



Department of Energy
Washington, DC 20585



ARPA-E Applied Biotechnology for Transportation Fuels Workshop *Maximizing Photon Capture and Conversion*

Booz Allen Hamilton
3811 North Fairfax Drive, Suite 600
Arlington, VA 22203

AGENDA

Please note that the attire is casual.

Thursday, December 2, 2010

8 :30 AM - 9 :00 AM

Continental Breakfast

9 :00 AM – 9 :15 AM

Welcome and Opening Remarks

Mark Hartney
ARPA-E

Welcome, introduction to the mission areas of ARPA-E and its broader context.

9 :15 AM – 9 :30 AM

Workshop Overview and Objectives

Jonathan Burbaum
ARPA-E

Introduction to the motivation behind the workshop topic, the scope, and the goals.

9 :30 AM – 9 :45 AM

“What is the Maximum Efficiency that Photosynthesis Can Convert Solar Energy into Biomass?”

Don Ort
UIUC

Review of the factors and processes that define the upper photosynthetic efficiency limit. Opportunities and challenges in improving the theoretical and operating photosynthetic efficiencies.

9 :45 AM – 10 :00 AM

“Photosynthesis to Fuels” - Enhancing Fuel Production in Cyanobacteria and Microalgae

Tasios Melis
UC Berkeley

Review of the current status of cyanobacteria-based liquid fuel technology, future opportunities, and technological barriers.

10 :00 AM – 10 :15 AM

“What Does it Take to Feed and Fuel the World with Agriculture?”

Ganesh Kishore
Malaysian Life Sciences Capital Fund

A brief discussion of the economic barriers currently facing biofuels commercialization and opportunities and pathways towards increased competition with petrofuels.

10 :15 AM – 10 :30 AM

Coffee Break and Report to Breakout Sessions

10 :30 AM – 12 :00 PM

**BREAKOUT SESSIONS –
Technology Barriers and Opportunities**

Productive Light Absorption
Metabolic Engineering
Exploiting Evolution

Dan Robertson, chair
Tom Sharkey, chair
Roger Pennell, chair

12 :00 PM – 1 :00PM

Working Lunch- Summary of Breakout Sessions by Section Leaders, Discussion

1 :00 PM – 2 :45 PM

**EXERCISE: What Would You Do?
Design the Ideal Fuel System.**

Attendees will be divided into groups to develop their ideas and prepare for debate with other groups later in the afternoon.

2 :45 PM – 3 :00 PM

Coffee Break

3 :00 PM – 3 :30 PM

Short Presentations by Breakout Groups

3 :30 PM – 4 :30 PM

Group Discussion/debate on Presented Ideas

4 :30 PM – 5 :30 PM

Networking over Refreshments

Dinner on your own



Friday, December 3, 2010 (Optional)

8 :00 AM – 8 :30 AM

Continental Breakfast

8 :30 AM – 10 :30 AM

Preliminary Conclusions, Open Discussion

What have we learned?
What is and is not possible?
What is “evolutionary” versus “revolutionary”?
What can we do now?
How will we tell that we’ve succeeded? (metrics)

10 :30 PM – 12 :00 PM

Coffee and One-on-one Discussions