BP Initiative Fueled by C-FAR Research

In February, the energy company BP announced that the University of Illinois at Urbana-Champaign (UIUC), University of California, Berkeley, and Lawrence Berkeley National Laboratory had been selected to partner in a $500 million research program. The newly established Energy Biosciences Institute (EBI) will focus on exploring how biocience can be used to increase energy production and reduce the impact of energy consumption on the environment. Illinois will receive about $100 million over the next 10 years to conduct its portion of the research.

Approximately 340 acres of farmland on the UIUC campus will be devoted to the study and production of feedstock for biofuel production. Researchers will explore the potential benefits of using corn crop residues, Miscanthus, switchgrass, and other herbaceous perennials as fuel sources. The initiative will explore how adequate supplies of high-quality plant biomass can be sustainably produced and utilized in facilities that convert biomass to fuels.

C-FAR-funded research on biomass energy crops was instrumental in bringing the large-scale bioenergy research initiative to Illinois. “Our C-FAR research was a major factor in BP locating a significant portion of its new EBI in Illinois,” said Dr. Stephen Long, UIUC professor of crop sciences and plant biology. “The BP initiative will allow industry development around fuels made from cellulose to compliment the nation’s production of corn ethanol and soy diesel.”

In 2003, the C-FAR membership launched a five-year strategic research initiative (SRI) focused on biomass energy crops. The SRI laid the foundation for Illinois to be a partner in the EBI. “Through the C-FAR SRI, a multidisciplinary research team was already in place, and it has made significant progress in studying the molecular biology, economics, and social acceptability of bioenergy crops,” said Long. “In addition, our research team has demonstrated that Miscanthus, a high-yielding, low-input perennial grass, is very productive and well-suited as a biofuel crop, and agronomy trials have been established across the state.”

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CONTINUED ON PAGE 3
Greetings

The Dynamic: Working Groups

I do not know who among our organization’s founders felt the term “working groups” was most appropriate for C-FAR, but their foresight was right on target. In its most literal sense, it suggests groups of people working together for a common purpose. Our working groups directly employ our ability to address a critical segment of our mission statement: fostering public participation in program guidance.

C-FAR very seriously embraces this aspect of our mission. We often state that “Working groups are C-FAR’s foundation.” Indeed, they are.

The working groups’ vibrancy—and that of our research portfolio—rests directly on the degree to which our membership engages in working group meetings and related activities. In early March, I had the benefit of sitting with each of our working groups as they met in Champaign to review and prioritize for funding proposals submitted to the FY08 External Competitive Grants Program. For those of us who have been affiliated with C-FAR for several years, we may at times undervalue the pure dynamic of our working group process. We shouldn’t, because it is a highly valuable mechanism, and we must continue striving to ensure full participation.

I use the word “dynamic” very intentionally [dy-nam·ic (di-nam’ik) adj. Characterized by or tending to produce continuous change or advance]. I do so because at these working group meetings, I observe research proposal discussions, deliberations, and decisions soundly based on meaningful contributions from industry professionals who rely on research-based developments for their everyday operations and businesses. That is what our working groups are about—the bringing together of various professional interests to strategically guide our state’s research investments to achieve a portfolio that meets Illinois’ need and opportunities.

“Call it an Illinois advantage—as we know of no other state which so meaningfully engages this degree of public participation in its food and agricultural research programs. Let us continue to seize this advantage to its fullest extent. Its dynamic rests with you—our membership—to be engaged.”

Kraig A. Wagenecht
Executive Administrator
While the BP initiative has an international focus, it will allow researchers to enhance research already underway in Illinois to develop cleaner, renewable bio-based fuels. Larger-scale trials, enhanced plant-breeding programs, intensified genetic engineering, and improvements to planting and harvesting equipment will result from this added investment. Researchers will be able to ramp up the development of preprocessing and downstream processing technologies, such as those necessary for digesting and fermenting the biomass. They also will define the large-scale carbon balance of the system and determine the appropriate carbon credits due to participating farmers.

Illinois’ portion of the EBI will be housed in the Institute for Genomic Biology located on the UIUC campus. Officially opened this March, the institute was established to advance life science research and to stimulate bioeconomic development in Illinois. The new facility is a state-of-the-art open laboratory designed to bring together scientists from multiple disciplines in cutting-edge research to address major questions facing science and society.

Given the significant potential impact of the large-scale production of biomass fuels, this area of research has received much national and international consideration. “Using existing technology and 10 percent of Midwestern farmland, it has been estimated that the production of cellulosic ethanol from Miscanthus could replace a third of our nation’s gasoline use,” said Long. “This potential has put our research on the radar of major energy companies, and it has also attracted the attention of our nation’s leaders.”

“I have had the pleasure of being affiliated with C-FAR since its inception, and this is the most sterling example of C-FAR research being successfully leveraged for the greater good of all citizens in Illinois,” said Larry Fischer, C-FAR board member. “The immense value of our partnerships could not be more evident, and for this we all should be very proud!”
MarketMaker: Making Connections in Illinois and Beyond

The MarketMaker interactive website is not only connecting Illinois producers, processors, retailers, consumers, and other food supply chain participants; it is reaching out across the country to make these connections in other states. An innovative outgrowth of C-FAR research exploring market opportunities for value-added meat products, the interactive website currently provides over 82,000 profiles of farmers and other food-related enterprises in Illinois, Iowa, Nebraska, and Kentucky. New York is also joining the MarketMaker network and expects to launch its new site this spring. Mississippi and Georgia will be the next state MarketMaker sites developed after New York; Michigan and Indiana have recently announced plans to join the network, and nearly a dozen additional states including the University of the District of Columbia are considering joining as well.

“MarketMaker began as an online database of Illinois businesses. It was so successful that now other states have joined the effort,” said Darlene Knipe, University of Illinois Extension specialist and a co-developer of the site. “A multistate partnership of land grant institutions and state agricultural agencies has formed to build a national network of interconnected MarketMaker sites. Each partner state has its own unique site, but all sites access a common database.”

MarketMaker serves as a resource for consumers and for all businesses in the food supply chain. Consumers can query the website to find food-related businesses, including restaurants, wineries, farmers markets, specialty food stores, fish markets, apple orchards, blueberry farms, and more. Farmers use the site to find food processors and retailers for their products. The website also benefits food processors and retailers by providing them with a mechanism to locate potential food suppliers, including grain and livestock producers, dairy farms, fruit and vegetable growers, etc.

“We are as interested in helping a grocery store find farm-fresh eggs as we are in helping the farm find a place to sell them,” said Knipe.

A search tool on the website allows businesses to investigate new markets by viewing demographic and census data. For example, a producer wanting to sell specialty meats to consumers of certain demographics can request a map showing where the greatest concentrations of these households are located. Grocery stores currently serving those neighborhoods can also be located. This mapping function allows businesses to visualize concentrations of consumer markets and locate potential strategic business partners.

“MarketMaker is a great resource. It improved our understanding of food marketing and provided us with better access to regional markets as we initiated our Illinois Crown Beef products,” said Jeanne Harland, Illinois beef producer and C-FAR human nutrition and food safety working group chair. “The first time we stood in front of the meat case in a Chicago area store and saw beef that had been raised on one of our farms, it was an awesome experience.”

“MarketMaker is a true C-FAR success story. Without C-FAR’s support, none of this would have happened,” said Knipe.

MarketMaker, established with support from C-FAR, is a collaborative initiative among the University of Illinois Extension, the University of Illinois Initiative for the Development of Entrepreneurs in Agriculture (IDEA), and the Illinois Department of Agriculture.

“The first time we stood in front of the meat case in a Chicago area store and saw beef that had been raised on one of our farms, it was an awesome experience.”
University of Illinois at Urbana-Champaign (UIUC) researchers have shown that tomatoes and broccoli, eaten in combination, may be an effective dietary treatment for slowing prostate cancer growth. Using a laboratory rat model, researchers have demonstrated that the two foods, which are known for their cancer-fighting qualities, curtail tumor growth more effectively when consumed together. “When tomatoes and broccoli are eaten together, we see an additive effect. We think it’s because different bioactive compounds in each food work on different anticancer pathways,” said John Erdman, a professor of food science and human nutrition.

This study builds on C-FAR-funded research and on other research examining cancer-fighting agents found in broccoli and other cruciferous vegetables, led by Dr. Elizabeth Jeffery, also a professor of food science and human nutrition. “For ten years, I’ve been learning how the phytochemicals in tomatoes affect the progression of prostate cancer. Meanwhile, Dr. Jeffery has been investigating the ways in which the healthful effects of broccoli are produced. Teaming up to see how these vegetables worked together just made sense, and it certainly contributes to our knowledge about dietary treatments for prostate cancer,” said Erdman.

Erdman and doctoral candidate Kirstie Canene-Adams fed a diet containing 10 percent whole tomato powder and 10 percent whole broccoli powder to laboratory rats given prostate cancer. Other rats were fed either the tomato powder or broccoli powder; given lycopene, a component of tomatoes thought to prevent cancer; given finasteride, a drug prescribed for men with enlarged prostates; or castrated. After 22 weeks, it was determined that feeding the rats the tomato/broccoli powder was the most effective treatment in reducing the size of prostate tumors. “The only treatment that approached the tomato/broccoli diet’s level of effectiveness was castration,” said Erdman.

Erdman’s success in this area has led to a new C-FAR-funded project focused on examining the combined consumption of tomatoes and broccoli to reduce prostate cancer in Illinois African-American men. “Through this new initiative we want to increase prostate cancer awareness, especially in the Chicago area and among African-American men, who have the highest known rate of prostate cancer. We are looking to enhance screenings, develop research-based recommendations for the consumption of vegetables and vegetable combinations, develop continuing education for health professionals, and increase the availability of these cancer-preventive vegetable foods to Illinois consumers.”

“The timely funding by C-FAR will allow our research team to continue our laboratory-based research to pinpoint the components of tomatoes and broccoli that reduce the growth of prostate tumors, and to help educate African-American men in the State of Illinois about healthy lifestyle practices that should lower their risk of developing prostate cancer,” said Erdman.

Prostate cancer is the second leading cause of cancer death in American men. The American Cancer Society estimates that during 2007 about 218,890 new cases of prostate cancer will be diagnosed in the United States. Prostate cancer accounts for about 10 percent of cancer-related deaths in men.

“The good news this research brings is that it is so easy to include these colorful and delicious foods in our meals and snacks that not only can people enjoy eating them, but they can also decrease their risk of serious health problems such as prostate cancer,” said Karen Little, C-FAR board member and registered dietitian. “They taste good, and they cost a lot less and carry less risk than prescription drugs or surgery. They can help maintain human bodies in a vibrant state of health. This research really emphasizes the healthfulness of including plenty of vegetables and fruits in our diet!”

Vegetables Teamed Up to Fight Prostate Cancer

JOHN ERDMAN, UIUC PROFESSOR OF FOOD SCIENCE AND HUMAN NUTRITION, AND DOCTORAL CANDIDATE KIRSTIE CANENE-ADAMS ARE STUDYING THE COMBINED CONSUMPTION OF TOMATOES AND BROCCOLI TO SLOW PROSTATE CANCER GROWTH.
C-FAR Working Groups: Addressing Illinois’ Research Needs and Opportunities

The Illinois Council on Food and Agricultural Research (C-FAR) was established with a two-fold mission. First, it was considered imperative to increase public funding for high-impact food and agricultural research in Illinois. Second, the value of increasing stakeholder input into guiding this research was clearly recognized. “C-FAR’s objectives are intentionally very distinct and equally critical to our state,” said Alan Puzey, chairman of the board.

To benefit from its broad-based membership, C-FAR established working groups that focus on five general research areas: expanding agricultural markets, rural economic development, agricultural production systems, human nutrition and food safety, and natural resources and environment. These working groups allow stakeholders from very diverse professions to come together to share their unique experiences and provide input on the research needs and opportunities of Illinois’ food and agricultural industry and related sectors.

“Our working groups are an immeasurable asset in the continued review and development of our state’s research portfolio. They are a respected partner with our universities and related research-based entities. Prior to C-FAR working groups, there was a disconnect between publicly-funded research and our industry,” said Puzey.

Every C-FAR member, from Organizational member to Individual member, has the opportunity and is strongly encouraged to participate in C-FAR’s working group process. An Organizational or Affiliate member can appoint a representative to participate in each of the five working groups. Individual members can choose which working group they would like to engage in. The working groups meet during the year to address issues and make decisions that are necessary for upholding the intent of the organization: from establishing research priorities and providing this information to the Illinois’ research community to selecting projects funded through the External Competitive Grants Program to reviewing completed research to ensure that maximum value is being obtained from each research investment.

“We are extremely proud that C-FAR members can be afforded the opportunity and responsibility of guiding our state’s food and agricultural research programs through our working groups,” said Jim Charlesworth, board member and membership chair. “It is a very high calling that deserves the greatest consideration of our membership.”

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Meet Your New C-FAR Leaders

At C-FAR’s annual meeting in February, Jim Charlesworth and Jerry Hicks were newly elected to serve on the C-FAR Board of Directors. Both of these individuals have a long history of dedication and commitment to C-FAR and Illinois’ food and agricultural industry. “We are extremely pleased to welcome Jim and Jerry to the board,” said Alan Puzey, chairman. “Their vast professional and related association experiences will be a tremendous asset to our organization during their tenure of board service.”

Jim Charlesworth was raised on a grain and livestock farm near Belvidere in Boone County. He is the marketing research director for GROWMARK, Inc. Jim has been actively engaged in agribusiness research and marketing for over 35 years.

Jim has served as president of the Central Illinois Chapter of the American Marketing Association. He was awarded their Lifetime Achievement Award in 2006. He has chaired the Agribusiness Marketing Research Conference and the United Way Campaign Steering Committee, and he has participated in the Growmark Volunteer Network.

Jim currently serves on the Bloomington Public Library Board of Trustees, the Bloomington Public Library Foundation Board, and on the Children’s Foundation Marketing Committee. He is active with the McLean County Agriculture Club. Jim and his wife Betty have four children and live in Bloomington. “I look forward to the opportunity to serve as a member of the C-FAR leadership team,” said Charlesworth.

Jerry Hicks was raised on a grain and livestock farm near Belvidere in Boone County. Following graduation from the University of Illinois, Jerry was a county advisor for the University of Illinois Cooperative Extension Service. He was executive vice president of the Illinois Pork Producers Association in the early 1980s. This was followed by 18 years as a farm manager at the First National Bank of Springfield. Jerry now co-owns and operates Agrivest, Inc., a farm management and real estate sales company.

Jerry provides leadership to the Illinois Society of Professional Farm Managers and Rural Appraisers as immediate past president. He also serves on the American Society of Farm Managers and Rural Appraisers Government Relations Committee. For six years, he was on University of Illinois Cooperative Extension State Advisory Board.

Jerry served as a 4-H leader for over 20 years. He currently is a member of the Pleasant Plains School Board. Jerry and his wife Jill have three children and live in New Berlin. “Illinois agriculture needs and deserves a larger investment in agricultural research. I look forward to working with my fellow C-FAR board members and the C-FAR membership to get this message out,” said Hicks.

Websites to Watch

C-FAR
www.ilcfar.org
Your headquarters for C-FAR news and information on funded and completed research.

NAT TOOLS FOR GOOD HEALTH
nat.crgq.com
A source for analyzing diet and food choices.

ILLINOIS CENTER FOR SOY FOODS
www.soyfoodsillinois.uiuc.edu
A resource for consumers on soy foods and nutrition.

FARM.DOC
www.farmdoc.uiuc.edu
Provides producers and other agricultural professionals with decision-making information and analysis tools.

MARKETMAKER
www.marketmaker.uiuc.edu
An interactive mapping system that locates businesses and markets of agricultural products in Illinois, which provides an important link between producers and consumers.

ALTERNATIVE CROPS FOR ILLINOIS
www.sws.uiuc.edu/data/altcrops
Helps producers identify and find information on potential alternative crops.

ILLINOIS IPM ONLINE
www.ipm.uiuc.edu
An environment for learning about integrated pest management.

ILLINOIS WATERSHED MANAGEMENT CLEARINGHOUSE
www.watershed.uiuc.edu
Helps groups create and implement a plan to address local watershed issues.

ILLINOIS TRAILL
www.traill.uiuc.edu
Organizes livestock research, information, and expert services.
calendar

2007

July 11  Board of Directors Meeting
September 12 Board of Directors Meeting
November 7  Board of Directors Meeting
November  C-FAR Day at Illinois State University

Please call the C-FAR office or check the calendar on the C-FAR website at www.ilfar.org for further details.