



Department of Energy
Washington, DC 20585



ARPA-E Tool Development for Transformational Biotechnology Advances Workshop

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

AGENDA

Please note that the attire is casual.

Wednesday, October 5, 2011

7:00 PM – 9 :00 PM

No-host Reception

Dan & Brad's Restaurant/Bar
Hilton Arlington
950 North Stafford St.
Arlington, VA

All attendees are welcome for informal conversations at *Dan & Brad's* in the Hilton Arlington hotel.

Thursday, October 6, 2011

8 :30 AM - 9 :00 AM

Continental Breakfast

9 :00 AM – 9 :15 AM

Welcome and Opening Remarks

Eric Toone
ARPA-E

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

9 :15 AM – 9 :40 AM

Workshop Overview and Objectives

Jonathan Burbaum
ARPA-E

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

9 :40 AM – 10 :05 AM

Overview of Plant Biology and Limitations

June Medford
Colorado State
University

Review of plant physiology, limitations, and potential opportunities to overcome challenges.

10 :05 AM – 10 :30 AM

**Overview of Current Plant
Transformation Technologies**

Neal Stewart
University of Tennessee

Review of the state-of-the-art in plant transformation technology and analysis, limitations, technological barriers, and potential future opportunities.

10 :30 AM – 10 :45 AM

Coffee Break and Report to Breakout Sessions

10 :45 AM – 12 :15 PM

**BREAKOUT SESSIONS –
Technology Barriers and Opportunities**

| | |
|--------------------------|--------------------------------|
| <i>Plant Systems</i> | David Lee, moderator |
| <i>Genetic Tools</i> | Tom Armel, moderator |
| <i>Engineering Tools</i> | Jonathan Burbaum, moderator |

12 :15 PM – 1 :00PM

**Working Lunch- Report back from Breakout
Sessions by Section Moderators, Discussion**

1 :00 PM – 2 :45 PM

**EXERCISE: Design the ideal system to rapidly
transform and screen plants**

**Host Modification – Booz room
Transformation – Allen room
Analysis – Hamilton room**

Attendees will be divided into groups to develop their ideas and prepare for discussion 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, October 7, 2011 (Optional)

8 :00 AM – 8 :30 AM

Continental Breakfast

8 :30 AM – 10 :00 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 :00 PM – 2:15 PM

Coffee and One-on-one Discussions

Morning Breakout Session: Technology Barriers and Opportunities***Plant Systems***

| | |
|---------------------|---|
| Vitaly Citovsky | State University of New York at Stony Brook |
| Sharon Doty | University of Washington |
| Richard Flavell | Ceres, Inc. |
| Mark Gultinan | Penn State University |
| David Hanson | University of New Mexico |
| Jim Haseloff | University of Cambridge |
| Maud Hinchee | ArborGen Inc. |
| Philip Lessard | Agrivida, Inc. |
| Pal Maliga | Rutgers University |
| Gail McLean | Department of Energy, Office of Basic Energy Sciences (BES) |
| Jack Okamoto | USDA Agricultural Research Service (ARS) |
| Neal Stewart | University of Tennessee |
| Stephen Streatfield | Fraunhofer USA Center for Molecular Biotechnology |
| Zeng-Yu Wang | The Noble Foundation |
| Zhanyuan Zhang | University of Missouri |

Genetic Tools

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|--------------------|--|
| David Berry | Essential, Inc. |
| Henry Daniell | University of Central Florida |
| David Jessen | Chromatin, Inc. |
| Jason Kelly | Ginkgo BioWorks |
| Zhonshen Li | DuPont |
| David McElroy | Calysta Biosystems |
| Adrienne McKee | Solazyme |
| June Medford | Colorado State University |
| Chuck Merryman | J. Craig Venter Institute |
| Yan Poon | Sapphire Energy |
| James Thomson | USDA Agricultural Research Service (ARS) |
| Feng Zhang | Collectis Plant Sciences |

EngineeringTools

| | |
|----------------|---|
| Jon Chesnut | Life Technologies |
| Mark Davis | National Renewable Energy Laboratory (NREL) |
| Bruce Ferguson | Edenspace |
| Lining Guo | Metabolon |
| Alicia Jackson | Defense Advanced Research Projects Agency (DARPA) |
| Greg Kirk | Kla-Tencor |
| Douglas Modlin | Lawrence Livermore National Laboratory (LLNL) |
| Gary Schroth | Illumina |
| Anup Singh | Joint BioEnergy Institute (JBEI) |
| Kristi Snell | Metabolix, Inc. |
| Mark Welch | DNA 2.0 |

***Afternoon breakout session groups will be announced
during lunch at the workshop***