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Conference continues debate on biofuels economy

By: Kathy Hanson , Special to The Tribune

Corn may be king of the current biofuels economy, but experts at the 2008 Biobased Industry Conference hosted this week at Iowa State University continue to debate the place of other feedstocks and nonfood crops in sustainable practices.

When it comes to competing theories and data about the roles of various types of plant-based fuels in replacing petroleum and reducing greenhouse gases, balancing the demands of feeding the world's burgeoning population with its appetite for energy raises the stakes for producing, processing marketing and transporting environmentally green biofuels without diverting land from food crops.

The robust debate is just what Iowa State needs to take the lead on the world stage in biorenewable research, according to Monday's point/counterpoint plenary session moderator, Robert C. Brown.

Brown is ISU's Anson Marston distinguished professor, Iowa Farm Bureau Bioeconomy Institute director and director of the Center for Sustainable Environmental Technologies.

Brown said concerns that biofuels divert crops and land from food production, encourage destruction of natural ecoystems in the developing world and exacerbate greenhouse gas emissions have "escalated into charges that biofuels are both a crime against humanity and an environmental disaster."

Whether you agree or disagree with these assessments, Brown said, "they must be addressed, and if biofuels are found wanting, something must be done about it. It is our responsibility as scientists and engineers to make sure that technologies developed in the service of today's society do not compromise the livelihoods of future generations."

According to Brown, the issues raised at Monday's plenary session showcased the Bioeconomy Institutes' strategic plan to advance the use of biorenewable resources for the production of chemicals, fuel, materials and energy, while moving toward economic, environmental and social sustainability."

Brown said ISU's biorenewable initiatives such as the recently announced National Science Foundation Engineering Research Center in Biorenewable Chemicals; the College of Agriculture and Life Science's New Century Farm, and the new Biobased Industries Center, will address the "critical business and policy issues facing the emerging bioeconomy."

"Our scholarship in biorenewables will not be satisfied with merely pointing out shortcomings of current theories and practices," he said. "That's the easy part. Our intent is to offer new paradigms and approaches that contribute to the successful emergence of a sustainable bioeconomy."

In the course of the debate, science foundation program director John R. Regalbuto pointed out the role of benchmarks set by the U.S. Energy Independence and Security Act in driving research toward biorenewable fuels.

Increasing production and use of renewable fuels to 36 billion gallons by 2022 with a 15 billion cap on corn ethanol puts pressure on the public and private sectors to perfect production-to-market-to-consumer processes for a variety of feedstocks and nonfood crops, he said.

Aggressive funding for research is critical to moving the biofuel economy forward, according to Charles Wyman,

the Ford Motor Company chair in Environmental Engineering a the University of California at Riverside. "But the challenge is overcoming the perceived risk while we get the learning curve up," he said.

Government subsidies are not the preferred underwriting route. "Investors see subsidies as risky," he said. "They don't trust Congress to be reliable."

Monday's four-hour point/counterpoint debate focused on the merits and shortfalls of types of biomass conversion to fuel; use of corn and other feedstock plants as biofuel sources versus polycultures and perennials; and mitigating global climate change through land use.

According to Brown, ISUs' multidisciplinary systems approach to research will take all theories and practices into account, even the deconstructed ones, until their implications for decisions can be studied.