



# Checking in with CenUSA

## *Sustainable Production and Distribution of Bioenergy for the Central US*

CenUSA Bioenergy is a multidisciplinary project funded by the U.S. Department of Agriculture National Institute of Food and Agriculture (USDA-NIFA Initiative Competitive Grant No. 2011-68005-30411 ). CenUSA's goal is to research the production and use of perennial grasses on marginal lands for use as alternative biofuels and bioproducts. More information is available at [www.cenusa.iastate.edu](http://www.cenusa.iastate.edu).

**Kenneth “Ken” Moore**,<sup>1</sup> Ken Moore, Charles F. Curtiss Distinguished Professor in Agriculture and Life Sciences and Pioneer Hi-Bred Agronomy Professor in Agronomy, has been the CenUSA Bioenergy Project Director since the project's inception in August 2011. Moore was approached to be the CenUSA Bioenergy Project Director due to his agronomy background and his previous administrative experiences with various scientific research projects and professional societies. Much of the nature of his leadership role and the responsibilities of his position revolved around communicating the needs and requests of the USDA to the co-project leaders and advisory board members. He served as a liaison between the various elements of the project to ensure that CenUSA faithfully followed USDA-NIFA's vision for the project.

In spite of various complications like budgetary challenges and a lack of current commercialization opportunities for switchgrass, Moore believes that CenUSA was able to accomplish a lot over the years. The project proved the economic feasibility of growing switchgrass on marginal soils, found new ways to utilize bioproducts, made advancements in the field of plant breeding and so on. Moore holds that the successes of the project are a foundation upon which to expand further research and from which this country will know how to successfully use switchgrass and other perennial grasses as an alternative transportation biofuel when the time comes.



*“I think that we demonstrated that it is feasible to produce bioenergy feedstocks from native perennial grasses that are grown on land that isn't particularly productive for growing row crops like corn or soybeans.” Ken Moore*

In July 2019, Dr. Moore spoke about his work and involvement with CenUSA in the areas of feedstock development and sustainable feedstock production systems with CenUSA Communications Tyler Worsham.<sup>2</sup>

<sup>1</sup> Learn more about Ken Moore at <https://www.agron.iastate.edu/people/kenneth-moore>

<sup>2</sup> All of the words and ideas expressed in this interview fairly and accurately represent the speaker. Some quotes may be paraphrased for brevity and clarity. The opinions expressed in herein do not necessarily reflect those of Iowa State University, USDA-NIFA, Purdue University, Ohio State University, USDA-ARS, the University of Minnesota, the University of Nebraska, Lincoln, the University of Vermont, or the University of Wisconsin.

### **How did you get involved with the CenUSA project?**

"CenUSA was the result of two independent teams merging their efforts. I had been asked to participate in both projects, so I was aware of what both teams were preparing to do. It occurred to me that neither project addressed all of the goals expressed in the Request for Application, but they could be a formidable project together. I brought this to the attention to the leaders of both teams, Ken Vogel in Nebraska, who was focusing more on the feedstock side, and Robert Brown in Iowa, who was focused on the conversion side.

That eventually led them to ask me to assume a leadership role. At the time I was asked, I misunderstood the question. I thought they were just asking me to lead a part of CenUSA related to agronomy. As it turned out, I became the project director and assumed that leadership role for the entire project."

### **What about you and your professional background made you the best choice for the role of the CenUSA project director?**

"I would say that I was a 'good' choice given the circumstances. I had served as the president of two different scientific societies and had a lot of experience working with people from different audiences and backgrounds. The project needed someone to promote its vision and to take care of their administrative needs. I knew a lot of the people involved because I had previously worked with many of them. We had the mutual trust that we needed to work together in a large team."

### **Could you go into further detail about your professional background? If you worked on any other projects as the project director or otherwise, what did you do, and how did it differ from CenUSA?**

"Well, I have a lot of experience leading research projects in my career, but nothing of the size and scale of CenUSA. I have, however, been the research leader for a number of smaller projects. With respect to this project, the leadership skills that I needed were not necessarily related to research, but rather in administration. I have been involved in professional societies, served on the board of directors and have been the president of two societies, so I have this experience working with people across a broad array of disciplines, backgrounds and experiences. I was able to work with all of them to achieve a common goal, so I think that was what was needed in a director for CenUSA. I think that's what I brought to the table."

### **What were some of the unique experiences and responsibilities of being Project Director that perhaps the co-PIS, the advisory board members and others involved with the project didn't have?**

"As the director, I worked directly with both CenUSA personnel and our advisory board, and it was my responsibility to manage these relationships. Working with the sponsor was extremely challenging and



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rewarding. There were so many occasions where we had to respond to unanticipated requests.

We developed four budgets over five years, each one resulting in a reduction of funds available to each co-PD. As you can imagine, some were quite reluctant to engage in this process, but on the whole, most were extremely gracious and helpful as we scrambled to meet yet another request from USDA. Working with the advisory board turned out to be the most rewarding aspect of my experience with USDA. We had so many excellent people serving on the board who were committed to helping us succeed. They critiqued our work in the most positive way and helped keep our activities aligned with the vision of the project.”

**What were some of the anticipated and unforeseen obstacles that were unique to your role as Project Director?**

“When we began the project, it was an entirely different economic environment than the one under which we operated for most of the time that we worked on the project. We proposed a system that made a lot of sense when corn prices were extremely high. There was a lot of potential for developing fuels from cellulosic biomass, but then the bottom fell out of the corn market. You could make ethanol with corn very inexpensively compared to what we were proposing, so it sort of took the wind out of our sails.”


**How did the project broaden and challenge your professional knowledge and skill set?**

“I think that to be successful, we all needed to be flexible and willing to adapt in response to changes that were imposed on us by the sponsor and by the economic environment. The basic principles and operating parameters under which we started changed. Even though some of our goals remained important and fixed relating to environmental services, we really had to scramble to deal with the economic side. Had the corn market stayed the way it was in terms of cost of producing ethanol, we would have likely achieved much greater success at penetrating the market with cellulosic biofuels. Given that this didn’t happen, a lot of the work that we did is going to be dormant until the price of corn increases again.

I also had some experience working with people from different disciplines and had to learn some of the different language that they use, so it was interesting to try to bring those people together and try to help them understand each other. I think that was challenging. In a way, it was kind of like being an interpreter. We had to develop a common language in order to interact with each other.”

**Language has different meanings depending on your background.**

“Exactly. Fortunately, I had experience with that. Once we overcame those obstacles, the team really worked well together across disciplines. It was quite extraordinary.”



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**What were some of the unique experiences and responsibilities of being Project Director that perhaps the co-project directors, the advisory board members and others involved with the project didn't have?**

“As the director, I directly interfaced with both USDA-NIFA and our advisory board, and it was my responsibility to manage these relationships. My responsibility to the project was administrative in nature. My job was to make each team member’s job easier, so I was responsible for dealing with the granting agency USDA-NIFA, and I was also the direct liaison with the advisory board. I spent a lot of time on those activities, and as it turned out, dealing with the administrative requests from USDA was almost a full-time job.

In my previous experience, you wrote a grant proposal, it was funded, and the budget was largely set. Nobody involved would be tinkering with your objectives and trying to direct your outcomes. That was not the case with this project. USDA-NIFA was pretty demanding in how they redirected our goals as we went along. Of course, whenever you do that, you have to adjust the budgets that follow. There were so many occasions when we had to respond to unanticipated requests. We developed four budgets over five years, each one resulting in a reduction of funds available to each co-PD. They wanted us to do different things, but they couldn't give us the extra funding to do those things. This forced us to re-budget.

As you can imagine, some team leaders were quite reluctant to engage in this process, but on the whole, most were extremely gracious and helpful as we scrambled to meet more requests from USDA. That took a lot of time and effort. I had to work with people who had to give up funds to make that possible. That was challenging, but it was also rewarding in the sense that we had a much better project for having made those changes.

Working with the advisory board turned out to be the most rewarding aspect of my experience with CenUSA. We had so many excellent people serving on the board who were committed to helping us succeed. They critiqued our work in the most positive way and helped keep our activities aligned with the vision of the project.

We had a lot of interaction with Bill Goldner and others at NIFA who really tried to keep us relevant to the changing situation in the world. It was very challenging, but also very rewarding. The advisory board was a gift. We had a great team that really engaged with us and provided great insights and critiques of our work that helped us achieve more than what we would have without their advice and assistance. Some of them actually provided material assistance as well. I didn't anticipate that going in, and that was extremely rewarding for me.”

**I got the impression from the advisory board members that they kept the perspectives of the researchers grounded.**



CenUSA White Paper

“Yes, they did. They asked the hard questions, and I think that was absolutely essential. They provided the grounding for the project, and they did that in a very constructive and friendly way. There was the potential for contention not only between the board members themselves, given that they were all from different areas, but also with the researchers and educators, and very little of that happened. I don’t know how else to describe it in any other way.”

**You mentioned your experience working with people from USDA, with the advisory board members and the co-PDs. I'm aware that there are others with whom you also worked closely on the project. Could you elaborate on the capacity to which you worked with those who were not among the co-PDs and advisory board members?**

Thank you for asking this question. There were so many people working behind the scenes to make the project successful. Anne Kinzel became the associate director soon after the project was funded and stayed with it throughout. She played a key role in keeping the project on track and also in managing our relationships with USDA and the Advisory Board. She was so essential to the project’s success that I can honestly say that it would not have been possible to manage without her.

There were others on the administrative team whose contributions need to be acknowledged as well. Diane Meyer was the grant coordinator at the Bioeconomy Institute who assisted us with the original grant application. There would have never been a project without her extraordinary effort in pulling together all of the documents and budgets required for the application. She even pulled an ‘all-nighter’ in order to get the application done.

Becky Staedtler oversaw the budget for most of the project. It was a huge job in that we were undergoing perpetual re-budgeting. Valerie Evans became our budget manager and did an extraordinary job managing the transactions and attending to the details involved. When she moved to another position, Jill Cornelius replaced her and likewise did a fantastic job. When Becky retired, Mary Scott-Hall became the budget director for BEI and oversaw the closeout of the project financials. I am truly grateful to have been able to work with all of these people and I am greatly pleased to acknowledge their contributions to CenUSA’s success.”

**What is the most noteworthy or most interesting facet of your work that you would like the interested members of the general public to understand?**

“I would like for people to understand that the project was led by a lot of people. Just because I was Project Director doesn’t mean that leading the project wasn’t a team effort. There were a lot of people involved in that. The co-project directors who led the objective areas really deserve credit for leading their teams and for the successes that those teams achieved. My role was to help them be successful at leading their teams.

I don’t think people understand how large and complex these projects are and how many people they involve. We had well over 100 people, so partitioning the success was difficult because it really depends on so many people being willing to work together and help each other to do so many different things to achieve our goals. I don’t think people have any idea how complicated it is.”

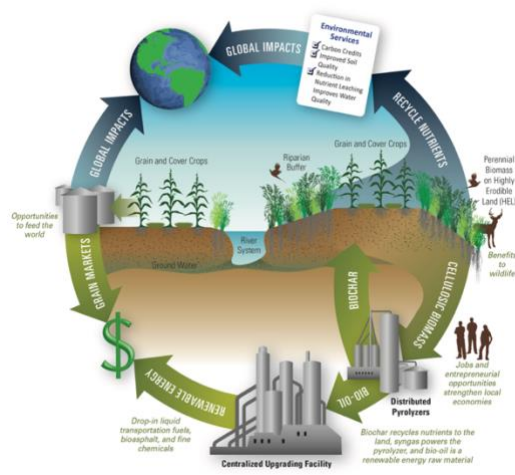
**What do you currently hope will happen as a result of what CenUSA has been able to accomplish?**

“Well, I think that a lot of good things have come out of CenUSA. Certainly there are all of the deliverables that you anticipate, all of the journal articles, popular press articles, Extension bulletins, the videos and educational products. All of that stuff is and will continue to have a strong impact. I think that we demonstrated that it is feasible to produce bioenergy feedstocks from native perennial grasses that are grown on land that isn’t particularly productive for growing row crops like corn or soybeans. We closed the gap, but we still didn’t quite achieve economic success. We closed the gap to around \$20-to-\$25, so that is the next frontier, but it really isn’t that much of a change in commodity prices to make cellulosic biofuels more attractive. When that happens, or if we can close that gap with more research, everything we did in our research is going to pay off significantly.

We also had a lot of successes within each of the individual disciplines. I’m sure that the objective area leaders talked to you about what they accomplished. Rob Mitchell told me that they advanced the science of switchgrass production by 25 years. That’s a huge statement. Mike Casler in plant breeding was able to accomplish so much with the resources available to his team. He accomplished a lot of incredible things. ‘Liberty,’ a switchgrass variety for bioenergy, was finally released under CenUSA. All of the teams made scientific advances that will stand for a long time.”

**In what new directions do you hope to take your own work after CenUSA?**

“I’m currently focused on things that are tangentially related. We want to expand into new directions in perennial groundcover systems for corn and soybean production. We want to increase the land area under perennial groundcover, and one way to do that is with the approach we took with CenUSA by putting marginal land into perennial energy crops. The next steps are to focus on land that isn’t marginal that would otherwise be used for corn and soybean production and to find ways to farm it more sustainably. One of the ways to do that is to increase the amount of cover throughout the year that is present on the land, so we will continue to work with perennial groundcovers in order to do that. We’ve been reasonably successful and will continue to expand our efforts to develop that system.”



CenUSA Bioenergy Vision  
 Learn more at [www.cenusa.iastate.edu](http://www.cenusa.iastate.edu)