

Biomass Program



Monthly News Blast

November 2012

November Features: Biomass Program Acting Director Valerie Reed

This month, Biomass Magazine featured the Program's Acting Director, Valerie Reed, in a piece called "The Beltway Biochemist." Biomass Magazine interviewed Dr. Reed, touching on topics ranging from the Program's goal to replace the whole barrel of oil and recent cellulosic ethanol accomplishments, to ongoing efforts at commercial biorefineries, and more. Read the full interview on [Biomass Magazine's website](#).

Dr. Reed was also in the spotlight this month as part of a new video series featuring Biomass Program staff. Watch Episode 1 of the Biomass Program Staff Spotlight Series on the [Bioenergy KDF's YouTube channel](#) to see Dr. Reed's thoughts on the future of the Biomass Program and the entire industry.

Request for Information: Carbon, Hydrogen, and Separation Efficiencies (CHASE) in Bio-Oil Conversion Pathways

The Energy Department (DOE) has issued a request for information (RFI) to garner input from researchers in industry, academia, and other interested biofuels stakeholders to identify key technical barriers in converting biomass via thermochemical direct liquefaction pathways to transportation fuels in the gasoline, diesel, and jet fuel ranges. For the purpose of this RFI, thermochemical direct liquefaction pathways include fast pyrolysis, in-situ and ex-situ catalytic

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[Webinars](#)

[Past Newsletters](#)

[Program Presentations](#)

pyrolysis, hydrolysis, hydrothermal (or solvent) liquefaction, followed by various combinations of bio-oil stabilization and upgrading processes. At a recent stakeholder workshop (“Conversion Technologies for Advanced Biofuels”) hosted by DOE’s Biomass Program, several technology deficiencies were identified that were applicable to all of these pathways:

- Developing selective fractionation and separation systems in bio-oil processing
- Improving hydrogen production, use, and transfer in biomass liquefaction and bio-oil upgrading
- Developing technologies for use and mitigation of the aqueous fraction of bio-oil.

DOE seeks information regarding the significance of these technical barriers and the resources required to address these technology deficiencies. The information provided may be used by the Biomass Program in support of Program planning. For more information, view the full RFI (DE-FOA-0000796) on the [EERE Exchange website](#).

All responses to this RFI must be delivered electronically in Microsoft Word (.doc or .docx) or PDF format as an attachment to an email sent to the [CHASE RFI email address](#) no later than 8:00 p.m. ET on December 5, 2012. Emails should have the subject line “RFI Response for CHASE Bio-Oil Pathways.”

Biomass Program to Host Webinar on Renewable Hydrocarbon Fuels

On December 12, 2012, from 3:30–4:30 p.m. ET, the Biomass Program will host a webinar, “Upgrading Renewable and Sustainable Carbohydrates for the Production of High Energy Density Fuels.” Presenters from Los Alamos National Laboratory will highlight the development of hydrocarbon fuels as renewable alternatives to petrochemical feedstocks. With decreasing global production of crude oil, it is essential for our nation to develop renewable alternatives to petrochemical feedstocks for hydrocarbon fuels. Lignocellulose is a promising carbon-neutral source of energy derived from wood, agricultural waste, and woody grasses. Researchers will discuss investigations into a potentially transformational strategy aimed at obtaining high energy density hydrocarbon fuels from non-food-based carbohydrate sources.

Please join us for an informative and insightful discussion of these critical issues. For any questions regarding the webinar, please email [Katherine Barno](#). Space is limited, so [register now to reserve your spot](#).

Program to Host Webinar on International Collaboration

On December 5, 2012, from 1:00 p.m.–2:30 p.m. ET, the Biomass Program will host a

webinar, “Global Solutions for Global Challenges: International Collaborations to Advance Bioenergy Research.” Presenters will highlight the progress of ongoing research collaborations among scientists supported by the Energy Department and researchers from China, Brazil, Canada, Finland, and other countries around the world. U.S. national laboratory scientists will discuss collaborations that hold the potential for innovations in feedstock logistics and biomass conversion technologies, which will help accelerate the commercialization of advanced biofuels.

Please join us for an informative and insightful discussion of these critical issues. For any questions regarding the webinar, please email [Andrew Graves](#). Space is limited, so [register now to reserve your spot](#).

BioBlogs

In the month of November, the [Biomass Program Blog](#) featured the National Academy of Sciences’ National Research Council’s report (NRC), [Sustainable Development of Algal Biofuels](#), which discusses the potential for an environmentally sustainable domestic algal biofuels industry. The report identifies priority areas for improving the long-term, national-scale sustainability of algal biofuels and notably finds no showstoppers. NRC hosted a webinar on November 27, 2012, to provide stakeholders with more details about the findings.

Be sure to [check out the blog](#) in the upcoming weeks to read more about the Biomass Program.

Field Testing of the Ultrasonic Algae Harvester

Algae-based fuels are a source of renewable energy and are being studied as a possible replacement fuel for all forms of transportation. While fuel from algae is nearly carbon neutral and environmentally more appealing than fossil fuels, they are currently too expensive to produce using conventional technologies. The future biofuels industry will require new technologies capable of harvesting microalgae from large-volume cultivation ponds in a low-cost, highly efficient way. Scientists at Los Alamos National Laboratory (LANL) are developing an innovative harvester based on the efficient deployment of ultrasonic fields for concentrating algae from cultivation ponds. The harvester works at select sound wave frequencies to focus and concentrate the fluid-borne cells within the device. The ultrasonic approach is rapid, leaves no toxic residues, and uses no mechanical parts that can break or foul. Lab-scale experiments completed in October 2011 showed that the technology is cost effective and energy efficient. During the past year, the team has designed and fabricated a scaled-up Ultrasonic Algae Harvester that will operate at 100 liters per hour algal culture feed rate.

Testing of the scaled-up device began in September 2012, using microalgae supplied by Solix BioSystems. LANL scientists evaluated performance of the device in more than 40 experiments that compared power input, frequency, device geometry, and other operational parameters. Another round of field-testing is planned before the project concludes in March 2013. A non-provisional patent application has been filed on the technology. The technology previously won an R&D 100 Award in 2010. The LANL team includes Babs Marrone (Team Lead), Jim Coons (Project Engineer), Taraka Dale (Project Biologist), and Dan Kalb (UNM engineering graduate student). This research was funded by the Biomass Program through the National Alliance for Advanced Biofuels and Bioproducts.

ARPA-E Innovation Summit

The [2013 ARPA-E Energy Innovation Summit](#) hosts the [Technology Showcase](#) that features breakthrough technology developments, entrepreneurs and researchers ready to collaborate, and decision makers looking to invest.

If you have a transformational energy technology, you may apply to have it featured in the ARPA-E Technology Showcase. The [deadline to apply is tomorrow, November 30, 2012](#).

Highlights from the 2012 Summit are listed below:

- 2,700 attendees from 49 states, Puerto Rico, and 26 countries
- 107 expert speakers and keynote addresses that included: Secretary of Energy Steven Chu; former President of the United States Bill Clinton; Microsoft Chairman Bill Gates; Xerox Chief Executive Officer Ursula Burns; FedEx Chief Executive Officer Fred Smith; Deputy Secretary of Defense Ashton Carter; and MIT President Susan Hockfield
- Dynamic pre-conference workshops and networking sessions that enabled participants to meet with ARPA-E Program Directors, global industry leaders, and energy technologists
- Special announcement of an ARPA-E funding opportunity worth \$150 million.

Past and Upcoming Events with Biomass Program Representation

- [Aviation Biofuels Development Conference](#); October 2–3, 2012; Zia Haq; Washington, D.C.
- [Sun Grant Initiative National Conference](#); October 2–5, 2012; John Ferrell and Bryce Stokes; New Orleans, Louisiana
- [2012 International Bioenergy and Bioproducts Conference](#); October 17–19, 2012; Zia Haq; Savannah, Georgia
- [American Institute of Chemical Engineers Annual Meeting](#); October 28–November 2,

- 2102; Paul Grabowski; Pittsburgh, Pennsylvania
- [Advanced Biofuels Markets Conference](#); October 29–31, 2012; Valerie Reed; San Francisco, California
 - [National Institute of Standards and Technology Biofuels Standards Conference](#); November 13–15, 2012; Zia Haq and Prasad Gupte, Gaithersburg, Maryland
 - [The International Energy Agency Bioenergy Conference 2012](#); November 13–15, 2012; Paul Grabowski; Vienna, Austria
 - [Global Bioenergy Partnership: Working Group on Capacity Building for Sustainable Bioenergy](#); November 15, 2012; Bryce Stokes; Rome, Italy
 - [National Advanced Biofuels Conference & Expo](#); November 27–29, 2012; Howard Marks; Houston, Texas
 - [Roadmap to Commercialize Thermochemical Biofuels and Bio-Products Processing in the Midwest Workshop](#); December 10–12, 2012; Prasad Gupte; Ames, Iowa
 - The National Alliance for Advanced Biofuels and Bioproducts 3rd Annual Meeting; January 22–25, 2013; Roxanne Dempsey; Tempe, Arizona

Upcoming Industry Events

- [BioSafe Meetings](#); December 3–4, 2012; Basel, Switzerland
- [Canadian Renewable Fuels Summit 2012](#); December 3–5, 2012; Ottawa, Ontario
- [Romania Oil & Gas Conference](#); December 4–5, 2012; Bucharest, Romania
- [European Advanced Biofuels Congress](#); December 4–5, 2012; Brussels, Belgium
- [Tank Storage Asia](#); December 11–12, 2012; Republic of Singapore
- [Renewable Energy World Conference & Expo North America](#); December 11–13, 2012; Orlando, Florida
- [BIO Asia International Conference](#); January 29–30, 2013; Tokyo, Japan

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