the field, and future directions highlighted by scholars. She will then provide insights into how an interdisciplinary team of researchers can successfully respond to NSF's program solicitations or Dear Colleague Letters (DCLs). Specifically, she will talk about a) choosing the right program for your research ideas, b) developing familiarity with the panel structure, c) building relationships with the program directors, and d) understanding cross directorate or interagency calls that respond to current and future societal issues. The talk will provide examples of how researchers and practitioners from various fields of education (such as literacy, special education, teacher education, art teachers, and community leaders) can work together to develop successful proposals. Finally, Sezen-Barrie will share some of the contributions of the IPA position to her professional development.

Zoom link here.

DETAILS

Date:
December 9, 2022

Time:
11:30 am - 12:30 pm

Event Categories:
Education and Human Development, Lectures & Seminars, Online Events

Website:
https://umaine.edu/edhd

ORGANIZER

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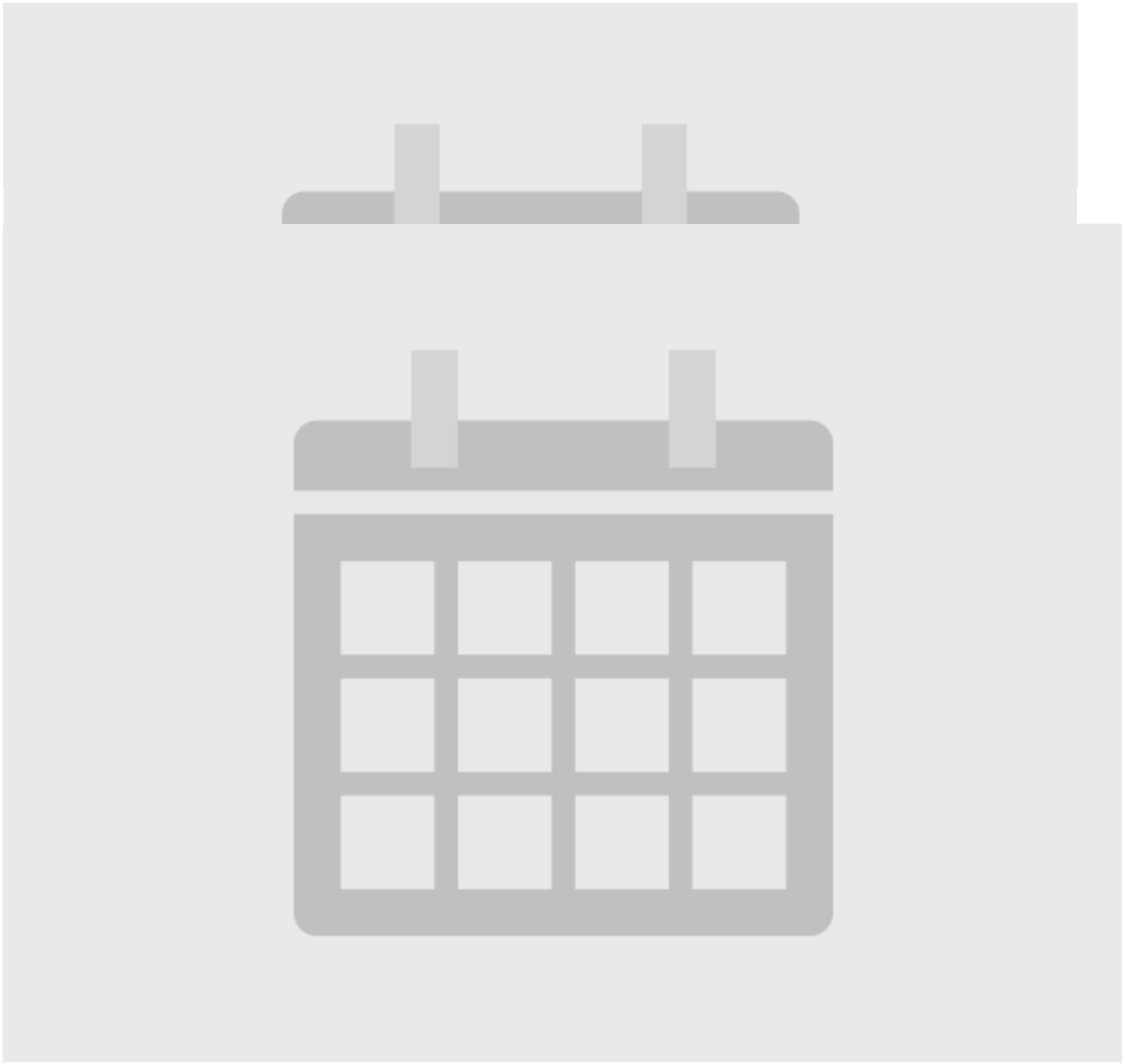
VENUE

Online

Related Events

Mars: The Ultimate Voyage

November 24 @ 7:00 pm - 8:00 pm



Open Educational Resources/Fogler Library Workshop

December 1 @ 10:00 am - 11:00 am

Event Navigation

« Zillman Art Museum Exhibitions

Italian Table »

Center for Research on Sustainable Forests

Massabesic Experimental Forest Climate Change & Adaptation Webinar & Field Tour

Massabesic Research Forest

Webinar: December 14, 2022
1 Cat 1 SAF CFE eligible
Field Tour: December 16, 9:30am-1pm [Postponed]
4 Cat 1 SAF CFE eligible

Webinar Recording

The 1,497-ha Massabesic Experimental Forest consists of two units (North and South) with a number of special ecological features, including one of the largest Atlantic white-cedar wetlands in New England, many vernal pools, and numerous plants and animals that are rare or uncommon. Eastern white pine-northern red oak dominates the upland sites, along with eastern hemlock and red maple. Following years of drought, in October 1947 1,214 ha of the Massabesic forest burned (80% of the timber was destroyed or salvaged) during a fire event that consumed entire villages in southwestern Maine. On the Massabesic, the fire was a stand-replacing disturbance in some places, while in other areas only part of the forest floor was consumed, or skipped entirely.

Massabesic: Forests & Fire: Community Wildfire Protection Plan StoryMap

A Community Wildfire Protection Plan (CWPP) takes partners coming together. Scoping meetings involve key partners, including fire departments, federal agencies, state agencies, county government, non-profits, wildlife groups, lake associations, large private landowners, and user groups. Many action items for the Massabesic CWPP have developed in preliminary conversations. The plan is developed collaboratively and prioritizes hazardous fuel reduction treatments to protect at-risk communities and essential infrastructure from wildfire.

Panelists: Mariko Yamasaki, USFS-NRS, Jon Janelle, USFS-R9-FHP, John Neely, USFS-R9-WMNF, Chuck Lubelczyk, ME Medical Center Research Inst., Kevin Dodds, USFS-R9-FHP, Isabel Munck, USFS-R9-FHP, Katie Glover, U Maine Climate Change Inst.

Webinar: Join US Forest Service panelists Mariko Yamasaki, John Neely, Kevin Dodds, and Isabel Munck, along with Chuck Lubelczyk, of the ME Medical Center Research Inst. and Katie Glover of UMaine's Climate Change Institute as they discuss landscape context, pests and forest health threats, long-term bird observations, and fire & fuel at the Massabesic.

Field Tour: Our panelist team will guide attendees around exotic species detection, oak thinning, wildfire plans and considerations, shelterwood, group selection, hemlock regeneration, and pests/forest health. Time permitting, there will also be a visit to kettle bogs/paleo sites.

Resource Links

Massabesic Experimental Forest, USDA Forest Service website

McConkey, T. and W.E. Smith. 1958. The Massabesic Experimental Forest. Station Pap. NE-108. 19 p.

Dibble, A.C., C. Rees, P. Sendak, J. Brissette. 2004. Vegetation of forested uplands in the Massabesic Experimental Forest. GTR-NE-320. 71 p.

Leak, W.B. and M. Yamasaki. 2013. Effects of low-density thinning in a declining white pine stand in Maine. RN-NRS-170. 6 p.

Leak, W.B., M. Yamasaki, K.P. Bennett, K. Desmarais, P. Pohl, C. Costello, and I. Munck. 2020. White pine silviculture for timber and wildlife habitat in New England. UNH Coop. Extension. 34 p.

Beaudry, F. 2017. Road Mortality Risk for Spotted and Blanding's Turtle Populations, NEFIS Publication 5971, Center for Research on Sustainable Forests, MSc thesis, University of Maine, Orono, ME.

Chalmers, R.J. 2017. Wetland and Nest Scale Habitat Use by the Four Toed Salamander in Maine, and a Comparison of Survey Methods, NEFIS Publication 6780, Center for Research on Sustainable Forests, MSc thesis, University of Maine, Orono, ME.

Waskiewicz, J. 2021. Influence of Neighborhood Structure on Growth in Northern Red Oak-Eastern White Pine Stands, NEFIS Publication 14348, Center for Research on Sustainable Forests, MSc thesis, University of Maine, Orono, ME.

Fries, Megan L. 2002. Relationships between Rooting Restrictions, Radial Growth, and Drought Stress with White Pine (*Pinus strobus*) Decline in Southern Maine. MSc thesis, University of Maine.

FCCI 2022-23 Webinar Series

Maine Forest Climate Change Webinar & Field Tour Series
AMC Research Forests Webinar & Field Tour
Brown Ash/EAB Webinar & Field Tour
Massabesic Experimental Forest Climate Change & Adaptation Webinar & Field Tour
Howland Research Forest Climate Change and Adaptation Webinar & Field Tour