THE 2nd NORTHWEST WOOD-BASED BIOFUELS + CO-PRODUCTS CONFERENCE

MAY 3-4, 2016 • SEATTLE, WA

NARA
Northwest Advanced Renewables Alliance

USDA

Washington State University Extension

nararenewables.org

May 3	Conference Opening & Keynote Session: 8:00am - 12:10pm Evergreen Ballroom
8:00-8:05am	Opening Remarks
8:05-8:35am	**Steve Csonka**, CAAFI *How CAAFI is helping create a market for wood-based biofuels*
8:35-9:05am	**Michael Lakeman**, Boeing Commercial Airplanes *Opportunities and challenges in using biofuels for planes*
9:05-9:35am	**Joe Gershen**, Encore Biorenewables *How to survive in a competitive fuel market*
9:35-10:00am	Break

AFRI-CAP Panel Discussion • Evergreen Ballroom	
10:00-10:20am	**William Goldner**, USDA NIFA *USDA's Vision for the Future of Biofuels*
10:20-10:40am	**Tim Rials**, University of Tennessee *The Southeastern Partnership for Integrated Biomass Supply Systems*
10:40-11:00am	**Tom Richard**, The Pennsylvania State University *The Northeast Woody/warm-season Biomass Consortium*
11:00-11:20am	**Nathaniel Anderson**, Rocky Mountain Research Station, USDA Forest Service *Bioenergy Alliance Network of the Rockies: Mid-project findings, challenges, and successes*
11:20-11:40am	**Michael Wolcott**, Washington State University *The Northwest Advanced Renewables Alliance*
11:40-12:10pm	*Panel Discussion with all session speakers*
12:15-1:15pm	Lunch - Salons A-C

May 3 Afternoon Parallel Session: 1:15 - 1:45pm

Track 1: Acquiring, processing, and transporting woody biomass for biofuels and co-products

Todd Morgan, University of Montana
Four Years in the Field: Providing timber harvest and residue information across the Pacific Northwest

Track 2: Economic, social and environmental issues surrounding woody biomass utilization for biofuels and value-added co-products

Dennis Becker, University of Idaho
State policy developments in biomass utilization and impact on business investment

Track 3: Pretreatment and conversion for biofuels and value-added co-products

Johnway Gao, Weyerhaeuser Company
Clean sugar and lignin production using micronized wood pretreatment

Track 4: Bioenergy Literacy in STEM Education

Steve Hollenhorst, Western Washington University
Education Track Welcome

Danica Hendrickson, Western Washington University
Energy Education and Bioenergy Literacy: Starting now

1:45 - 2:15pm

Track 1: Acquiring, processing, and transporting woody biomass for biofuels and co-products

Greg Latta,
University of Idaho
Feedstock supply curves for biojet facilities in the NARA region

Track 2: Economic, social and environmental issues surrounding woody biomass utilization for biofuels and value-added co-products

Jillian Moroney and **Tammi Laninga**,
Western Washington University
Flying Planes with Trees? Stakeholder's levels of knowledge and support for a wood-based biofuels industry in the Pacific Northwest

Track 3: Pretreatment and conversion for biofuels and value-added co-products

Birgitte Ahring, Washington State University
Making high value polymers out of lignin from the Wet Explosion process

Track 4: Bioenergy Literacy in STEM Education

Justin Hougham, University of Wisconsin Extension, Upham Woods Outdoor School, NARA Renewables
Education at the Speed of Research: Communicating the science of biofuels

2:15 - 2:45pm

Track 1: Acquiring, processing, and transporting woody biomass for biofuels and co-products

Natalie Martinkus, Washington State University
NARA Eastside Analysis: A distributed supply chain model

Track 2: Economic, social and environmental issues surrounding woody biomass utilization for biofuels and value-added co-products

Ross Macfarlane, Climate Solutions
Scaling Sustainable Biofuels in the Pacific Northwest: Why policy matters

Track 3: Pretreatment and conversion for biofuels and value-added co-products

Andrew Hawkins, Gevo
Commercializing isobutanol and the path toward lignocellulosic ATJ

Track 4: Bioenergy Literacy in STEM Education

Hailey Faulkner, *and* **Matt Daniels**,
University of Idaho McCall Outdoor Science School
Development of digital teaching resources for exploring the NARA supply chain

2:45-3:15pm	Break

3:15 - 3:45pm

Track 1: Acquiring, processing, and transporting woody biomass for biofuels and co-products

Woodam Chung,
Oregon State University
Developing an integrated logistics model for beetle-killed biomass

Track 2: Economic, social and environmental issues surrounding woody biomass utilization for biofuels and value-added co-products

Bill Drumheller,
Washington State Department of Ecology
The Clean Air Act in Washington State: Implications for forest product industries

Track 3: Pretreatment and conversion for biofuels and value-added co-products

Doug Rivers, ICM Inc.
Challenges in the scale-up of integrated biomass processes

Track 4: Bioenergy Literacy in STEM Education

Jay Well, Oregon State University
Bioenergy Education Pipeline: K12 through undergraduate bioenergy education

3:45 - 4:15pm

Track 1: Acquiring, processing, and transporting woody biomass for biofuels and co-products

Dominik Roser, FPInnovations
Biomass Availability and Logistics in BC: Developing supply chains for the growing bioeconomy

Track 2: Economic, social and environmental issues surrounding woody biomass utilization for biofuels and value-added co-products

Susan Van Dyk, University of British Columbia
Forest biomass-to-biojet: UBC and partners' approach to this opportunity/challenge

Track 3: Pretreatment and conversion for biofuels and value-added co-products

Terry Brix, S2G Biochemicals
S2G Biochemicals: A value-added platform for green glycols and derivatives from diverse C5, and C6 biomass based sugars

Track 4: Bioenergy Literacy in STEM Education

Jay Well, (continued)
Oregon State University
Bioenergy Education Pipeline: K12 through undergraduate bioenergy education

4:15 - 4:45pm

Track 1: Acquiring, processing, and transporting woody biomass for biofuels and co-products

Brendan McCarthy, Portland General Electric Company
Challenges and opportunities with large scale biomass utilization

Track 2: Economic, social and environmental issues surrounding woody biomass utilization for biofuels and value-added co-products

Vikram Ravi, Washington State University
Assessment of regional air quality and health impacts from the NARA aviation biofuel supply chain

Track 3: Pretreatment and conversion for biofuels and value-added co-products

Edward Rode, DNV GL
Renewable feedstocks supplying the petrochemical industry

Track 4: Bioenergy Literacy in STEM Education

Bioenergy Ignite Lesson Share

Mike Froehly, **Laura Waksman**, and **Brooke Guess**,
University of Idaho McCall Outdoor Science School

Laura Wommack, Potlatch High School

Tyler Slostad, Liberty Bell High School

Ralph Rise, Lake Roosevelt High School

Track 1: Salons F/G | **Track 2: Snoqualmie 1** | **Track 3: Salons H/I** | **Track 4: Snoqualmie 2**

5:30 - 7:30pm
May 3 Poster Presentation and Reception
Salons A - C

May 4 — Morning Parallel Session: 8:00 - 8:30am

Track 1: Acquiring, processing, and transporting woody biomass for biofuels and co-products

Karl Olsen and **Tammi Laninga**,
Washington State University and Western Washington University
Exploring the feasibility for a micronized wood depot on Washington's Olympic Peninsula

Track 2: Economic, social and environmental issues surrounding woody biomass utilization for biofuels and value-added co-products

Gloria Flora, Sustainable Obtainable Solutions
Eyes on the Forest: The human dimensions of biomass

Track 3: Pretreatment and conversion for biofuels and value-added co-products

Tom Spink, TSI Inc.
Wood Bio Refinery Co Products; A NARA perspective

Track 4: Bioenergy Literacy in STEM Education

Jennifer Schon,
University of Idaho McCall Outdoor Science School
How do we measure energy literacy and what does it look like?

8:30 - 9:00am

Track 1: Acquiring, processing, and transporting woody biomass for biofuels and co-products

Gareth McDonald, Advisian
Solid biomass for power generation – current & future

Track 2: Economic, social and environmental issues surrounding woody biomass utilization for biofuels and value-added co-products

John Field, Colorado State University, BANR
GHG implications of dead wood removal for bioenergy: problem framing, system modeling, and sensitivity analysis

Track 3: Pretreatment and conversion for biofuels and value-added co-products

Xiao Zhang, Washington State University
Oxidative conversion of lignin to hydrocarbon fuel and chemicals

Track 4: Bioenergy Literacy in STEM Education

Jennifer Schon and **Sadie Perrin**,
University of Idaho McCall Outdoor Science School
What's the Value of a Tree? Using STEM and bioenergy to field passion in energy literacy

9:00 - 9:30am

Track 1: Acquiring, processing, and transporting woody biomass for biofuels and co-products

Joel Bisson, Humboldt State University
Production of quality feedstock from forest residues for biomaszs conversion

9:00 - 9:30am *(continued)*

Track 2: Economic, social and environmental issues surrounding woody biomass utilization for biofuels and value-added co-products

Kim Littke, University of Washington
Evaluation of soil for sustained productivity of biofuel feedstock from coastal Douglas-fir plantations

Track 3: Pretreatment and conversion for biofuels and value-added co-products

Rodrigo Morales-Vera, University of Washington
Techno-economic feasibility and environmental impacts of acetic acid production from poplar biomass via fermentation

Track 4: Bioenergy Literacy in STEM Education

Danica Hendrickson, Facing the Future
How can sustainability be used as a context for energy education?

9:30-10:00am	Break

10:00 - 10:30am

Track 1: Acquiring, processing, and transporting woody biomass for biofuels and co-products

Karl Englund,
Washington State University
Biorefinery feedstocks derived from recovered wood from construction and demolition debris

Track 2: Economic, social and environmental issues surrounding woody biomass utilization for biofuels and value-added co-products

Indroneil Ganguly,
University of Washington
'Woods-to-Wake' life cycle assessment of residual woody biomass based jet-fuel using mild bisulphite pretreatment

Track 3: Pretreatment and conversion for biofuels and value-added co-products

Mary Dinh,
Red Rock Biofuels
From Waste to Value: Forest and mill residue to drop-in jet and diesel fuels

Track 4: Bioenergy Literacy in STEM Education

Panel Discussion: How does bioenergy literacy converge with STEM careers, economics and industry?

Moderator: **Justin Hougham**, NARA
Jay Well, Oregon State University, AHB
Mike Town, Tesla STEM High School
S**arah Burgess**, Upham Woods Outdoor Learning Center
BANR bioenergy education initiatives K-20
Sylvia Parker, University of Wyoming, BANR
John Field, Colorado State University
Doug Scribner, Newcastle High School,
Tammi Laninga, Western Washington University, NARA

10:30 - 11:00am

Track 1: Acquiring, processing, and transporting woody biomass for biofuels and co-products

Bill Quigg, Barrier West, Inc.
Experiences and lessons learned with standing up a biomass supply chain

Track 2: Economic, social and environmental issues surrounding woody biomass utilization for biofuels and value-added co-products

Season Hoard, Washington State University
A stepwise biogeophysical and social analysis approach to site selection of biorefineries

Track 3: Pretreatment and conversion for biofuels and value-added co-products

Jinwen Zhang,
Washington State University
Mechanochemical modification of lignin and application of the modified lignin for polymer materials

Track 4: Bioenergy Literacy in STEM Education

Panel Discussion: How does bioenergy literacy converge with STEM careers, economics and industry?

11:00 - 11:30am

Track 1: Acquiring, processing, and transporting woody biomass for biofuels and co-products

Rene Zamora-Cristales,
Oregon State University
Engineering and economic considerations of renewable energy production from forest residues

Track 2: Economic, social and environmental issues surrounding woody biomass utilization for biofuels and value-added co-products

Daisuke Sasatani,
University of Washington
Economic impacts of bio-refinery project in Western Washington and Oregon

Track 3: Pretreatment and conversion for biofuels and value-added co-products

Tim Smith,
University of Minnesota
Impacts of co-product operational flexibility on biofuel environmental performance

Track 4: Bioenergy Literacy in STEM Education

Panel Discussion: How does bioenergy literacy converge with STEM careers, economics and industry?

11:30 - 12:00am

Track 1: Acquiring, processing, and transporting woody biomass for biofuels and co-products

Patricia Townsend, Washington State University Extension
The Dual Benefits of Poplar in the Pacific Northwest: Sustainable feedstock and wastewater management

11:30 - 12:00am *(continued)*

Track 2: Economic, social and environmental issues surrounding woody biomass utilization for biofuels and value-added co-products

Darin Saul, University of Idaho
Evaluation of bioenergy development strategies in the Northern Rocky Mountain Forests of the Northwest

Track 3: Pretreatment and conversion for biofuels and value-added co-products

Loukas Petridis, Oak Ridge National Laboratory
Why is lignin so effective at stopping enzymes from hydrolyzing cellulose and how does heat-treatment change lignin characteristics?

Track 4: Bioenergy Literacy in STEM Education

Panel Discussion: How does bioenergy literacy converge with STEM careers, economics and industry?

12:00-1:00pm	Lunch - Salons A-C

May 4: Woody biomass to biofuel/co-products: commercialization across the supply chain – How do we go to the next step? 1:00 - 4:30pm • Evergreen Ballroom

1:00-1:20pm	**Russ Vaagen**, Vaagen Brothers Lumber, Inc
1:20-1:40pm	**Daren Daugaard**, Cool Planet *An overview of Cool Planet's strategy to produce engineered Biocarbon™ and renewable fuels*
1:40-2:00pm	**Sandy Corrion**, Cosmo Specialty Fiber *Pulp mills as feedstock providers for bio-fuels/ bio-chemicals*
2:00-2:20pm	**David Sudolsky**, Anellotech *Co-Products from a wood-based biorefinery*
2:20-3:00pm	Break
3:00-3:20pm	**Terry Brix**, S2G Biochemicals *Value-Added Green Glycols and Bio-Derivatives in the Pacific Northwest: A new sustainable industry in Washington, Oregon and Idaho*
3:20-3:40pm	**Stephanie Meyn**, Port of Seattle *Sea-Tac Airport's role in developing a Pacific Northwest aviation biofuels market*
3:40-4:00pm	**Carol Sim**, Alaska Airlines *Alaska Airlines' Biofuel Goals: The challenges of turning goals to reality*
4:00-4:45pm	*Panel Discussion with all session speakers*
4:45pm	*Final Remarks: Steering Committee*