

Framing issues & introductory remarks

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Welcome!



BIOENERGY SUSTAINABILITY CONFERENCE

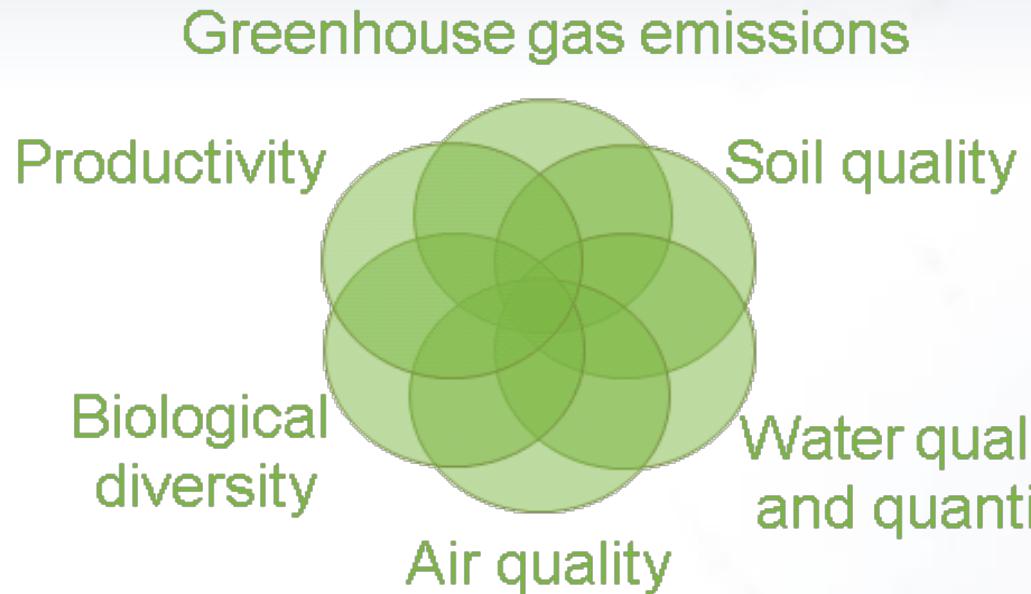
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Objectives – discuss recent research advances and –

- **What are the key challenges to more sustainable bioenergy?**
- **How is “sustainability” defined in your program?**
 - Research priorities
 - Specific work underway
- **Path forward**
 - Lessons learned from failures
 - Challenges of junk science
 - Terminology & definitions matter

Bioenergy sustainability indicators

(12 categories of 35 indicators)



McBride et al. (2011)
Ecological Indicators
11:1277-1289



Dale et al. (2013)
Ecological Indicators
26:87-102.

Recognize that measures and interpretations are context-specific

Efroymson et al. (2013) *Environmental Management* 51:291-306.

Engage stakeholders and local communities in process



Dale, Kline, Parish, Eichler (2019)
Landscape Ecology 34: 1199-1218.

Analysis and Sustainability

Strategic Goal: *Develop science-based strategies to understand and enhance the economic, social, and environmental benefits of advanced bioenergy relative to conventional energy systems.*

Approaches:

- Develop and maintain analytical tools, models, methods, and datasets to support science-based quantification and improved decision-making.
- Ensure high-quality, transparent, reproducible, peer-reviewed analyses.
- Explore the impact of emerging opportunities and identify R&D needs and critical metrics to enable new ideas.
- Develop sustainable system designs that increase bioenergy production while enhancing economic, social, and environmental outcomes.
- Ensure broad engagement with stakeholders.



Enhancing the Economic, Social, and Environmental Benefits of a Growing U.S.

Great program coming up --
Thank you!



<http://www.ornl.gov/sci/ees/cbes/>



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