

Metabolomics for a Low Carbon Society

PLANNING

- **Meeting in Tokyo**
November 2009
- **Workshop in Davis**
May 2010
- **JHLC Discussion**
June 2010
- **Implementing Agreement**
September 2010

SCOPE

- **Plants, microbes, algae**
- **Standards and annotation**
- **Capture of all major metabolites**
- **Specialized metabolites of potential value**

IMPLEMENTATION

- **Dear Colleague Letter**
September 2010
- **Joint Solicitation**
October 2010
- **Proposal Deadline**
February 2011
- **Joint Panel Review (NSF)**
May 2011
- **Joint Site Visit (Hawaii)**
June 2011
- **Awards and PI Meeting**
August 2011

Future Metabolomics Challenges & Opportunities!

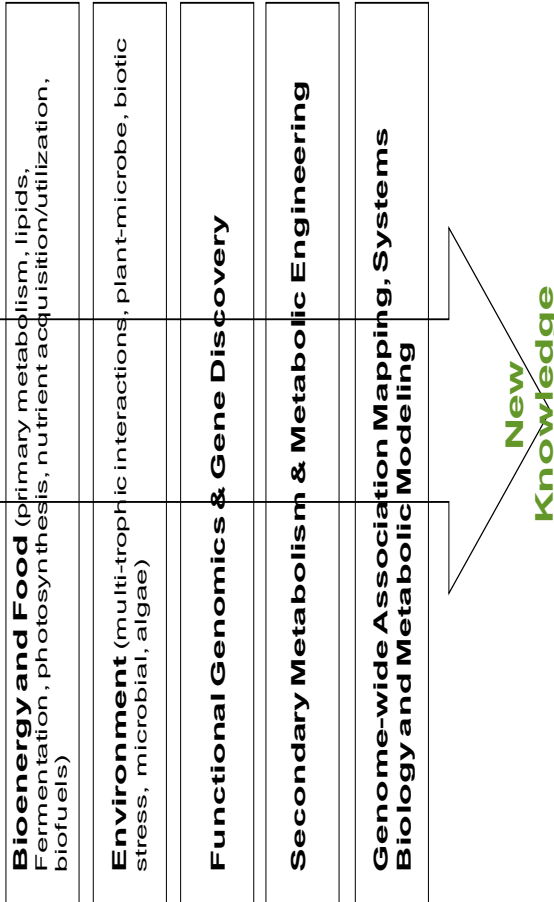
Synergistic Biological Areas

Technology Development

Greater metabolite identification
 Spatially resolved sampling
 Increased dynamic range
 Increased depth-of-coverage

Community Database(s) & Informatics Tool Development

Lower cost
 Usable by non-experts
 Relatively high throughput
 Data comparable across laboratories and studies



- One competition in FY 2011
- Three-year awards with potential for 2-year extension
- \$6 million from JST
- \$6 million from NSF
 - \$3 million from IOS
 - \$3 million from MCB
- Four projects @ \$0.5m/yr for 3 yrs
- RCN to coordinate all international projects

Future Opportunities for NSF BIO :

- Bio-prospecting
- Bio-inspired materials
- Environmental sampling
- Metabolic modeling
- Metabolic engineering
- Other organisms

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Bioenergy and Food (primary metabolism, lipids, Fermentation, photosynthesis, nutrient acquisition/utilization, biofuels)

Environment (multi-trophic interactions, plant-microbe, biotic stress, microbial, algae)

Functional Genomics & Gene Discovery

Secondary Metabolism & Metabolic Engineering

Genome-wide Association Mapping, Systems Biology and Metabolic Modeling

New Knowledge