

NRRI Mission:

Deliver research solutions to balance our economy, resources and environment for resilient communities.

www.nrri.umn.edu



From the Editor:

NRRI staff are connected locally and globally. In July, we welcomed visitors from around the world who were taking part in the Woody Crops International Conference in Rhinelander, Wisc.

NRRI's fast-growing tree research was highlighted with pre-conference tours of plantation sites, including seedling progeny trials.

While traditional markets for woody feedstocks – pulp, paper and oriented strandboard – are down, interest in bioenergy is expanding. NRRI's hybrid poplar families are a potential source material for improved growth and yield for many other applications, as well.



NRRI staff welcome Minnesota legislators for a tour in June, 2018.



NRRI Leadership

Rolf Weberg, Executive Director

Initiative Directors:

Eric Singaas, Wood & Bioeconomy
Don Fosnacht, Renewable Energy
Elaine Hansen, Business & Entrepreneurial Support
George Host, Forest & Land
George Hudak, Mining, Minerals & Metallurgy
Lucinda Johnson, Water

Duluth Labs & Administration
5013 Miller Trunk Highway
Duluth, Minn., 55811
218-788-2694

Iron Range Labs
One Gayley Avenue
Coleraine, Minn., 55722
218-667-4201

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Legislators, leaders celebrate NRRI's 35 years

If just one word was allowed to describe NRRI, it would be "collaborative." NRRI researchers reach out to the talents in the University system, across the state to industry and agency partners, and further still to innovators around the globe.

And that spirit is summed up in the words of Minnesota Governor Rudy Perpich (1976-79 & 1983-91): "None of us is as smart as all of us."

On August 10, NRRI celebrated the legislative and community collaboration that formed the institute in 1983. A gathering of legislators, industry, agency and university stakeholders viewed NRRI's newly remodeled lobby with a timeline highlighting examples of projects over the decades.

Representative Mary Murphy was one of the original legislators who promoted the establishment of the institute. She shared stories of growing up in the neighborhood and witnessing the struggles of the economy of the 1980s that NRRI was formed to address.

NRRI's first permanent director, Michael Lalich, spoke about establishing the institute structure and mission and highlighted accomplishments of the staff over his 30 years at the helm.

"I was asked to highlight my favorite success stories, but that's so hard to do," he said. "There are just so many." Among others, Lalich mentioned early assistance to Duluth-based Epicurean and Loll Designs, and Northern Contours of Fergus Falls, which continue to grow and create jobs. He added that taconite industry R&D in Coleraine has also been a boon to the Iron Range over many years.

Lunch followed with comments by UMD Vice Chancellor Fernando Delgado, Rep. Sandy Layman, Brian Hiti representing the Dept. of Iron Range Resources & Rehabilitation, Duluth Mayor Emily Larson and NRRI Executive Director Rolf Weberg. To honor the memory of the two men



NRRI Exec. Director Rolf Weberg addresses approx. 60 participants in the luncheon event.

whose vision and effort propelled the establishment of NRRI – Judge Gerald Heaney and Gov. Perpich – Weberg dedicated the Duluth site's third floor as the Heaney-Perpich Collaboratorium.

"These two men exemplify the spirit of this new flexible and creative space," said Weberg. "Our researchers will use it to explore opportunities and solutions with our stakeholders and partners to continue providing innovations for the challenges of our state and beyond."

Research staff highlighted their excitement for the future in a video [link], and current research projects showcased how NRRI reduces waste, creates opportunities and assesses strategic resources.

"It's exciting to build a future on the solid foundation of the past 35 years," said Weberg. "Our comprehensive and collaborative approach makes NRRI

nationally unique. With continued support, we'll help prepare Minnesota for the economy of the future."



Rep. Mary Murphy talks with NRRI wood scientist Victor Krause about his project to find value in deconstruction housing materials.

NRRI helps adventurous entrepreneur develop water filter

Inspired by the television show "Naked and Afraid," Jeff Love took his sense of adventure – and not much else – to spend five days in the Boundary Waters Canoe Wilderness in 2016. "But with clothes on," he added with a laugh.

Love is a millwright by trade and a self-proclaimed "tinkerer." He packed up a kayak with some rudimentary supplies, including his fishing pole, a hand saw and a water filter.

"I had plenty to eat, plenty of wood for a fire... but water, man, that was constant work. With all that fishing and cutting wood, I was thirsty," said Love.

He had brought along a small filter that produced about a cup at a time. When he returned home, Love shopped for something that was compact yet would provide an easy and fast method to supply filtered water. When his search came up dry, he brainstormed with his son. Using commercially available items, Love cobbled together a floating filter system operating on a battery.

"It worked! I could get about five gallons of water on a nine volt battery and about eight gallons with a lithium," he said. Excited about the possibility of having a unique and marketable product, he showed it to Shannon Benolken at Itasca Economic Development Corporation who conducted a marketing study and sent Love to NRRI for prototyping assistance.

NRRI Business Strategic Project Manager Shima Hosseinpour pulled a team together to help Love move his idea to the next phase. "We brainstormed ideas for the design and developed the first two prototypes," said Hosseinpour.

The University's Office of Technology Commercialization conducted thorough patent search showed that Love's water filter had some unique features.

"It was really good to work with NRRI," said Love. "They had experience that I didn't have and a lot of ideas. Everyone contributed a little bit."



NRRI manager Shima Hosseinpour deployed Business Assistance Funds to help entrepreneur Jeff Love to develop a prototype of his water filter idea.

NRRI Business Development and Intellectual Property Manager, Tim White, helped Love understand the process of taking an idea through product development to production. Working with students at UMD's Department of Engineering will refine the product further for successful injection molding production.

"My goal is to make four of the Water Mender filter units and then ask friends to test them in the field, and give me feedback," he said. "Hopefully I'll have products to sell at the Minneapolis and Duluth Sports Shows in the spring."