

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

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Credit: University of Maine

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 Abigail "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. 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."

More information: Abigail Novak et al, Integrating Woody Biochar, Women, and Youth in Maine's Bioenergy Industry: Benefits and Challenges, *Sustainability* (2022). [DOI: 10.3390/su142214937](https://doi.org/10.3390/su142214937)

Provided by University of Maine

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