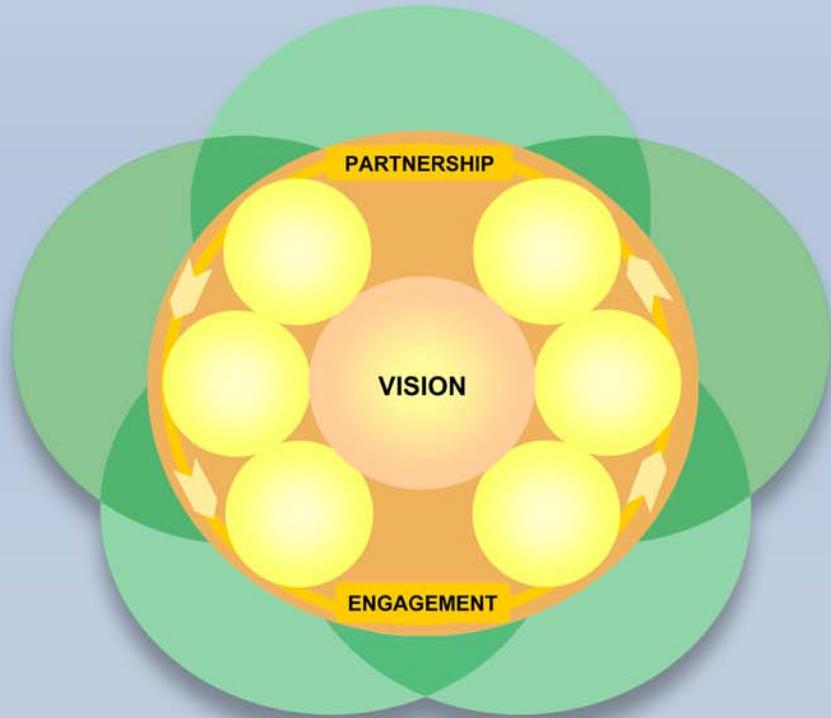




EERE-NASULGC PARTNERSHIP EXECUTIVE STEERING COMMITTEE MEETING



WASHINGTON, DC • JANUARY 25, 2005

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This partnership began in earnest in early 2003 when Department of Energy (DOE) Assistant Secretary David Garman met with the National Association of State Universities and Land-Grant Colleges (NASULGC) President Peter Magrath. A plan was discussed for closer cooperation between the DOE Office of Energy Efficiency and Renewable Energy (EERE) and the Board on Agriculture Assembly (BAA)/NASULGC to expand the access of DOE to the research and extension capacities of the state universities and land-grant colleges. The objective of this expanded cooperation was to provide access to extension and outreach systems for delivering products and services of the DOE research and development programs and to develop partnerships in research that would increase the productivity of DOE and NASULGC-affiliated institution research programs. For NASULGC, the benefits of collaborating with EERE include helping its member universities increase their responsiveness to practical problems of the day, and to provide opportunities for faculty and students to gain access to research and new knowledge.

FY04 Accomplishment Report Tab 2

In FY04, five pilot projects were developed and proved successfully. Two (Projects 1 and 4) are in the process of being incorporated into EERE and NASULGC business operations. This section covers these project accomplishments in detail.

Outline of Three-Year Planning Document Tab 3

The partnership is moving toward the creation and implementation of a three-year collaborative agreement that will build upon the successes of the five projects. Projects 2, 3, and 5 will be carried forward, but with added emphasis on strategic implementation. A new project will be developed as well. The proposal builds on the successes of the 2004 Agreement and involves cost-shared funding by each institution for the broad purpose of engaging the capacities of NASULGC institutions to enhance the ability of the EERE to carry out its mission.

Plan of Work for FY05 Tab 4

Detailed activities are discussed for the first year of the three-year Collaborative Agreement. The emphasis in the current year will be to expand these pilots to the full set of NASULGC-affiliated institutions, and to explore ways that the successes in the current year can be expanded to add to their scope — building new pathways for expanding the leverage that the NASULGC institutions can add to the mission of the EERE in these selected areas. The effort will thus involve training of the staff and faculty at the NASULGC-affiliated institutions nationally and at regional levels, and implementing the successful pilots throughout the system. The approach will vary by project, but in general, move from pilots to implementation of these programs within the NASULGC system.

Appendix

A sample of materials are provided below that illustrate the internal working operations and procedures of the partnership.

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From Our Project Leadership Teams to Our Executive Steering Committee For us, the accomplishments of our emerging partnership are a source of pride and inspiration. In the past year, five pilot projects were developed to expand access for energy researchers to the extension capabilities of state universities and land-grant colleges, and to benefit university faculty and students through collaboration with federal energy researchers. We are pleased to report that these pilots proved successful, and this success has encouraged us to expand our collaboration. The partnership is now moving toward the creation and implementation of a three-year collaborative agreement that will build on the successes of the pilot projects, both nationally and at the regional level. We are excited about the prospect of accomplishing even more together.



Addressing Critical National Needs Both the Office of Energy Efficiency and Renewable Energy (EERE) at the Department of Energy (DOE) and the National Association of State Universities and Land-Grant Colleges (NASULGC) are working on issues of national prominence. EERE is pursuing its vision of a clean, prosperous energy future. Its mission is to lead the federal government’s research, development, and deployment (RD&D) efforts in biomass, geothermal, solar, wind, building energy efficiency, and other renewable and energy efficiency technologies aimed at providing reliable, affordable, and environmentally sound energy supplies for America’s future.

NASULGC’s institutions have enabled many of the intellectual, material, and economic benefits enjoyed by the citizens of our nation. American higher education has a history of successful research and transfer of agricultural and other technologies at land-grant and other educational institutions, and a cooperative extension service that is renowned worldwide.

EERE and NASULGC have invested in developing plans and roadmaps. Both are now seeking to engage other organizations with whom they can develop productive partnerships, and build integrated programs that will result in interactive and responsive organizations. And both are seeking to put critical resources to work on problems that communities and the nation face. Our alliance is a natural fit.

Idea for a New Partnership The seeds for a partnership between EERE and NASULGC were planted in the late 1990s by several EERE and NASULGC individuals, including Doug Faulkner; EERE’s Principal Deputy Assistant Secretary, and Dr. Stanley Johnson; Vice Provost for Extension at Iowa State University. They recognized that public colleges and universities are the only entity in the U.S. where teaching, research, and outreach programs



The overall EERE portfolio provides a combination of multiple renewable energy technologies — solar, wind, biomass, geothermal, and others — together with research and development of energy efficiency technologies. Shown: Department of Energy Headquarters (the Forrestal Building) in Washington, D.C.



A voluntary association of public universities, land-grant institutions, and many of the nation’s public university systems, NASULGC campuses are located in all 50 states, U.S. territories, and the District of Columbia.

involving renewable energy and energy efficiency could come together under “one roof” and, at the same time, connect to a national system of universities in each state to create a presence in every county in the U.S.

They proposed a partnership between EERE and NASULGC that would expand the working relationship between member institutions of NASGULC and DOE. This would create an opportunity for EERE to more cost-effectively carry out its mission to develop and disseminate energy efficiency and renewable energy production technologies. It would also serve to enhance the research and education capacity of NASULGC institutions by allowing them to interact more closely with EERE’s energy research and development programs and National Laboratories.

Bringing The Partnership to Life In January 2003, Peter Magrath, the President of NAGULGC, and David Garman, DOE’s Assistant Secretary for Energy Efficiency and Renewable Energy, met and agreed to collaborate and to develop and implement a new partnership model.

Dr. James Fischer (who has held previous faculty and administrative positions at Clemson, Michigan State, University of Missouri, and the U.S. Department of Agriculture (USDA)) was hired as a member of the EERE Board of Directors to help build the basis for cooperation with the NASULGC institutions and U.S. higher education more generally. President Peter Magrath designated the NASULGC Board on Agriculture Assembly (BAA) as the NASULGC entity to carry out the partnership. The BAA appointed a committee to coordinate

The Executive Steering Committee consists of representatives from both EERE/DOE and NASULGC. Its functions entail working with the five Project Leadership Teams and reporting to David Garman, DOE Assistant Secretary for Energy Efficiency and Renewable Energy, and Peter Magrath, President of NASULGC.

with Dr. Fischer in developing a program of action that would achieve the objectives of the EERE/NASULGC agreement for expanded cooperation. A speech (Tab 17) was developed that described a future where the capacities of universities and DOE could be matched in critical areas, to help provide all citizens, including farmers and other rural Americans, with clean, affordable, and bountiful energy. EERE and NASULGC could help bring about this future, it was proposed, by working together to build partnership. After this speech, a formal proposal was developed and submitted for consideration. In January of 2004, the formal proposal for five one-year joint pilot projects was accepted, and in February 2004, the first meeting of the new partnership was conducted.

FY 2004 Partnership EERE and NASULGC engaged in a collaborative partnership-building activity in FY04 through joint participation on Leadership Teams for each of the five pilot projects. The intent of this collaboration was to provide access to extension and outreach systems for delivering products and services of the EERE research and development programs, to develop partnerships in research that would increase the productivity of EERE and NASULGC-affiliated institutions’ research programs, and to explore the potential for energy curriculum development.

For NASULGC, the benefits of collaborating with EERE include helping its member universities increase their responsiveness and relevance to the practical, current problems of society, and to provide opportunities for



Executive Steering Committee members discussing the progress and future direction of the EERE/NASULGC partnership at the January 25, 2005 meeting.



DOE scientists and university Extension officials met together in workshops on energy-efficient housing to disseminate the DOE Building America “Best Practices Guide” to building contractors. (Project 2-A)

faculty and students to gain access to research and new knowledge. In addition, new opportunities for the university Extension programs were explored and discussed by representatives from NASULGC with a Task Force that had been assembled by EERE to examine the deployment of energy efficiency and renewable energy technologies (Tab 18).

Overall management for the pilot year partnership has been provided by a 10-person Executive Steering Committee, consisting of key executives from EERE and NASULGC (Tab 8). Leadership for each of the projects has been provided by a Project Leadership Team consisting of senior-level managers from both organizations. Nine EERE personnel and one staff member from the National Renewable Energy Laboratory (NREL), as well as 10 NASULGC personnel, consisting of representatives from

NASULGC, the Agricultural Experiment Station, and/or Extension Directors Regional Associations, have served on project leadership teams.

Teleconferencing has enabled team members to conduct partnership business from locations across the U.S. (Tab 5 – Sample of conference call meeting minutes from 12/16/04). A project tracking system has been established to monitor the status of the projects (Tab 13). Communication was further enhanced by development of a Web site (Tab 16). Requested white papers defined potential roles for Extension in energy deployment (Tab 19). Highlights from these projects that have helped to lead to the successful development of this emerging, synergistic partnership are presented in the table below.

Project	FY04 Accomplishments
(1) Expanding the Opportunities for Cooperation and Communications between NASULGC and DOE/EERE	<ul style="list-style-type: none"> ■ Over 30 presentations concerning EERE and NASULGC activities and capacities (Tab 7 and 12). ■ Two articles published (Tab 6) and a Web site established outlining partnership goals and developments (Tab 16). ■ Searchable resume database (Autonomy) containing resumes from faculty at NASULGC institutions who are willing to serve on peer panels, advisory boards, etc. is in the development stage (Tab 21). ■ Databases for contacting researchers and extension personnel at NASULGC-affiliated institutions expanded and made more useable for making DOE/EERE contacts. ■ Two administrators from NASULGC universities appointed to Advisory Boards and several faculty identified to serve on peer review panels.
(2) Use of Extension and Outreach Systems for the Dissemination and Delivery of Doe/EERE Products and Services	<ul style="list-style-type: none"> ■ Faculty from seven universities participated with EERE's Building America program on residential housing. ■ EERE Building America program (Building Sciences Corporation) conducted three-day workshop for faculty. ■ Faculty used Building America Best Practices Guide as base material for educational programs in their respective states with feedback to the EERE Building America program. ■ Three white papers written on the following topics (Tab 19): <ul style="list-style-type: none"> • how a demonstration house can incorporate best energy efficiency practices and be a tool in educational work • the value added of an Extension Partnership with other agencies, and • an overview of the components of high-performance housing. ■ Four states in the Pacific Northwest — Alaska, Washington, Oregon, and Idaho — along with Kentucky are joining forces to train local extension educators about alternative energy sources and the economic advantages that these sources may provide small/rural communities and the ability of these communities to attract new business and industry (Tab 9 and 11).
(3) Youth Education in Science & Technology	<ul style="list-style-type: none"> ■ The technology selected for trial was supplied by EERE and the National Energy Education Development (NEED), and focused on the "science and energy of light and lighting." ■ Youth educators from seven states were trained in Washington, DC on the curriculum during a two-day period (June 2004). ■ The curriculum was taught in the 4-H After School-Program over a period of three weeks after the beginning of the academic year (September and October). ■ The process showed that the new content could be easily introduced into the curriculum and was manageable by the 4-H professionals. ■ The learning outcomes were impressive, with almost all participants taking away from the sessions the main ideas and concepts.
(4) Engaging the Research Capacities of the Universities and State Colleges	<p>Summary of findings of a survey included:</p> <ul style="list-style-type: none"> ■ Universities can account for funds received from DOE, but not from a sub-agency within DOE; re: EERE. ■ 87% of the research VPs indicated that they had not experienced any difficulty in reaching agreement with DOE on terms and conditions for the handling of IP ■ 28% of the university VPs had concerns relative to the time of notification from DOE relative to deadlines ■ Institutional capacity to respond to DOE grants could result from the following: <ul style="list-style-type: none"> • limited faculty with an interest in energy-related topics, • a lack of alignment of DOE programs with SAES/university research capacity, • the general overall shrinkage of university research faculty, • a lack of a critical mass of faculty to address DOE/EERE priorities, and • the cost-sharing requirements imposed by DOE. ■ Universities subscribe to various services to keep their faculty informed of grant opportunities. Most popular were the "Community of Science" service, while some noted that they used FedBiz.opp.s, or SPIN (Sponsored Research Information Network). ■ Most effective way to solicit and/or notify universities of opportunities for collaborative research awards from DOE was e-mail notifications directly to faculty, deans, and directors ■ Analysis of the USDA Cooperative Research Information System (CRIS) Portfolio for energy-related research identified: <ul style="list-style-type: none"> • 16 ARS projects, • two multi-state projects, and • 76 individual investigator Hatch projects.
(5) Workshops at the DOE Labs for Scientists from the NASULGC-Affiliated Institutions	<ul style="list-style-type: none"> ■ Workshop held at the NREL. Participation included 50 universities, 56 participants for biomass, 26 for solar energy, and two Native American serving institutions and 12 Historically Black Colleges and Universities (HBCUs).

Next Steps: Moving Toward A Three-Year Collaborative Agreement This emerging partnership is now in the process of developing a three-year collaborative agreement, in order to build on successful accomplishments in FY04 and to enhance the pursuit of EERE’s and

NASULGC’s respective missions. While this will initially be a three-year effort, it is envisioned as a longer-term initiative that would achieve significant integration into programs and regional organizations. A detailed listing of FY05 project activities is presented in the table below.

Objectives	FY05 Proposed Project Activities to Fulfill Objectives
<p>(1) Enhancing EERE program impact by increasing the working relationship between NASULGC regional associations and EERE regional offices.</p>	<p>Proposes to link EERE regional offices with the well-developed Cooperative Extension Service networks of offices and technical staff in all U.S. counties to deliver renewable energy education programs.</p> <p>Why?</p> <ul style="list-style-type: none"> ■ Builds on 2004 Project 2, which piloted a program utilizing the capacity of the extension system to deliver selected EERE services. ■ As result of 2004 Project 2, we learned there are many and varied energy activities throughout the Cooperative Extension System. ■ Proposed activities capitalize on existing Extension energy activities and the interest expressed in 2004 Project 2’s initial planning efforts. <p>Process:</p> <ul style="list-style-type: none"> ■ Organize a national training session to prepare trainers for the regional sessions that will follow. NASULGC institutions with the EERE regions and their state energy offices will send staff and faculty to participate in the regional trainings — up to five will be trained per state.
<p>(2) Institutionalizing the Extension outreach capacity in EERE programs.</p>	<p>Proposes expanded partnership-building between EERE programs and the Land-Grants extension system, specifically the Building America program.</p> <p>Why?</p> <ul style="list-style-type: none"> ■ Builds on success of 2004 Project 2 where Building America Extension faculty demonstrated successful outreach activities in each EERE region and established working relationships with the Building America personnel and teams. <p>Process:</p> <ul style="list-style-type: none"> ■ Expands the number of participating universities. ■ Program efforts can be developed at the regional office level where teams will also plan and conduct in each region “Train-the-trainers” workshops for Cooperative Extension personnel relevant to the Building America program’s goals and objectives.
<p>(3) Increase public education about energy by augmenting youth education in science and math with EERE-related interactive modules.</p>	<p>Proposes to build on youth education activities in science and education working with 4-H and NEED.</p> <p>Why?</p> <ul style="list-style-type: none"> ■ Builds on the youth education in science and technology work of FY04. <p>Process:</p> <ul style="list-style-type: none"> ■ Continue to work with 4-H Council and NEED in the After-School Program with possible expansion to other programs areas including the club, camping, and other major programs. ■ Increase the number of educational modules to at least six.
<p>(4) Expanding the joint university/EERE lab workshops to all EERE program areas.</p>	<p>Proposes to expand mechanisms that enhance the interactions between NASULGC institutions and the National Laboratories.</p> <p>Why?</p> <ul style="list-style-type: none"> ■ Builds and extends activities from Project 5 in FY04. <p>Process:</p> <ul style="list-style-type: none"> ■ Facilitate two additional meetings with the DOE Labs that are designed to bring together faculty from the NASULGC-affiliated institutions and scientists and engineers from the Labs. ■ One of the training sessions will be at a DOE Lab not under EERE. ■ There is also interest in USDA hosting one of these sessions.
<p>(5) Developing methods to improve the formal exchange between EERE scientists/ engineers and university faculty</p>	<p>Proposes to increase scientist-to-scientist interactions within EERE and NASULGC institutions.</p> <p>Why?</p> <ul style="list-style-type: none"> ■ Need became apparent in last year’s pilot activities. <p>Process:</p> <ul style="list-style-type: none"> ■ There are numerous ways to increase these interactions such as sabbaticals, Interagency Personnel Agreements (IPAs), etc. In FY05, the project will focus on IPAs. ■ Will identify a “fast track” mechanism to make it easier for scientists to move on IPAs from the NASULGC-affiliated institutions to DOE and vice versa.

PART 2

Review of Five Projects from the DOE/EERE NASULGC Collaboration in FY04

1. Background

The following material provides a summary of the accomplishments from the five projects that were developed to expand the collaboration between DOE/EERE and the NASULGC-affiliated institutions in FY04. In each case, the material includes a brief background statement, project leadership, goals, and/or recommendations for future work. More detailed information on the projects is kept at the National Center for Food and Agricultural Policy (NCFAP) Web site: <<http://www.ncfap.org>>. As some of these projects have expanded into increased activities for FY05, it is important to consult the Web site for the latest information on all the projects and for recommendations for continuation of related work. As stated in Part 1 Executive Overview, the projects created in FY04 were specifically designed as one-year pilot projects to explore possible avenues of interactions for the developing partnership between EERE and NASULGC.

2. Projects

The following five FY04 projects were developed, implemented, and successfully accomplished:

- (1) Expanding the Opportunities for Cooperation and Communications between NASULGC and DOE/EERE
- (2) Use of Extension and Outreach Systems for the Dissemination and Delivery of DOE/EERE Products and Services
- (3) Youth Education in Science and Technology
- (4) Engaging the Research Capacities of the Universities and State Colleges
- (5) Workshops at the DOE Labs for Scientists from the NASULGC-Affiliated Institutions

3. Implications

The general conclusion is that all of the projects were important and showed the potential for benefiting from collaboration between DOE and NASULGC. Some of the projects will conclude with the work this year; others will continue. In addition, there will be new projects in future years that reflect additional areas of beneficial mutual cooperation between DOE/EERE and NASULGC. The two projects that will be completed in this year and will be moved to implementation are Projects 1 and 4. In both cases, research

by the project teams has determined ways of accomplishing the objectives. There will be additional work in implementing the plan; however the activities of the teams are concluded. In short, what is left to be completed involves administrative decisions of DOE/EERE and NASULGC.

Projects 2, 3, and 5 will be continued. Projects 2 and 3 are for use of the Extension Service in deployment of educational materials for youth, the deployment of results of the research programs of DOE/EERE for housing and other energy efficiency in saving options, and a continuation of visits to the DOE Labs by scientists from the NASULGC-affiliated institutions.

This year, there will be a new project which will investigate an efficient mechanism for encouraging scientist exchange between universities and EERE — specifically investigating the role of IPAs in FY05.

Project 1

Expanding the Opportunities for Cooperation And Communications between NASULGC and DOE/EERE

Background

In early 2004, DOE and the NASULGC agreed to increase the participation of universities in EERE research and education activities. One of the initial projects undertaken to accomplish this goal was to expand opportunities for cooperation and communication between units within EERE and appropriate academic units within NASULGC universities.

As with any new initiative, general communications utilizing speaking opportunities at regional and national meetings and nationally distributed newsletters were used to communicate partnership opportunities and capabilities at NASULGC and DOE meetings.

Project Leadership

- Daryl B. Lund, Executive Director, North Central Regional Association, Wisconsin (dlund@cals.wisc.edu)
- Carl O'Connor, Executive Director, North Central Cooperative Extension Association, Wisconsin (nccea@uwex.edu)
- Peter Dreyfuss, Director, U.S. DOE, Illinois (peter.dreyfuss@ee.doe.gov)
- Tobin Harvey, Senior Advisor, EERE, Washington, DC (tobin.harvey@ee.doe.gov)

Goal 1: Identify faculty with appropriate expertise to serve on a variety of EERE boards, panels, and committee.

The first specific goal was to identify faculty with appropriate expertise to serve on a variety of EERE boards, panels, and committees. This strategy is intended to stimulate greater collaboration between scientists and engineers of EERE and NASULGC institutions. Faculty would benefit by not only gaining an understanding of ongoing EERE research and outreach programs but also learn about future EERE program direction that could lead to enhanced collaboration opportunities.

A process was developed to assist EERE managers to identify critical expertise needs that may be filled by faculty at NASULGC institutions for peer review and merit review teams for EERE projects. This involved an iterative process where four program reviews were identified by EERE, the critical expertise needs were identified and communicated to NASULGC institutions, and potential individuals submitted their qualifications to EERE. This provided a list of potential individuals from which EERE managers could select for their review teams. It quickly became apparent that a databasing process at EERE was needed to increase the efficiency of this process. In addition, the development and updates of appropriate NASULGC mailing lists and other solicitation methods are critical to the success of this endeavor.

The four program reviews identified by EERE were:

- Biomass Products
- Wind Energy R & D Distributed Wind Technology – 100kW or less
- Wind Energy Technology Acceptance Grants to facilitate deployment
- Hydropower Program R & D

The initial solicitation to NASULGC institutions resulted in approximately 30 submissions. Although this number is not large considering a pool of potential submissions greater than 10,000, in general, the program administrators of EERE were pleased with the new university contacts. In many cases, the contacts were from institutions where EERE had no prior interaction. And, university personnel were appreciative of the new opportunities and relatively simple application process.

A process is now being developed within this project for identification of expertise needs by EERE programs, for solicitation of needed expertise from NASULGC-member institutions, and for storing all the information in a searchable database (Autonomy) within DOE-EERE.

Goal 2: Establish a process that allows NASULGC to recommend qualified individuals to serve on EERE Advisory Boards.

The second goal was to establish a process that allows NASULGC to recommend qualified individuals to serve on EERE Advisory Boards. This process obviously starts with EERE identifying the appropriate open positions on their Boards and the specific required qualifications. NASULGC used a variety of networks to collect potential candidates from across the nation. NASULGC then appointed a small committee to review those candidates and submit recommendations to EERE.

Two Advisory Board positions were identified by EERE during FY04 and NASULGC submitted two names for each Board. Although the time between the initial contact with NASULGC and the decision date was short, we were able to solicit potential candidates from which the EERE staff could make a decision. These individuals were later appointed to the respective Boards (one for the Biomass Board and one for the State Energy Advisory Board (STEAB)). NASULGC is now in the process of establishing a communication mechanism that will enable the appointed individuals to solicit ideas, comments, and recommendations from all NASULGC institutions to bring to the Advisory Board meetings. Likewise this communication system will enable the NASULGC individuals to communicate the activities and decisions of the Advisory Boards back to the NASULGC institutions.

Also, during FY04, a second opportunity to nominate individuals for these Boards for FY05 became available in September. The solicitation by NASULGC identified two potential candidates for the STEAB, and one individual for the Biomass Board. Following the process discussed above, NASULGC made recommendations to EERE.

Recommendations:

1. Continue the general updates and information sharing via the formal interactions between EERE and NASULGC at regional and national meetings. Where appropriate, utilize newsletters, news releases, and other communication opportunities.
2. Establish a communication mechanism that will enable the appointed individuals to solicit ideas, comments, and recommendations from all NASULGC institutions and communicate the activities and decisions of the Advisory Boards back to the NASULGC institutions.
3. Develop an appropriate schedule to solicit the expertise needs for EERE program reviews. This in turn will require coordination with NASULGC personnel to effectively solicit potential faculty from NASULGC institutions.
4. Develop a secure EERE database system (Autonomy) to efficiently manage the list of potential candidates for peer and merit review teams.
5. A project director should perform the interface activities associated with this project.

Project 2

Use of Extension and Outreach Systems for the Dissemination and Delivery of DOE/EERE Products and Services

Background

In the spring of 2004, a decision was made to develop a pilot effort that would increase awareness of DOE research in the area of energy efficiency related to housing units among university housing faculty and to incorporate this research base into university outreach efforts. Initially six universities were identified, with one located within each of the six DOE regions.

Project Leadership

- Ronald A. Brown, Director, Association of Southern Region Extension Directors, Mississippi (brown@ext.msstate.edu)
- Richard D. Wootton, Director, NASULGC-Extension and Outreach, Washington, DC (rwootton@nasulgc.org)
- Bill Becker, Director, DOE, Colorado (bill.becker@ee.doe.gov)
- Ellen Lutz, Acting Director, Weatherization and Intergovernmental Programs, DOE, Washington, DC (ellen.lutz@ee.doe.gov)

Collaborators on this project included:

- Joe Konrad (Office of Weatherization and International Programs); Joe Wysocki (U.S. Department of Agriculture (USDA)); Mark Ginsberg (Board of Directors); Ed Pollock (Building America Program); George James (Building America Program); Roy Mink (Geothermal Program Manager); Jake Fey (Washington State University Energy Extension Program); Curtis Framel and Paul Johnson (EERE Western Regional Office)

The six universities have an active housing program with a faculty member/extension specialist responsible for outreach work. These six universities include the University of Alaska, the University of Minnesota, Louisiana State University, the University of Delaware, the University of Florida, and Cornell. A seventh university, the University of Kentucky, was added shortly after the project was initiated.

The faculty members were offered nominal incentives for participation. They would receive the DOE Building America Best Practices Guide, have a three-day orientation to these materials, and have an opportunity to interact directly with DOE scientists. Each university was also offered up to \$3,000.00 in operating funds to defray costs of an outreach activity directed to builders in their states. This activity was to include at least some content derived from the DOE research base presented in the Building America materials. The housing faculty/specialists were also asked to conduct an evaluation of the outreach activity and to make the findings available to DOE/EERE.

Goal 1: Three White Papers

Toward the end of the initial orientation session in July, the faculty participants agreed to write three white papers that would be useful contributions to other university colleagues. One was to discuss how a demonstration house can incorporate best energy-efficiency practices and serve as tool in educational work. A second centered on the topic of the value added of an Extension Partnership with other agencies. The third was an overview of the components of high-performance housing. All of these papers have been developed and submitted to Dr. Joe Wysocki, the National Program Leader for Housing at USDA/Cooperative State Research, Education, and Extension Service (CSREES) so that they can be shared with other housing faculty at NASULGC institutions.

Goal 2: Conduct educational efforts

As of December 2004, six of the seven pilot universities have submitted proposals that represent a commitment to conduct an educational effort that includes DOE research-based content. The seventh university, the University of Minnesota, will submit a proposal in early 2005 when a new faculty member joins their housing team. Some of the proposals build on existing ongoing efforts; others represent a new focus. Most have already started the implementation phase, others will implement and evaluate in early 2005.

Highlights that have already occurred:

- The University of Delaware specialist displayed an exhibit at the Home Show in October 2004, which demonstrated energy savings and moisture control.
- The University of Kentucky specialist conducted a workshop in September 2004 to over 100 homebuilders that included information on advanced framing techniques, heat recovery units, vapor retarders, and radon mitigation.
- The University of Alaska specialist interacted with over 30 contractors in a seminar on mold and moisture in October 2004.
- The Cornell specialist was the featured speaker at seven homebuilder association meetings in New York in the fall of 2004. The presentations included information on the four states of water, advanced framing, and energy efficiency. The specialist also discussed resources available through the Building America program.
- The LSU specialist gave a guided tour for over 100 builders of the LaHouse, which incorporates considerable DOE research and suggested best practices.

Project 2-A – Adoption of Energy Efficient Housing Technologies

Project 2-A represents a win-win situation for both DOE/EERE and the university housing specialists. The deployment of DOE research was certainly enhanced in the pilot effort; the specialists received valuable in-service training including interaction with DOE scientists. The exchange between the researchers and university faculty/specialists demonstrated the importance of teaching from a research base and the reality check that comes from the faculty — who have considerable direct interaction with homebuilders.

Project 2-B Adoption of Renewable Energy Technologies

Alaska, Washington, Oregon, Idaho, and Kentucky are joining forces to train local extension educators about alternative energy sources and the economic advantages that these sources may provide small/rural communities and the ability of these communities to attract new business and industry. This pilot effort is planned for 2005 and will involve a third partner, USDA Rural Development, that may be a potential funding source for communities which have a renewable energy advantage.

This project consists of multiple phases. The first phase is the development of a curriculum that would be used to train agents/local educators from the universities. This would include content on both alternative/renewable energy and community attributes that would make a given community a good candidate for this approach to economic development. The local educators would also be familiarized with USDA Rural Development guidelines for grants that would enable communities to take advantage of local attributes.

Analysis of 2004 Pilot Effort

There is great potential for expanding the number of states involved in the energy-efficient housing effort. Approximately 20 NASULGC universities have active housing programs with an outreach component. The housing faculty/specialists are well networked and regularly interact at national meetings. The excitement of the initial seven states involved in the DOE/NASULGC pilot has captured the interest of the broader group.

An annual idea exchange between these faculty and researchers from both DOE and the university community would be an excellent next step. An additional goal might be to work toward a funding level that would support a master's level graduate student to work with the outreach faculty/specialists and to focus on energy efficient practices.

Report prepared by Ron Brown and Dick Wootton 12/2/04.

Project 3

Youth Education in Science and Technology

Background

DOE has developed a wealth of youth educational materials for a variety of age groups that is available for deployment. The purpose of this particular pilot project was “to determine the feasibility of using the 4-H Program as a vehicle for distribution and use of DOE educational materials as a part of the science and technology curriculum with 4-H youth.” The 4-H After-School Program was selected as the specific pilot vehicle for the purposes of this effort.

With the engagement and assistance of the 4-H Youth Development Task Force, whose members supported this project, 4-H educators were selected by the state directors in each of seven states (Nevada, West Virginia, Tennessee, Texas, Iowa, Arkansas, and Vermont), thus assuring representation of each one of the six DOE regions in the pilot study. With the assistance of DOE and NEED personnel curriculum materials were selected and vetted with the After-School leadership to ensure that they met the appropriate educational and experiential standards. The curricular materials selected for the pilot study focused on the “Science of Energy, Light, and Lighting” were offered within a three-week timeframe in early fall 2004.

Training of the 4-H Youth Educators took place over a two-day period in June 2004 at NASULGC Headquarters in Washington, DC and was conducted by NEED personnel. The program was then implemented in each of the selected venues of the 4-H After School Program.

Project Leadership

- Linda Kay Benning, Associate Director, NASULGC-Extension and Outreach, Washington, DC (lbenning@nasulgc.org)
- Ian L. Maw, Director, NASULGC-Academic Programs for Agriculture and Natural Resources, Washington, DC (imaw@nasulgc.org)
- Jim Powell, Director, DOE, Georgia (jim.powell@ee.doe.gov)
- Lani Macrae, Education Coordinator, DOE-EERE, Washington, DC (lani.macrae@ee.doe.gov)
- David Waldrop, Technology Deployment, Education and Outreach, DOE, Georgia (david.waldrop@ee.doe.gov)

Goal

An evaluation of this project has taken two forms: a “process” evaluation and a “knowledge acquisition” evaluation of the learning that took place on the part of the students.

Process Evaluation

A “process evaluation” was conducted by the pilot co-leaders to provide an evaluation and/or assessment of the following:

- The training provided by NEED
- The students’ reaction to the selected and piloted energy learning modules
- The extent of any parental involvement
- The appropriateness of including this particular education learning module in the 4-H Program on an ongoing basis
- The appropriateness of expanding the energy education experience with the goal of building a 4 – 6 week learning experience for the 4-H Program
 - Identifying energy areas of interest
 - Identifying areas to be avoided
- Any challenges with the pilot program and associated remedies; suggestions for future program development.

A program leader for each of the pilot program sites was employed was asked to complete a questionnaire (found following the results) eliciting this information. Reported below are the results of this process evaluation.

NEED Training

All the participants found the training valuable and sufficiently detailed such that it could even be used in a train-the-trainer model. However, a number noted that the duration of the training could be longer to allow more time for familiarity with the experiments and providing additional background on the science behind the experiments. All found the training to be an essential ingredient of the program.

Students’ Reactions & Parental Involvement

All reported that the students were easily engaged in the project, excited, and looked forward to and enjoyed the hands-on activities. Student learning was facilitated. There were numerous reports of students carrying their learning back into the home environment, which in turn engaged the parents as well. Parental involvement appears to be a function of the extent to which the trainers choose to actively engage them.

Inclusion of Light and Lighting program in 4-H Program

The program participants felt that given their experience with the program, the children’s very positive reaction, and the knowledge, it could/should be considered for on-going inclusion in the 4-H Program on a regular basis. There were, however, concerns that funds be available for materials availability and replenishment. It was also clear that adequate and timely training is prerequisite to such program efforts. In addition, other venues such as summer programs were suggested for the program.

Expansion of Energy Education Efforts with the 4-H Program

All participants indicated that building a 4 – 6 week learning curriculum around energy topics of the 4-H Program would be useful. Topics suggested for inclusion included geothermal energy, wind energy, biomass, hydropower, fuel and conservation issues, and more on solar energy. Participants cautioned that there would be challenges in implementation including funding, solicitation of volunteers to conduct the program, and that there needed to be grass roots 4-H support for it. A key to such a program was cited as being focused on areas of interest to kids (e.g., electricity, building circuits, etc) that employed hands-on activities that are engaging and not like “school work.” Concern was also noted that focusing the program on a daily basis for such a period of time would be a challenge and other types of scheduling needs to be considered (e.g., once a week).

Major Challenges Experienced and Remedies Employed

Reported were challenges with the timing of the pilot study — and the time frame in which it was conducted — which can be remedied by creating flexible schedules for implementation of the succeeding efforts to allow more time for the identification and training of volunteers, minimizing conflicts with other school or community events, and allowing advance preparations to occur in a timely fashion. Other challenges noted were those related to weather conditions that interfered with some of the experiential activities and certain equipment failures (glow sticks).

Suggestions for the Future

There were many suggestions that covered a diversity of topics from program expansion to include additional energy content modules as well as those in related science areas such as electricity, the creation of workbooks in PDF formats for both individual (student) study and teacher planning, the development and implementation of an energy trainer certification program, and the development of a Web site for lesson plans and experiential activities. As noted in earlier responses, thorough training was deemed essential, timing is critical, and a consistent funding stream cannot be done without.

Process Evaluation Questionnaire

1. Evaluate the NEED training that you received at the NASULGC Headquarters last June. Was it sufficiently detailed to allow you be confident about the teaching task you were asked to perform with the 4-H After-School Program? Do you have any suggestions for improvement?
2. On the basis of your experience with these education modules, would you consider their inclusion in the 4-H Program on an ongoing basis?
3. Describe the children’s reactions to the program. Were they easily engaged and attentive to the subject matter? Was there a sufficient “hands-on” component?

4. On the basis of your experience, would you consider an expansion of the learning experience to include additional energy education-related modules adding to those used this year with the goal of building a 4 – 6 week energy learning experience for the 4-H Program?
5. What were the major challenges with the program and how did you overcome these?
6. What suggestions do you have for the future development of this program?

Learning Assessment

In each of the NEED Project's energy education programs, students are given a pre- and post-test for the unit being taught in the classroom. They are modeled on NEED's Energy Education Poll (online at www.need.org) and the results are reported in the annual NEED Energy Education Report Card (also online at www.need.org). NEED continues to see knowledge increase that is significant for students at all grade levels. The assessment was created and reviewed at the 4-H/NEED leader training hosted in June 2004. A few alterations were made based on feedback from the leaders and the final version was provided to each group. Each pilot project scored their assessments differently, thus NEED re-scored based on a uniform scoring method to provide the best data for the evaluation.

The assessment tested students on the following concepts:

1. Students were provided with two graphics (one girl in black clothing and one in white clothing) and instructed to circle the girl who would feel hotter.
2. Students were provided with three graphics of solar energy and angles and instructed to circle the boy who would have the longest shadow.

True/False Questions

3. Light can be reflected or absorbed.
4. Some substances can store light.
5. A mirror absorbs light.
6. A PV cell turns light energy into heat.
7. Chemical reactions can produce light.
8. Students were provided with a graphic of an incandescent bulb and a compact fluorescent bulb and instructed to circle the bulb that is more energy efficient.

Student responded to the questions before beginning the lessons created for the after-school programs and then responded to the same questions at the end of the unit. In virtually all of the programs, significant improvement was shown. Improvement percentages range from 5.5 percent to 41.8 percent.

The question that had the highest percent change at a number of the schools was the eighth question. This question showed an incandescent light bulb and a compact fluorescent light bulb and asked the student to circle the light bulb that was more energy efficient. On the pre-test, many of the kids circled the standard incandescent light bulb. However, the results of the post-tests imply that there was a significant increase in knowledge of lighting efficiency due to the program. In West Virginia, for instance, the percent change on question eight was 56.7 percent (from 62.5 percent answering it correct on the pre-test to 97.9 percent on the post-test).

There are many possibilities for the range in improvement, including the transient nature of the after-school programs where students do not attend each session, some students leave before lessons are completed, some students may have participated in other energy lessons, and the age range of the after-school programs is fairly significant. Ages range from 2nd grade to 7th grade. The level of knowledge of the trainers also provides variation. Although the training program provided extensive information background, most thought it could have been longer and provided even more detail. At the training session, several of the state teams indicated that they did other work in energy in their programs. West Virginia is an excellent example. Having provided other energy programs to their students – the assessment scores for their students were significant in the evaluation. They showed significant gains in knowledge. The same applies to the Vermont team.

It should be noted that each pilot team had at least one program that showed extremely positive results.

Assessment results received from most of the pilot projects were scored for each student and took the average of the student group for reporting. The results are highlighted in the following chart.

Pilot Site	Average Pre-test Score (Out of 8)	Average Post-test Score (Out of 8)	Average Point Improvement (Out of 8)	Percent Improvement
Iowa – Maquoketa	6.36	7.36	1	12.5 %
Texas – Sheppard Air Force Base	4.12	5.59	1.47	18.38 %
Texas – Fort Hood School Age Services	4.68	5.79	1.11	13.88%

Pilot Site	Average Pre-test Score (Out of 8)	Average Post-test Score (Out of 8)	Average Point Improvement (Out of 8)	Percent Improvement
Vermont Site	5.9	7.3	1.4	17.5%
Iowa -- - Columbus Junction School Enrichment Class	5.44	7.56	2.12	26.5%
Tennessee 4-H Club	4.83	5.44	0.61	7.63%
Vermont 4-H (Mrs. Garritano)	6.06	6.5	0.44	5.5%
Arkansas -- Craighead County Extension Service	4.73	5.25	0.52	6.5%
Vermont -- Gilman Middle School	5.0	7.64	2.64	33.0%

The West Virginia team scored by question:

Pilot Site	Average Correct Score On Pre-Test	Average Correct Score On Post-Test
The Instructors	79.2%	100%
Jefferson County	61.3%	86.9%
Hardy County	65.9%	86.4%
Monongalia County	78.7%	93.4%

Student Comments

“I never knew half the stuff that you taught all of us, and now we get to teach other kids. I really think when we teach all the other kids what you taught us they are really going to enjoy it the same way I know I did.”

“I had a blast.”

At one site the kids asked their teacher every day if they were “going to get to do more experiments today!”

“You really made science seem more fun... I would like to learn more things about science. You should come back again to visit us.”

“My dad said that maybe I could learn enough to become an electrician like he is.”

“Please can we do this every Monday?”

“If I leave now, does that mean that I can’t be in your club tomorrow?”

“I would rather do these fun projects with light all day than go to school!”

“Mommy, please don’t make me go now, I’m having fun and learning about light!”

Parent Involvement and Feedback

The parent involvement varied from program to program but all parent feedback received was very positive. A number of the kids seem to have brought home the information they learned which involved their parents in the project.

One mother said it was good thing to tell her daughter about the differences in the light bulbs. She asked where she could buy them.

One parent said that her son came home and used a black garbage bag to make his own solar balloon so that he could show his parents what he did in the program.

In an after-school program, many of the parents who came early to pick up their kids waited until the lesson was finished because their kids were so excited and didn't want to leave. Parents thanked the instructors for teaching "important lessons."

Many parents expressed an interest in future programming and commented on their child's renewed or continued interest in the sciences as a result of the program.

In Summary

Given NEED's background in assessing energy education efforts, the data received from the pilot projects is in line with the data collected in other assessment projects created for evaluating student performance and knowledge gain. The teams selected for the pilot project were thoughtful, eager to learn, and dedicated to their task. The 4-H After-School model provides an excellent place for innovative energy education programs. Although time with the students is limited, the students gather a great deal of information in that short period of time. Should NASULGC and U.S. DOE choose to model other programs for the 4-H market on energy, NEED is available and eager to see the pilot grow from the original programs into a comprehensive energy portfolio for 4-H programs nationwide.

Recommendations

Based upon the evaluations and apparent success of the 2004 Pilot effort, it is recommended that the effort be expanded to encompass additional state and sites within states, and in doing so, expand the curriculum to include additional learning modules. DOE/EERE should engage the USDA 4-H Program personnel to collaborate in the effort.

Project 4

Engaging the Research Capacity of the Universities and State Colleges

Background

Engaging and understanding the research capacity of the NASULGC (LGU and Non-LGU) institutions to conduct research, development, and outreach activities was one of the five areas defined in the DOE/EERE NASULGC agreement to increase the level of collaboration between DOE/EERE and the NASULGC institutions. To better understand the research capacity and any barriers that might serve as obstacles to an expanded research effort on the part of the LGU and Non-LGU institutions as identified by NASULGC and their relationship to DOE/EERE, we conducted a survey of the State Agricultural Experiment Station (SAES) Directors and the university research officers. The university research officers were identified as the office of the University Vice-President or Vice-Provost for Research via the NASULGC Council for Research Programs and Graduate Education (CRPGE). To access the offices of the SAES Directors and the university VPs for research, we used the NASULGC list serves for these groups. This effort was initiated to determine if there were barriers that inhibited or in any way limited understanding of the DOE/EERE portfolio by the various segments of the university research community, and to determine what was required to increase both interest in the DOE portfolio and competition for DOE awards. In addition, we evaluated the current projects listed in the USDA Cooperative Research Information System (CRIS) to determine the level of capacity within the SAES system with regard to research on issues of interest to DOE/EERE.

Project Leadership

- Thomas A. Fretz, Executive Director, Northeastern Regional Association, Maryland (tfretz@umd.edu)
- Eric Young, Executive Director, Southern Association of Agricultural Experiment Station Directors, North Carolina (eric_young@ncsu.edu)
- Jeff Baker, Manager, DOE-Laboratory Operations, Colorado (jeff.baker@go.doe.gov)
- David Rodgers, Deputy Assistant Secretary, DOE-EERE, Washington, DC (david.rodgers@ee.doe.gov)

A survey was developed in consultation with the project team members and with Dr. Thomas Archer of The Ohio State University:

1. To determine the level of current DOE funding to NAULGC institutions,
2. To determine if draft “Terms and Conditions” for Intellectual Property ownership could be established, thus reducing the period of negotiation on IP issues on the front end of grant and contract activity,

3. To determine if institutional capacity (human capacity and/or facilities) in any way limits the ability to seek DOE funding, and
4. To determine if DOE is clearly communicating the availability of funds for collaborative R&D activities.

Goal 1: Original Objectives

These questions would allow us to respond to the original objectives of this component of the DOE/EERE NASULGC initiative, namely;

1. To identify any barriers that might limit cooperation between NASULGC (LGU and Non-LGU) institutions and DOE,
2. To determine if intellectual property agreements are a barrier to increased cooperation, and
3. To identify those activities in the current multi-state research portfolio that relate to the DOE/EERE Mission.

Twenty-three questions were designed to answer the above questions regarding the DOE/EERE relationship. The survey was mailed in early August of 2004 to the SAES Directors and to the VPs for Research using the NASULGC email list for each group. Responses for each group approached 16.5 percent, and while the return was smaller than expected, the results appear to be sound enough to use and interpret.

Goal 2: Level of DOE/EERE Funding

The first 12 questions focused on seeking input from each institution on the number of proposals submitted and their value, and the number of awards received and their value for the years 2001–2003 from DOE/EERE. It appeared from the data that institutions are not well positioned to provide such data, and do not sector their data in this manner. It does not appear that institutions have this information readily at hand, and as a result, many simply did not respond to this set of questions.

These questions would be better suited for those in the university grants and contract administration offices, not the university VP for Research or the SAES Director. In addition, it is evident in looking at the data submitted that these offices can account for funds received from DOE, but not from a sub-agency within DOE, re: EERE. Institutions do not appear to routinely account for awards by sub-units within agencies. While somewhat helpful, we have concluded that these questions did not lead to an increased understanding of the level of funding within the universities surveyed regarding DOE/EERE funding. Our results also suggested that DOE/EERE should be able to account for funds (awards sought, granted, value, and institutions receiving awards) allocated to the universities via their grants and contract offices by category and sub-agency.

Goal 3: Uniform Terms and Conditions for Intellectual Property (IP) Disclosure

The second set of questions dealt with IP issues. Early in these discussions of the linkage between DOE/EERE and public university research community, it was implied that the negotiation of intellectual property agreements was often a point of disagreement and led to delays in reaching final approval on awards. In addition, it was suggested that when

third parties were involved, especially new enterprises, this issue was further complicated.

To try to understand these issues, and working with USDA and DOE, we used a draft set of IP “Terms and Conditions for Intellectual Property Ownership” that had previously been agreed upon by the agency (DOE) for use with other awards (namely, the Solid State Energy Conversion Alliance (SECA) program). We attempted to see if the draft Terms and Conditions would be acceptable. Our thinking was this would reduce the time spent in negotiation and allow for more rapid pursuit of the research agenda. When asked if the proposed Terms and Conditions would be agreeable, 80 percent of the SAES Directors responding found the terms acceptable, however, of the research VPs that responded, only 59 percent thought that the terms would be acceptable. It needs to be understood that SAES directors may not — and in fact in most instances do not have the authority to negotiate IP Terms and Conditions for the university, although in a number of cases they do advise the Office of Technology Transfer (or an office with a similar name and function) on IP issues that relate to their areas of responsibility. The responsibility for any negotiated rights to IP generated by the faculty within a university normally lies within the VP of Research, and is delegated to a legal staff.

In general, the terms that we offered (see attached) for consideration had a number of shortcomings:

1. The holding of any offering open for up to a period of one year for negotiation was considered too long and is at variance with many university policies.
2. Any agreement should specify who should pay for the costs of patenting and protecting the IP.
3. If the parties have negotiated in good faith and failed to reach an agreement, it is unreasonable to force the licensing under unacceptable terms and conditions by a court of competent jurisdiction.
4. Some felt that the policy as written was ambiguous.
5. The issue of a partially exclusive license was confusing. Most universities would not accept terms that require non-exclusive licensing of IP.

Having indicated the above, it should be noted that 95 percent of the SAES Directors responding, and 87 percent of the research VPs indicated that they had not experienced any difficulty in reaching agreement with DOE on terms and conditions for the handling of IP. They did, however, indicate that when third parties were involved, difficulty in reaching agreement increases. For the SAES Directors, 29 percent found that third party agreements were more difficult to reach, while the university VPs noted that in 53 percent of these cases there were difficulties.

Goal 3: Communication, Institutional Capacity and Barriers

A series of questions were also designed to determine if communication(s) could be improved so that the university community was better informed of the opportunities at DOE/EERE. This section of the survey proved to be the most interesting and informative. When asked if the university or SAES found any concerns relative to the time of

notification from DOE relative to deadlines, 24 percent of the SAES Directors indicated yes, while 28 percent of the university VP's responded similarly.

When we sought to determine if institutional capacity had any impacts on ability to respond to DOE/EERE request for proposals, we learned that 38 percent of the SAES directors responded affirmatively, and 20 percent of the university VPs for research felt likewise. This is understandable, given that energy has not been a mainstay of the research portfolios for state agricultural experiment station directors other than efforts in biomass, and to a limited extent, interest in bioproducts. In addition, there was some indication in the written responses that small institutions, particularly the 1890s, had limited capacity to respond (In this case, we are presuming human capital and facilities sufficient to compete). Some of these limits for all public institutions could be due to limited faculty with an interest in energy-related topics, a lack of alignment of DOE programs with SAES/university research capacity, the general overall shrinkage of university research faculty, a lack of a critical mass of faculty to address DOE/EERE priorities, and the cost-sharing requirements imposed by DOE.

In addition, some universities noted that they do not do classified research (however, this response may have come from one of the larger public universities that work with other aspects of the DOE portfolio where confidentiality and classified activity may be the norm). Another concern raised was the issue of data rights, and the fact that DOE may ask for such. This is counter to university policy at most institutions.

When we posed the question, "From your perspective, what is the most effective way to solicit and/or notify your university of the opportunities for collaborative research awards from DOE," the responses were almost unanimous: they wanted timelier e-mail notifications sent directly to faculty, deans, and directors. Some cited that DOE should have a better organized Web site, and that the current liaison effort with the SAES Directors is a start in the right direction, and should be institutionalized. In order to get a better understanding of the services that universities use to keep faculty aware and informed of research opportunities, we asked what services were employed. Overwhelmingly, most universities were subscribers to the "Community of Science" service, while some noted that they used FedBiz.opp, or SPIN (Sponsored Research Information Network).

We also sought input on other barriers that were in place and acted to limit institutions from obtaining or competing for DOE/EERE funding. Several, presumably the smaller institutions, noted that the availability of matching funds limited their participation, as did the lack of clear and effective communication from and with DOE. Those that had attempted to submit proposals to DOE electronically found the process cumbersome and the instructions poor. Several respondents noted that the system was not user-friendly. At least one institution responded that faculty in non-doctoral degree granting programs and units were discouraged from applying for DOE funds. While this seems to be an isolated case, and most likely was focused at a smaller or minority institution, it should be investigated.

Several of the responders noted that when working with DOE the time from announcement of a Request for Proposal (RFP) to awards being announced, that the process is very bureaucratic, with a long and complex application process, as compared to the standards of National Science Foundation (NSF) and National Institutes of Health (NIH). In addition, some noted with frustration that DOE has changed their e-submission process on several occasions, only adding to confusion.

Lastly, several respondents noted difficulties working with the DOE National Labs. The exact nature of the difficulties were not elaborated in sufficient detail to make a recommendation, however, it seems that from the comments, that processes for seeking funding from HQ and from the National Labs is sufficiently different and adds another level of complexity to the process.

Recommendations:

1. DOE should consider establishing a permanent liaison to the public (LGU and Non-LGU) university community.
2. Some effort on the part of DOE might be made to reach out to the minority-serving institutions, in the form of workshops to help them understand the opportunities for grants and contracts with DOE. DOE/EERE might also want to consider set-aside funds for minority-serving institutions in order to build their capacity to compete (both human capital and facilities).
3. DOE/EERE should establish better communication protocols for announcements of grant and contract solicitations (RFPs) to ensure the university community is fully aware of agency opportunities.
4. DOE might consider the establishment of agency-wide protocols for seeking grant applications. (In the analysis of the survey it seemed that different sub-agencies within DOE use different protocols for solicitation and application and this includes the National Labs, which seem to use a separate process.)
5. Establishment of uniform agency-wide guidelines or protocols for dealing with IP issues. If DOE wished to pursue this, we would recommend a workshop with research VPs, SAES Directors, and university legal staff. (There may, however, be such individuality expressed within the university community such as to make this task an impossible goal to achieve, and it would just be easier to negotiate individual contracts.

Analysis of the CRIS Portfolio

The last aspect of this effort was designed to access the current capacity of the SAES system to address energy-related topics by an analysis of the research endeavors listed in the CRIS portfolio. We did identify within the system 16 Agricultural Research Service (ARS) projects (mostly located at the regional laboratories) that focused on some aspect of energy, including a number of efforts underway on the use of vegetable-based oils as alternative fuels or extenders, biocatalysts to produce biofuels, bio-processing to convert

biomass to biofuels, and efforts to improve the economic competitiveness of ethanol production.

Within the SAES system, two multi-state projects are researching aspects of renewal or bio-based energy; S-1007 (The Science and Engineering for a Bio-based Industry and Economy) and NC-1016 (Economic Assessment of Changes in Trade Arrangements, Bio-Terrorism Threats and Renewable Fuels Requirements on the U.S. Grain and Oilseed). Seventy-six individual investigator Hatch projects were identified in the system that focused on energy, including 21 on biofuels or bio-based products, 16 on renewable energy related to sustainable agriculture, 10 on technology or industry issues, and 19 on basic biology and physiology. Projects focus on such diverse areas as bio-processing for utilization of agricultural raw materials; agricultural-based industrial lubricants; wood utilization; formaldehyde-free high-strength adhesives derived from cereal proteins, synthesis, and characterization of new bio-plastics from thermal polymerization of agricultural oils; and conversion of low-cost biomass to ethanol. Overall, most of the activity underway is focused on biomass conversion, ethanol production from renewable resources, and bio-processing, but was well short of what was expected. This analysis did, however, indicate that capacity — limited as it is — is available within the university community that can be focused on energy-related priorities as established by DOE/EERE.

Project 5

Workshops at the DOE Labs for Scientists from the NASULGC-Affiliated Institutions

DOE-NASULGC Biomass and Solar Energy Workshops National Renewable Energy Laboratory, Golden CO August 3 – 4, 2004

Background

The goal of these workshops was to stimulate greater collaboration between DOE/EERE scientists and engineers with scientists and engineers from NASULGC-affiliated institutions. To initiate this activity, a memo was sent to all Vice Presidents for Research at NASULGC institutions, inviting nominations of up to four participants for the workshops. This memo also indicated that travel assistance (\$500) would be available for early career faculty and those from minority-serving institutions. Several follow up notices were sent and a separate notice was sent to the Deans of Agriculture and to Agricultural Experiment Station Directors at the Land-Grant Universities. These efforts resulted in 57 nominees for biomass, 30 for solar energy, and 15 requests for travel funds from 50 universities. Based on the criteria set forth in the initial memo, invitations were sent to 83 individuals. Travel awards were made to those requesting support; however, one request was inconsistent with the criteria and was excluded. A special invitation sought participants from the 1994 Native American serving institutions and also provided travel support of up to \$1,000. In all, 16 travel awards were offered, including two 1994 awards.

Project Leadership

- Samuel L. Donald, Regional Research Director, Association of Research Directors, 1890 Land-Grant Universities, Maryland (sldonald@mail.umes.edu)
- H. Michael Harrington, Executive Director, Western Association, Agricultural Experiment Station Directors, Colorado (wdal@lamar.colostate.edu)
- Stan Bull, Associate Director, National Renewable Energy laboratory, Colorado (stanley_bull@nrel.gov)
- Sam Baldwin, Board of Directors, DOE-EERE, Washington, DC (sam.baldwin@ee.doe.gov)

A total of 84 faculty members from NASULGC member institutions participated in the two workshops: Biomass Workshop (56 participants) and the Solar Energy Workshop (28 participants). Included were two participants from the 1994 institutions.

Workshop Participation

Institution	Participants
1862 LGUs	45
1890 LGUs	12
1994 LGUs	2
Other NASULGC institutions	21
NREL/DOE	22

Workshop Agenda

A general introduction to National Renewable Energy Laboratory (NREL) programs was followed by a series of breakout discussions during which participants learned about NREL research programs and facilities. The sessions were structured to provide in-depth information about programs and to allow time for discussion. All presentations have been collected and will be posted on the web to provide attendees a record of the workshop.

Biomass topics: Systems Analysis – Lifecycle and Environmental, Thermochemical Conversion, Feedstocks/Analytics/Products, Biotechnology Routes

Solar Energy topics: Physics and Modeling, PV Cell and Module Characterization, Electro-Optical Characterization, Surface Analysis Characterization, Analytical Microscopy, Solar Thermal Systems, Solar Radiation Measurements

Workshop Evaluation. All participants received an evaluation form during the opening session and were requested to return the completed form at the end of the sessions. The evaluation also suggested additional topics and ways that future workshops might be improved.

Workshop Evaluation

Query	Biomass Mean n=26	Solar Mean n=8
Communications Initial	4.38	3.88
Communications Logistics	4.62	4.5
Workshop Logistics	4.42	4.0
General Organization	4.46	3.5
Introductory Sessions	4.38	4.13
NREL Overview	4.65	4.0
Biomass Overview	4.69	3.75
Solar Energy Overview	3.38	4.25
Breakout 1	4.31	3.88
Breakout 2	4.35	4.13
Breakout 3	4.38	3.88
Breakout 4	3.92	4.25

Query	Biomass Mean n=26	Solar Mean n=8
Understand NREL Research	4.46	4.38
Understand Research Opportunities	3.58	2.5
New Contacts at NREL/DOE	3.54	3.13
New Contacts with University	4.08	3.0
Met My Expectations	3.96	3.0
Recommend to Colleagues	4.23	3.38

Specific Evaluation Comments

Biomass:

1. Excellent! Thank you. Recommend maybe one follow up e-mail to the group with a wrap-up/main take-home message. Thanks a bunch! Great job!
2. Most of the information flow was from NREL towards the participants. There was not much opportunity for information to flow the other way. I guess the word "workshop" is not well-defined. In the informal settings (lunch, dinner, etc.) there was a chance to interact with others, which was useful. I recognize the logistical challenge of getting more input from visitors.
5. Facility tour. Get more NREL scientists involved in the breakout sessions (for the attendance to build contact, etc.).
7. Should allow us to visit NREL labs, and have discussion with researchers in detail. NREL should have a list of current active research projects and needs for different expertise to distribute, and encourage individual discussions between experts of similar area.
8. Explain ways of collaboration with NREL (have a distinct short session during the introductory session). Allow time for tours — seeing is believing!
9. Tour of NREL research facility would have been much appreciated. What is lagged is the next step that universities should do besides RFP response to collaborate with NREL. In that sense, the one of the most important objective of this workshop has not met well.
10. This workshop didn't highlight NREL's research; it provided administrators' perspectives on NREL research. Next time, let your visitors spend time in labs, with working scientists and students. Make sure that your overview highlight the science that you're doing. Aspen-modeling technology for process engineering freely available. Great idea. Highlight this on your Web site. Sheehan's modeling efforts are commendable, but overblown. The best way to generate error rich estimates is to multiply sources of error. Multiple models do just that.
11. Consider cutting down on bulk of content presented since most presentations were rushed through. Huge volumes of material with less focus on critical next steps to build teams. Consider 2-step process: Step 1 - what we did. Step 2 - follow up on team building.
12. Separate block for facilities tours. More time for discussion.
13. Let NASULGC universities know about RFPs and opportunities for collaboration. How do we follow up if we are interested in further discussion with NREL staff? Copies of presentations or Web address would be helpful. Excellent workshop meeting. Excellent NREL staff and hosts. This was a very good experience — excellent.
14. Should be two entire days so that the program schedule could be a bit more relaxed. Also there should be a session 5 in which all attendees are tutored on how best to take advantage of

opportunities in funding and how best to network with NREL. Make presentations available on CD at onset of session. Could enable attendees to follow on their lap tops.

15. In breakout — more specific on research help needed at NREL. Please provide a copy on CD of all the powerpoint presentations!!

16. All excellent. Great workshop. Excellent content and contacts. Hope to work with NREL in the future.

17. Full speed ahead in developing collaborative arrangements with the institutions and the DOE/EERE/NREL and other labs. Have a final session to get all participants together for "debriefing."

20. Show some facilities to me.

23. A tour of the facility, not just one little area.

26. A little more time on NREL tour of facilities. Adequate synopsis of potential areas of collaboration with university facility (last workshop). Lots of excellent Powerpoint presentations. Need electronic copies or access via Web site. It was good to learn what DOE is not interested in research area.

Solar Energy:

1. By and large it was a waste of my time and \$. Please send details of the agenda and purpose of the workshop to attendees ahead of time and let your people know why we were here. I didn't need to come here for you to sell NREL to me!

2. I was hoping to participate in group discussions to elicit research project opportunities, and to discuss with NREL their recommendations for ways to "jump in" to the NREL collaborative research system. My suggestion is to include "roundtable discussions" in future workshops.

John Gustafson, FDLTCC

3. The presentations during the workshop were informative but there were few opportunities for effective interactions with NREL personnel and other workshop participants. Specifically, the kind of information that I was hoping to get at the workshop included:

(1) New directions and funding opportunities in solar energy (much of what I heard was about what had already been done).

(2) The opinions/thinking of other workshop participants and NREL personnel concerning future calls for proposals. (Other workshops held by organizations such as NSF are used to help formulate future program directions and future calls for proposals.)

4. If more information about the workshop materials, e.g., outlines of the topic which would be covered can be put on the Web page for people to check out before going to workshop, it will be really helpful.

5. More focus on opportunities to interact with and get funding from NREL. Less on specific NREL capabilities.

7. Some earlier contact with participants could be helpful to sort interests/opportunities. I would have enjoyed learning more about biomass.

8. The breakout sessions on Tuesday were just talks (lecture). Workshop, as I understand and know, is group interactions, back and forth discussions, etc. There was no input from the group. They were talks given by the "facilitators" to a "captive audience."

**DOE/National Association of State Universities
and Land Grant Colleges (NASULGC)**

**Biomass and Solar Energy Workshops
National Renewable Energy Laboratory**

August 3–4, 2004

AGENDA

TUESDAY, AUGUST 3

7:00 – 9:00 a.m.	Registration in the Ballroom Foyer	
8:15 – 8:30 a.m.	Welcome and Introductions Project Overview	Mike Harrington, WAAESD Jim Fischer, DOE EERE Board of Directors
8:30 – 8:45 a.m.	Welcoming Remarks	John Kersten, DOE GFO Patrick Lana, DOE CRO Richard Truly, NREL
8:45 – 9:30 a.m.	NREL Overview	Stan Bull, NREL
9:30 – 10:15 a.m.	Biomass Overview	Mike Pacheco, NREL
10:15 – 10:30 a.m.	Break	
10:30 – 11:15 a.m.	Solar Energy Overview	John Benner, NREL
11:15 – 11:30 a.m.	Workshop Logistics	Mike Harrington, Stan Bull
11:30 – 12:30 p.m.	Lunch	
12:30 – 1:00 p.m.	Travel to the FTLB and SERF	
1:00 – 3:00 p.m.	Breakout 1 (See details, page 2)	
3:00 – 3:15 p.m.	Break and move to next breakout	
3:15 – 5:15 p.m.	Breakout 2 (See details, page 2)	

5:15 p.m. Return to the Marriott
 6:30 p.m. Dinner at the NREL Visitor Center

WEDNESDAY, AUGUST 4

8:00 – 8:30 a.m. Travel to the FTLB and SERF
 8:30 – 10:30 a.m. Breakout 3 (See details, page 2)
 10:30 – 10:45 a.m. Break and Move to Next Breakout
 10:45 – 12:00 noon Breakout 4 (See details, page 2)
 12:00 noon Adjourn and Return to the Marriott

BREAKOUT SESSION TOPICS

Biomass Energy

Biomass A	Systems Analysis – Lifecycle and Environmental	John Sheehan	FTLB 153
Biomass B	Thermochemical Conversion	Richard Bain	FTLB 265
Biomass C	Feedstocks/Analytics/ Products	Ralph Overend Joe Bozell Mark Davis Gene Petersen	FTLB 268
Biomass D	Biotechnology Routes	Jim McMillan	FTLB 279

Solar Energy

Tuesday, August 3

Solar Energy A	Physics and Modeling	Timothy Coutts	SERF C111
Solar Energy B	PV Cell and Module Characterization Electro-Optical Characterization Surface Analysis Characterization Analytical Microscopy	Keith Emery Richard Ahrenkiel Joel Pankow Manuel Romero	SERF C108

Wednesday, August 4

Solar Energy C	Solar Thermal Systems	Hank Price Tim Merrigan	SERF C111
Solar Energy D	Solar Radiation Measurements	Tom Stoffel Steve Wilcox	SERF C108

PART 3

Three-Year Planning Document

The successful completion of the 2004 EERE-NASULGC Partnership Agreement's five pilot projects inspired a multi-year plan for continuing and expanding the partnership. A planning horizon of three years is needed to continue to develop the partnership relationship because:

1. Multi-year planning enables more efficient business operations;
2. The cultures of both organizations are adjusting to the dynamics of the partnership and time is needed for EERE and NASULGC to complete the transition;
3. Education material is enhanced with time; and
4. Communications has increased significantly between the universities and EERE but need to be planned over an extended period of time in order to advance.

The Executive Steering Committee of the partnership will be responsible for annual evaluations of partnership successes and approval of the Plans of Work for each year.

The five one-year pilot projects from the 2004 partnership have led to many accomplishments, including the transition of two projects to the staff level at EERE and NASULGC. The Project Leadership Team for Project 1 has established mechanisms for expanded cooperation and communications between the DOE/EERE and NASULGC institutions. For example, a web-based program has been created to enhance communications between DOE and NASULGC institutions regarding DOE Advisory Board appointments, peer reviews, planning committees, and other relevant activities (Tab 21). This communication system provides the capability to identify candidates from the NASULGC system for the various needs of EERE programs. Staff from EERE and NASULGC will be appointed to carry out the implementation of this project.

Project 4 provides another example of the partnership's transition of valuable work to the staff level. The Leadership Team for this project has identified barriers that restrict EERE engaging the research capacities of the NASULGC institutions that include intellectual property ownership, difficulty in meeting matching funds requirements, unclear instructions for preparing DOE grant applications, and electronic submission processes that are not user-friendly. EERE and NASULGC can now use this information in undertaking a set of corrective actions designed to improve the working relationships between the two organizations. Projects 1 and 4, while continuing at the staff level, no longer require formal involvement by EERE-NASULGC Partnership teams.

The three-year proposal establishes a framework for continuing the cooperative relationship established during 2004. The proposal outlines the objectives of future work that were identified by the Leadership Teams of Projects 2, 3, and 5 (including a new project), with added emphasis on an annual plan of work that will enable strategic implementation. The five proposed activities organized under headings that correspond to the budget line items outlined in the FY05 Plan of Work (Tab 4) are:

Activity 1

Enhancing EERE program impact by increasing the working relationships between NASULGC regional associations and EERE regional offices;

Activity 2

Institutionalizing the Extension outreach capacity in EERE programs;

Activity 3

Increasing public education about energy by augmenting youth education in science and math with EERE-related interactive modules;

Activity 4

Increasing the working relationships of EERE scientists and engineers with university faculty by expanding the joint university/EERE lab workshops to all EERE program areas; and

Activity 5

Developing methods to improve the formal exchange between EERE scientists and university engineers.

The emphasis in this current year (which is explained in-depth in Part 4 of the report) will be to implement projects to achieve the partnership objectives. Emphasis will be placed on expanding the breadth of activity to the full set of NASULGC-affiliated institutions and building new pathways for utilizing the leverage of NASULGC institutions for building new pathways for mutually beneficial coordinated activity. A significant part of the effort will involve training of staff and faculty at the NASULGC-affiliated institutions at the national and regional level, and implementing successful pilots throughout the system. The approach will vary by project, but in general, projects will move from pilots to implementation of these programs within the NASULGC and EERE systems.



PART 4

Plan of Work for FY05

FY05 activities, with detailed Plan of Work statements, have been identified for the three-year partnership plan. The processes, mechanisms, and budget required in FY05 to achieve the goals of each activity are presented below.

In addition to the FY05 activities listed below, we will continue to build on FY04 accomplishments in terms of enhancing communications between EERE and NASULGC. For example, the Autonomy web-based, searchable resume repository will be institutionalized in FY05. This repository was created to identify candidates from the NASULGC institutions for EERE Advisory Board appointments, peer reviews, planning committees, and other relevant activities. This cross-cutting effort will be carried out by NASULGC requesting, via e-mail distribution lists to Provosts, Vice Presidents and Deans, interested faculty to submit their resumes to the Autonomy Resume Repository System. The faculty expertise needed for EERE Boards and panels will be defined by the EERE Administrators and Program Managers annually. This activity will be managed by Sam Baldwin and Jim Fischer - EERE Board of Directors.

FY05 Activity 1: Regional Program Delivery

- **Enhance EERE program impact by increasing the working relationships between NASULGC regional associations and EERE regional offices.**

Both EERE and the University System conduct business through separate regional organizations. EERE delivers much of its deployment activities through six regional offices. The land-grant college system administers outreach, education, and research programs through regional associations. These regional associations manage a series of research, Extension and academic portfolios, and projects. For these reasons, expanding the evolving EERE-NASULGC partnership to engage identified regional associations will strengthen partnership development and increase accomplishments.

In FY05 we plan to develop regional programs that engage outreach and deployment programs. During this past year as a part of Project 2-B, a leadership team made up of state energy office, regional office, and university Extension personnel initiated planning to begin a pilot program utilizing the capacities of the extension system to deliver selected services of EERE — services for which delivery could take advantage of the wide and similar deployment of Cooperative Extension Offices. Of course, this delivery system differed among the pilot states. But the conclusion of this planning activity was that there was significant value to be added by involving the Cooperative Extension System in delivery of EERE materials. Also, the Project 2 Leadership Team compiled a list of existing interactions. We learned that there are many and varied activities that would benefit from a regional coordinated approach (See Tab 11).

This FY05 activity capitalizes on the existing Extension energy activities and the interest expressed in Project 2-B initial planning efforts. We propose to link EERE regional

offices with the well-developed Cooperative Extension Services network of offices and technical staff in all U.S. counties to deliver renewable energy educational programs. The possibility of expanding this cooperation to all of the NASULGC-affiliated institutions, and covering research and academic programs in addition to Extension is an activity that can occur in future years but is anticipated to proceed largely at the DOE regional level.

The process we propose to initiate in FY05 is to organize a national training session that is designed to establish a national focus for these program efforts, engage the Program Managers in these activities, and prepare trainers for regional sessions that will follow. It is anticipated that both NASEO and ASERTTI management will be invited to participate in a one-day session which is planned to lay out the national program. After this session it is anticipated that up to five trainers from each DOE region will be invited to the national training session, which will last for several days. They will be trained in the delivery of alternative energy sources materials that will be delivered to the states through subsequent training sessions offered by the DOE regional offices. The NASULGC institutions within the DOE regions and their partner state energy offices will send staff and faculty to participate in the regional trainings — up to five will be trained per state for NASULGC-affiliated institutions. Trainees will be paid to attend the national train-the-trainers session. Trainees at the regional sessions will be responsible for their own expenses. The training will include sessions on evaluation. These evaluations will be applied at the end of the year to provide information on how the training and delivery program can be improved.

These training sessions will be planned by a team that includes staff from EERE and the regional offices and staff from NASULGC and from the Regional Experiment Station and Extension Executive Directors. It is anticipated that these planning groups will be about 10 in number, and will meet as necessary, to conclude the planning and evaluations. The managers of the EERE/NASULGC Cooperative Agreement will make appointments and track the effectiveness of these groups. These groups will also identify the technologies to be delivered — which may vary among the DOE Regions and States.

The regions will work together, as follows.

- The EERE Western Region, the Regional Energy Offices, the state energy offices, and the Cooperative Extension Service will work with the Regional Executive Directors for the Western Region to cover Alaska, Washington, Oregon, Idaho, California, Nevada, Arizona, and Hawaii.
- The EERE Central Region will work with the same partners in the North Central region to cover Montana, North Dakota, South Dakota, Wyoming, Nebraska, Utah, Colorado, Kansas, New Mexico, Oklahoma, Texas, and Louisiana.
- The EERE Midwest Region will work with the same partners in the North Central Region to cover Minnesota, Wisconsin, Iowa, Missouri, Illinois, Michigan, Indiana, and Ohio.

- The EERE Southeast Region will work with the same partners in the Southern Region to cover Arkansas, Mississippi, Alabama, Tennessee, Kentucky, North Carolina, South Carolina, Georgia, and Florida.
- The EERE Mid-Atlantic Region will work with the same partners to cover Northeastern Pennsylvania, New Jersey, Delaware, Maryland, West Virginia, and Virginia.
- The EERE Northeast Region will work with the same partners in the Northeastern Region to cover Maine, New Hampshire, Vermont, New York, Rhode Island, Massachusetts, and Connecticut.

It is emphasized that a team, one-member from EERE and one from the Executive Directors, will elaborate this proposal and provide more definition before implementation. The result will be to cover the nation with energy training consistent with the Building America activities of FY04.

FY05 Activity 2: Energy and Extension Outreach

- **Institutionalize Extension outreach capacity in EERE programs.**

The NASULGC university system has research, outreach, and academic capacity to assist EERE to achieve its vision of a prosperous future where energy is clean, abundant, reliable, and affordable. In order to realize this vision, all aspects of the NASULGC system — research, extension and teaching — must be linked not only at the regional level as outlined in the previous activity, but also at the EERE program level. The processes, mechanisms, and operational guidelines for interaction of NASULGC institutions at the program level will be different for research, extension, and academics. Therefore, the partnership teams are suggesting that for FY05, our partnership limit its developmental work to engagement activities that develop processes, mechanisms and guidelines of partnership building between EERE programs and the Extension system of Land Grants. The Land Grant Extension was chosen because the partnership can build on the knowledge and success of FY04 Project 2-A involving integrating university Extension faculty with the Building Technology Program, specifically the Building America program. In Project 2-A, Building America program Extension faculty not only demonstrated successful outreach activities by working with the Building America program on energy efficient housing technologies (Tab 14 – Extension in Energy Efficiency Education), but also established working relationships with Building America personnel and teams (Tab 15 – Extension in Building America program and Tab 19 – Three White Papers – Project 2).

The purpose of this FY05 activity is to define and develop the processes, mechanisms and guidelines that build formal working relationships between Extension faculty at NASULGC institutions and EERE program scientists and engineers. FY 05 activities will build on the success of Project 2-A and continue to develop the partnership between the

Building Technologies program, in particular, the Building America program. Last year the partnership development was limited to one university in each of the EERE regions. This year we propose to expand the number of participating universities, understanding that building technologies that are applicable to each region will be identified. The strategy and the training approach, as well as the criteria for making the selection of the technologies, will be covered in a national train-the-trainers session (perhaps during or in conjunction with a Building America Teams meeting). We are anticipating that these program efforts can also be developed at the regional office level, where teams will also plan and conduct in each region one or more region specific train-the-trainers workshops for state energy office and Cooperative Extension personnel relevant to the Building America program's goals and objectives. In turn, these program leaders will work with local educators in their respective states to deliver energy efficient housing programming at the local level in each state in each region. The ultimate target audience is building contractors and their customers/potential customers, who would learn the importance of energy efficient homes. States will charge for these services consistent with their particular policies. It is expected that the charges will yield revenues consistent with the cost of the program.

It is emphasized that a team from EERE and the Executive Directors will elaborate on this proposal and will provide more definition before implementation. The immediate focus though will be on energy efficiency training consistent with the Building America Program. It is important that this effort look for opportunities to tie these efforts with the mortgage and insurance industries through critical areas such as certification and the potential of offering continuing education units (CEUs), which ultimately could provide benefits to home builders.

FY05 Activity 3: Education in Science and Technology

- **Increase public education about energy by augmenting youth education in science and math with EERE-related interactive modules.**

This activity will build on the youth education in science and technology work of FY04 - Project 3. We will incorporate feedback from the project of the previous year and work with EERE. We will increase the number of learning modules to at least six and provide them to the 4-H After-School Program. It is anticipated that we will continue to work with the National 4-H Council and NEED. In addition, conversations with Cathann Cress, the National Program Director at USDA for 4-H programs, indicated that in FY05, these education activities may extend to other program areas for 4-H, including the club, camping, and other major programs. A meeting of National 4-H program staff and DOE/EERE staff is planned to put more definite structure on the areas within next year's 4-H program. The materials contained in the modules will vary according to climate parameters in the respective regions.

In order to implement this activity, a national training-of-the-trainers effort will be conducted, similar to the efforts of last year and similar to the arrangement outlined in the two previous projects. That is, there will be a national team made of representatives from

EERE and Cooperative Extension that will set the terms of the training exercises that will be carried out through DOE regional offices and state energy offices in cooperation with Cooperative Extension's 4-H program. Specifically, the train-the-trainers program and the materials at the national level will be offered to a limited set of representatives from the regions. A second training focusing on the particular areas of application and interest in the regions will be conducted within the regions, with the states paying the cost of those attending. The regional train-the-trainers graduates will be responsible for the training and the programs within the specific states.

In addition to after-school programming, the kits that have been developed will be examined for their potential use in other 4-H programming efforts. For example, most states have in-school training programs and other programming efforts that run in parallel with the 4-H After-School Program. The materials developed for the after-school programs will also be evaluated for use in venues other than schools. These other venues will be determined within the regional offices and will vary by state and by the 4-H programming efforts in the states.

FY05 Activity 4: University-National Laboratory Workshops

- **Increase working relationships between DOE scientists and engineers and university faculty by expanding the joint university/DOE lab workshops to all EERE program areas.**

This activity will be an extension of FY04 Project 5 and will facilitate two additional meetings with the DOE Labs that are designed to bring together faculty from the NASULGC-affiliated institutions and scientists and engineers from the Labs. It is expected that about 75 professionals and staff from the universities will participate in each of these meetings. The format for the meetings will be more or less the same as last year. The meetings will be one and a half days in length and feature explanations of the research work underway at the Labs and opportunities for joint work, contracts, and for possible use of specialized equipment. As was suggested in last year's critique of the workshops, this year more time will be allocated for interactive sessions to discuss the future of a given program technology. We propose to conduct workshops involving the Wind and the Building Technologies programs.

Implementing the recommendations of the FY04 Biomass Workshop, conducted at NREL, a biomass/bioenergy/bioproducts "listening session" will also be conducted. This is a crucial step to creating a more integrated bioenergy-bioproducts effort. By involving DOE, Land-Grant Universities, and the Agricultural Research Service, other scientists, and industry representatives in such an activity, it will be possible to develop a very robust and effectively integrated plan that would include attention to the needed feedstocks. Agriculture is central in producing plants that contain new carbon platforms that can readily enter a bio-refinery. Drawing on this available expertise is essential to realizing a bio-based economy in the future.

The one difference this year will be that one of the training sessions will be at a DOE Lab not under EERE. There is significant research underway at the scientific labs of DOE. Overtures will be made to these Labs to determine their interest in hosting a session for the scientists from NASULGC-affiliated institutions. One of the training sessions will be at the NREL as was the case for both sessions last year. This session will focus on one of the renewable energy programs that was not the host for the visits last year.

Finally, there is interest in the USDA Labs in hosting one of these sessions. Possible candidates are Beltsville, Peoria, or the Southern Labs. The idea would be much the same as for the current visits. However, this time there would be interest in inviting the scientists from the NASULGC-affiliated institutions and from the DOE Labs.

FY05 Activity 5: Formal Exchange of EERE scientists and engineers and University Faculty

- **Develop methods to improve the formal exchange between EERE scientists and university engineers focusing on IPA in FY05**

During last year's pilot project activities, one thing that began obvious was the need for more scientist-to-scientist interactions within EERE and NASULGC institutions. There are numerous programs and ways to increase these interactions, such as sabbaticals, graduate student exchange, IPAs, etc. We propose for FY05 to focus on IPAs. We plan to identify a mechanism that will make it easier for scientists to move on IPAs from the NASULGC-affiliated institutions to DOE and vice versa. The rules are now apparently complex and discourage the use of this mechanism for affecting greater scientific cooperation. The project will develop a fast track way to get the approval of the authorities for making such arrangements, and to publicize this authority broadly among the land grants and among the program areas of EERE and the NASULGC institutions.

Should the need for a common database of candidates arise, the Autonomy data system developed to facilitate FY04 Project 1 could be evaluated for this purpose.

FY05 Partnership Budget

ACTIVITY	NASULGC	DOE	Total
<p>This budget represents an evenly shared investment in the Partnership for FY05. The budget below represents the anticipated distribution of funds for each activity in FY05. It should be emphasized that the exact expenditure per activity will be determined when plans are finalized for each activity during the activity initial planning session.</p>			
Regional Program Delivery	65,000	65,000	130,000
Energy and Extension Outreach	65,000	65,000	130,000
Education in Science and Technology	80,000	80,000	160,000
University-National Laboratory Workshops	80,000	80,000	160,000
Formal Exchange of EERE scientists and engineers and University Faculty	40,000	40,000	80,000
Administrative Support and Direct Overhead	110,000	110,000	220,000
Total	\$440,000	\$440,000	\$880,000

Minutes

DOE-NASULGC All-Teams Conference Call

December 16, 2004

The teleconference began at approximately 11:00 a.m. Eastern Time and the following individuals were present: Jim Fischer, Stan Johnson, Daryl Lund, Dick Wootton, Ian Maw, Jill Long Thompson, Michael Mills, Ron Brown, Peter Dreyfuss, Sam Donald, Tom Fretz, Dan Bartell, Mike Harrington, and David Waldrop.

- I. Accomplishment Reports – Five Project Teams
 - Stan Johnson asked the participants for changes to their project summaries as soon as possible.
 - Jim Fischer asked the participants to verify the outcomes section of the Draft FY05 EERE-NASULGC Proposal were correct for each project.

- II. Proposal for FY05
 - Daryl Lund inquired about staff support for the projects.
 - i. This issue is currently being addressed by Stan Johnson and Jim Fischer.
 - Lani Macrae (DOE) and Cathanne Kress are meeting with 4-H After-School representatives to develop a plan to make the EERE-NASULGC 4-H projects a permanent part of the 4-H After-School Program.
 - i. The Executive Directors of NASULGC were asked to assist in the development of this plan.
 - The group discussed the DOE regional Office (RO) role in the FY05 proposal.
 - i. Plans should be crafted by region in order to best utilize the varying resources in each region. The Executive Directors and the RO representatives should begin this process.
 - ii. ROs provide money to the State Energy Offices (SEO) based on plans submitted by the SEOs. We will have to work with the SEOs to have them incorporate the EERE-NASULGC projects into their plans so the ROs can properly fund the work.
 - iii. Approval for travel for SEO staff can be difficult. We should expect to compensate for this by offering virtual training.
 - iv. Mike Mills and Jim Powell will compile a list of meetings that could be conducive for holding an EERE-NASULGC project workshop in parallel. Dick Wotton, Stan Johnson, and Dan Bartell will identify potential NASULGC meetings that could also incorporate a project workshop.
 1. A one-pager will also need to be developed to summarize the type of workshop envisioned and the level of participation expected.

- Mike Mills outlined the 3-year project proposal option that will facilitate timely appropriations of DOE funds for collaborative projects under the EERE-NASULGC Agreement.
 - i. Attachment 1 provides a timeline for FY05 budget activities and meetings.

III. January Steering Committee Meeting

- The next Steering Committee meeting has been set for January 25, 2004 at NASULGC Headquarters from 10AM to 12PM.
- Each Project Team will bring one member each from EERE and NASULGC to the Steering Committee Meeting. Stan Johnson will coordinate the NASULGC representatives and Jim Fischer will coordinate the EERE representatives.

The next all-teams teleconference is scheduled for Thursday, January 13, 2005 at 11:00 AM Eastern time. The call-in number will be 301-903-6011.

The teleconference adjourned at 11:40 a.m. EDT.

ATTACHMENT 1

EERE-NASULGC FY05 Timeline

December 2004	Draft 3-year Proposal
January 2005	Initiation of funds transfer to NETL
January 2005	Initial agreement paperwork and NASULGC application prepared
February 2005	Final statement of work submitted to NETL for final agreement approval package
February 2005	Agreement package signed by David Garman
March 2005	Agreement implemented
March 2005	NASULGC requests funds from NETL
1 st week of April	Funds approved for payment by Oak Ridge Operations Office
1 st week of April	Funds transferred to NASULGC
June/July 2005	Steering Committee Meeting

NASULGC NEWSLINE

A MONTHLY UPDATE OF NEWS AND ANALYSIS FROM THE NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

Featured in this month's

Newsline:

- **NASULGC Issues Statement on College Costs**
- **SEVIS Fee Regulation Announced**
- **Kennedy Bill Would Require Reporting of "Legacy" and Early Admission Data**
- **Potential Partnership for NASULGC and Department of Energy**



Potential Partnerships for NASULGC, Department of Energy

Department of Energy officials are interested in expanding opportunities for NASULGC members to forge partnerships with the agency's Energy Efficiency and Renewable Energy Programs (EERE), says James Fischer, a former dean at Clemson University who recently was appointed to the EERE Board of Directors.

Agency officials are interested in developing new and innovative partnerships and educational models with universities, especially land-grant universities, foundations, and the agricultural, industrial and business communities, Fischer says. Such partnerships between EERE and the academic community hold the potential for joint research, internships, and a wide range of off-campus learning opportunities for students and faculty (see box).

The EERE Board has five members, each with a specific focus ranging from international affairs to technical and analytic integrity to the university/education board seat that Fischer holds. Fischer says he hopes to help EERE find ways to negotiate complex university structures to achieve an interdisciplinary and integrated approach.

Emphases of the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy Programs

- Biomass Program:** Using domestic, plant-derived resources to meet U.S. fuel, power, and chemical needs
- Building Technologies Program:** Aiding homes, schools, and businesses to use technologies that help them use less energy and, ultimately, generate as much power as they use
- Distributed Energy & Electric Reliability Program:** Developing a more reliable energy infrastructure and reduced need for power plants
- Federal Energy Management Program:** Leading by example through saving energy and taxpayer dollars in federal facilities
- FreedomCAR & Vehicle Technologies Program:** Fostering less dependence on foreign oil, and eventual developing an emissions-free, petroleum-free vehicle
- Geothermal Technologies Program:** Tapping the earth's energy to meet heat and power needs
- Hydrogen, Fuel Cells & Infrastructure Technologies Program:** Paving the way toward an economy using hydrogen rather than carbon fuel sources
- Industrial Technologies Program:** Boosting the productivity and competitiveness of U.S. industry through improvements in energy and environmental performance
- Solar Energy Technology Program:** Using solar power to generate electricity and heat water and buildings
- Weatherization & Intergovernmental Program:** Accelerating the use of today's best energy-efficient and renewable technologies in homes, communities, and businesses
- Wind & Hydropower Technologies Program:** Harnessing America's wind and water resources for clean power generation

For more information, go to www.eere.energy.gov

NASULGC

NEWSLINE

A MONTHLY UPDATE OF NEWS AND ANALYSIS FROM THE NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES

NASULGC

117th Annual Meeting

San Diego California

San Diego Marriott Hotel and Marina
November 14–16, 2004



See page 3 for Annual Meeting highlights.

Speakers



Opening General Session Speaker

Leon E. Panetta

Co-Director, Leon & Sylvia Panetta Institute for Public Policy, and Adviser to the Chancellor of the California State University System
Sunday, November 14, 5:00 P.M.

"The Role of Education in the Age of Paradox"



Council of Presidents Luncheon Speaker and George Washington Carver Lecturer

Frederick S. Humphries

Former President, Florida A&M University, Tennessee State University, and the National Association for Equal Opportunity in Higher Education

Monday, November 15, 11:45 P.M.

"The Role of the Agricultural Sciences in the 21st Century"

NASULGC Campuses Undertake Wide Variety of Voter-Registration, Get-Out-the-Vote Events

NASULGC campuses across the country are mounting voter-education and get-out-the-vote activities targeting students this fall, according to an electronic survey conducted by the NASULGC Office of Public Affairs. Institutions were queried after some recent criticism that campuses were not doing enough and not complying with a provision of the Higher Education Act requiring that voter-registration forms be requested for all students at least 120 days before the registration deadline.

The following are examples of the varying and creative efforts by NASULGC institutions to boost voter registration and interest in national politics on campus:

- At the University of Alabama, the Student Government Association (SGA) and other campus organizations have been active in get-out-the-vote efforts, partly in conjunction with a competition with the University of Tennessee to see which university can register the most students. Voter registration efforts began this summer at orientation sessions for incoming freshmen. The president of the SGA and university's Vice President for External Affairs filmed a commercial urging students to be responsible voters,

which airs on the Jumbotron in the football stadium prior to home games, as well as during television broadcasts of the games.

Voter registration stations are also set up in the center of campus and near the stadium before home football games. The SGA also planned voter-registration drives at academic buildings on campus. Further, the Office of Residential Life recently held a "Rock the Vote" program that included voter registration.

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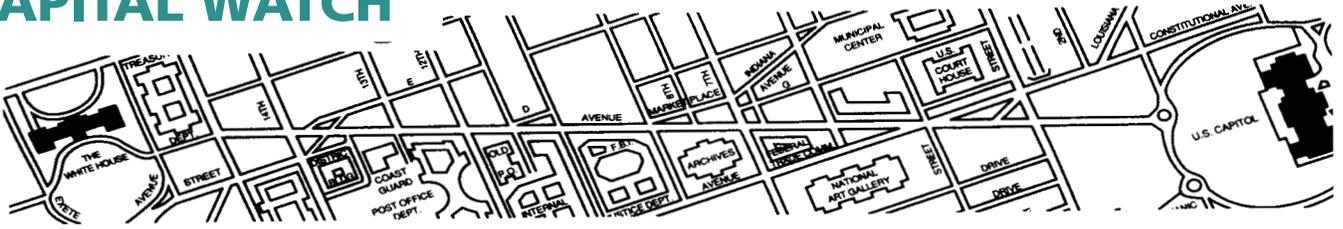
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▶ CAPITAL WATCH



A Roundup of Washington News that Affects Higher Education

New Tax Bill Limits Deductions For Charitable Donations

A major corporate tax bill recently passed by both Houses of Congress and sent to President Bush, termed “The American Jobs Creation Act,” contains a provision that will limit the charitable deduction for contributions of patents, copyrights, trademarks and other intellectual property to universities and other qualified institutions. NASULGC and several other higher-education groups had opposed the provision, arguing that its passage would cause a serious drop in the number of patents and other types of intellectual property donated to colleges and universities.

In a recent letter to the House and Senate negotiators working on a compromise version of the measure, the groups had opposed its provisions for determining the value of the tax write-offs allowed for gifts of patents and other intellectual property. Currently, the letter noted, charitable contributions of intellectual property are deductible at fair market value. This tax incentive has encouraged businesses holding valuable patents to seek out non-profit universities to provide them with the opportunity to develop important technologies resulting in new discoveries, the groups said. Under the new legislation, donors can deduct either the amount of money they had spent to create the item or the item’s fair-market value, whichever is less. ■

Higher Education Act Extended, Student-Loan Loophole Closed

Before adjourning for a three-week recess prior to the November 2 elections, Congress passed two

higher education-related bills. One extends the Higher Education Act for one year (until September 30, 2005), and the second closes for one year a loophole in the federal student loan program that guarantees certain lenders an interest rate of 9.5 percent. The loophole has allowed some companies making student loans to receive millions of dollars in excess loan subsidies, critics said. Under The Taxpayer-Teacher Protection Act of 2004 (H.R. 5186), the savings from eliminating the loophole would be used to forgive loans for borrowers who teach mathematics, science, and special education in elementary or secondary schools and those who teach in low-income schools. NASULGC and several other higher-education associations had supported the legislation. ■

Measure Stiffens Penalties for Barring Military Recruiters

Congress has passed a bill containing a provision that increases penalties for colleges and universities that bar military recruiters from their campuses. The measure, tucked inside legislation authorizing military-related appropriations, would prohibit institutions that don’t allow recruiters on campus from receiving federal funds from the Central Intelligence Agency, the Departments of Homeland Security and of Transportation, and the Department of Energy’s National Nuclear Security Administration. The measure broadens an existing law, known as the Solomon Amendment, that bars colleges from receiving funding from the Defense Department if they refuse to allow military recruiters on campus. A number of campuses have opposed

military recruiting on campus because the Pentagon’s policy toward gay and lesbian members of the military (“don’t ask, don’t tell”) is contrary to some colleges’ anti-discrimination policies. ■

Associations Offer Testimony on Foreign-Student Visa Issues

NASULGC joined two other higher-education associations in testimony to the House of Representatives’ Government Reform Committee on September 20 concerning student visa issues. Nils Hasselmo, President of the Association of American Universities, testified on behalf of the three groups, which also included the American Council on Education.

While acknowledging the Bush Administration’s efforts to work with colleges to ease visa difficulties for foreign students and scholars, Hasselmo said that significant problems remain. He recommended the following steps:

■ *The validity of Visa Mantis security clearances should be extended* for international students, scholars, and scientists from the current one-year period to the duration of their course of study or academic appointment. This would prevent the need for repetitive security checks that cause visa delays.

■ *A timely process should be established* by which exchange visitors holding F (student) and J (scholars/scientists) visas can revalidate their visas, or at least begin the visa-renewal process, before they leave the United States to attend academic and scientific conferences, visit families, or attend to personal business.

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117th NASULGC Annual Meeting

November 14–16, San Diego, California

Program Highlights

Special Plenary Session for Councils and Commissions “Looking Backward, Looking Forward—What is the Relevance of Brown vs. Board of Education Today?”

Tuesday, November 16, 8:30 – 10:00 A.M.

Jim Clifton, Chairman and CEO of The Gallup Organization, and **Christopher Edley**, Dean of the Boalt Hall School of Law at the University of California, Berkeley, will be the featured speakers at this event. Clifton will present polling and demographic data based on Gallup surveys exploring race relations in America and the aftermath of the Brown decision. Edley, a co-founder of the Harvard Civil Rights Project and an adviser to former President Clinton, will discuss the impact of the historic Supreme Court decision and provide a national perspective on the challenges that remain in educating our increasingly diverse student body.

Regional University Collaboration for Homeland Security

Monday, November 15, 8:30 – 10:00 A.M.

Council on Governmental Affairs

The University of California, San Diego's strategic location exposes it to a range of concerns including both port and border security, as well as proximity to large military facilities. This session is a case study of collaboration between campus and community addressing local homeland security planning and strategies, including challenges faced and lessons learned.

Marye Ann Fox, Chancellor, University of California, San Diego, and **Stephen L. Weber**, President, San Diego State University, will moderate. Panelists are **Mohan Trivedi**, Professor, Electrical and Computer Engineering, UC-San Diego; **Mark Koro**, Vice President for Security, Qualcomm; and **Pam Scanlon**, Director, Automated Regional Justice Information System.

Task Force on International Education Final Report

Sunday, November 14, 8:30 – 4:30 A.M.

Commission on International Programs

William B. DeLauder, *President Emeritus, Delaware State University*, will preside. The Commission on International Programs (CIP) will issue a report with recommendations for NASULGC institutions to improve international education and build global competence on their campuses.

Financing the New Student Life Style—Is It an Arms Race?

Monday, November 15, 1:45 – 3:15 P.M.

Joint Session: Council on Student Affairs,
Council on Business Affairs

Speakers: **John Augustine**, Managing Director, Lehman

Brothers; **Marlesa Roney**, Vice Provost for Student Success, University of Kansas; **Dean L. Bresciani**, Vice President for Student Affairs, Texas A & M University

Privatization of Higher Education Versus Redefining the Social Compact

Monday, November 15, 8:30 – 10 A.M.

Joint Session: Council on University Relations and
Development, Council on Business Affairs

Speakers: **Katharine Lyall**, President Emeritus, University of Wisconsin System, and Senior Scholar, The Carnegie Foundation for the Advancement of Teaching;

Mark Yudof, Chancellor, University of Texas System
These two seasoned CEOs of major university systems will discuss the options open to public universities as state resources decline and pressures grow to consider higher education as a private benefit rather than as a public good. Is it too late to redefine the social compact that originally led states to use tax dollars to make public higher education broadly accessible to a state's residents?

The 2005 Revision of the Carnegie Classification System

Monday, November 15, 1:45 – 3:00 P.M.

Council on Academic Affairs

Speaker: **Alexander C. McCormick**, Senior Scholar, The Carnegie Foundation for the Advancement of Teaching

Building Organizational Capacity

Monday, November 15, 3:30 – 4:45 P.M.

Joint Session: Council on Business Affairs and Student Affairs

Speaker: **James E. Morley**, President and Chief Executive Officer, National Association of College and University Business Officers

Linking the Land Grant Mission through Personal Financial Education and Student Experiential Learning

Monday, November 15, 4:45 – 6:00 P.M.

Joint Session: Board on Human Sciences,
Board on Agriculture Assembly

This session will feature a presentation by students of the University of Arizona's Students In Free Enterprise (SIFE) and Credit-Wise Cats program, emphasizing college students' credit and personal financial issues.

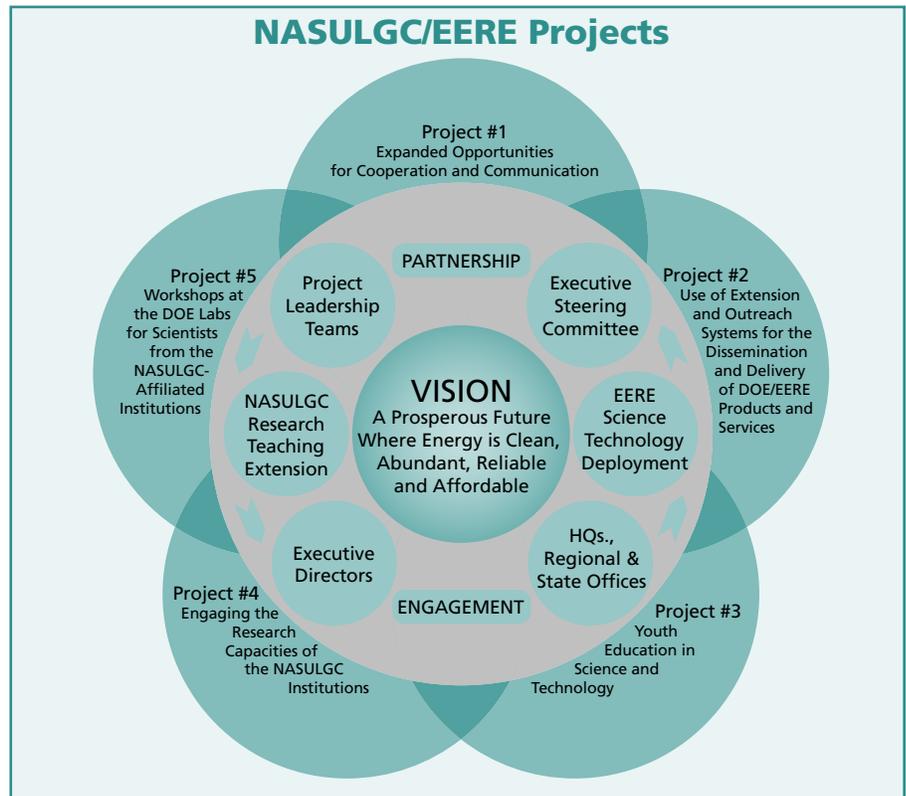
Registration details are available online at www.nasulgc.org

NASULGC, Department of Energy Cooperate on Pilot Projects

NASULGC and the Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) are collaborating on five one-year pilot projects that focus on energy research and education. David Garman, Acting Under Secretary of Energy, will report on their progress during the NASULGC Annual Meeting, November 14–16 in San Diego, CA. The projects have been under way since last winter.

EERE, with a \$1.2 billion annual budget, is the organization within the Department of Energy charged with developing alternatives to traditional energy production and consumption. It leads the federal government's research, development, and deployment efforts in biomass, geothermal, solar, wind, and other renewable and energy-efficiency technologies.

NASULGC and EERE have set up project leadership teams that include representatives from both organizations who have experience in research, extension, and curriculum development. Last year the Department of Energy appointed James Fischer to the EERE Board of Directors to help



build the basis for cooperation with the NASULGC institutions and other higher-education institutions in the United States. His NASULGC counter-

part is Stanley Johnson, Vice President for Extension at Iowa State University. Each organization brings specific

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NASULGC/EERE Projects

Returning to Our Roots and the EERE Pilot Projects

The Kellogg Commission's *Returning to Our Roots* report discusses the need to improve communication and to construct bridges between disciplines. Project #1 encourages collaboration between EERE and the NASULGC institutions through improved communication, such as increasing the appointment of scientists and administrators from NASULGC-affiliated institutions to DOE advisory boards and review teams.

The application of knowledge for the benefit of society is an important aspect of Project #2, which seeks to expand the use and adoption of EERE products and services through the Extension and Outreach Services of the NASULGC-affiliated institutions. One of the activities in progress is the review of a draft Builder's Guide that will be tested and evaluated by eXtension educators at six universities across the country.

The *Roots* report encourages partnerships between the higher education community and the field of pre-kindergarten through grade 12 education to prepare young people for success in college and throughout their lives. Project #3 involves engagement of the 4-H Youth Development Program, with an emphasis on "hands-on learning" or "learning by doing." Seven 4-H after-school

program sites across the country have been selected as pilots for a math and science experiential learning program. Applications of EERE lighting curriculum material allow participants to apply physics, mathematics, and other disciplines to lighting and other technologies.

Another aspect of engagement is fostering institutional mechanisms that simultaneously spark critical thinking and academic entrepreneurship, and encourage creative energies to move the institution forward. Project #4 focuses on increasing the participation of NASULGC institutions in EERE solicitations and investigating the role of intellectual property rights (IP) regulations of the universities and colleges in their partnering work with EERE.

Finally, the *Roots* report calls for enlarging opportunities for faculty and students to gain access to research and new knowledge through off-campus learning experiences. Project #5 involves expanding the collaboration of NASULGC-affiliated institutions with EERE's work at the national laboratories. Two workshops focusing on biomass and solar technologies were held at the National Renewable Energy Laboratory on August 3 and 4, attracting the participation of 120 college and university faculty members.

Voting

Continued from page 1

- At California State University in Sacramento, several on- and off-campus groups sponsored tables in the Library Quad where students could register to vote in the weeks before the November 2 election. Registration stations in alternative locations, such as in residence halls, also were planned.
- Texas A&M has held at least four campus-wide voter-registration drives in recent weeks. The drives were sponsored by the Legislative Relations Committee, a branch of student government; the College Republicans; Aggie Democrats; and Lambda Theta Alpha Latin Sorority, in conjunction with Hispanic Heritage Month.
- Cornell University is sponsoring a Mock Election to increase awareness of the political process, with "presidential" candidates for four "third parties" facing off in debate. High-profile political speakers also have appeared on campus. A range of campus political groups sponsored the events, including the Cornell Political Coalition, campus publications including *The Cornell Review* and *The Sun*, the Cornell Democrats, the Cornell Republicans and the NAACP, among others.

- At the University of Maine, the UMaine/UVote program is helping to facilitate discussion and provide voter-registration opportunities for students. Democratic Vice Presidential nominee John Edwards paid a visit to campus after an invitation from UMaine/UVote. In addition to ongoing voter-registration activities, several lectures were planned, as well as forums with local candidates and possible debates on national issues featuring university students active in campus political organizations.
- Students at Mississippi State University and other institutions in Mississippi have been cooperating for two years on a statewide voter-registration and education effort called "Impact Mississippi."
- At Wichita State University, the university libraries kicked off a month-long 2004 Register to Vote campaign on September 18. Qualified residents may register to vote in Kansas at the libraries.
- At the University of Houston, several different student groups have held voter-registration drives. In addition, the Women's Resource Center held a voter registration drive in conjunction with a 19th Amendment "birthday party" during the first week of classes. Further, the director of the

resource center is a deputized voter registrar and registered people daily.

- At least three voter-registration campaigns are under way for students at the University of Cincinnati, one sponsored by College Republicans, one by the Young Democrats, and a non-partisan effort tied to the campus' service-learning program.
- The University of Connecticut sponsored two days of activities intended to encourage students and other members of the university community to vote in the upcoming presidential election. The events, free and open to the public, included panels on topics such as terrorism, the economy, polling, war, and how the media cover elections. The panels' speakers included faculty members, alumni, and other experts. The campaign also featured an evening with MTV's *Rock the Vote* and two members of the cast of the network's *Road Rules* show. A committee of faculty, staff, and students planned the sessions after University President Philip E. Austin called on the community last spring to encourage students to become engaged in the political process.

For more information and links describing these activities and others, go to www.nasulgc.org ■

NASULGC, DOE

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resources and interests to the partnership, and each benefits from the collaboration, representatives say. Working with NASULGC institutions gives EERE the opportunity to use the cooperative extension network to improve the dissemination of results coming from university researchers and DOE research laboratories, to spread the use of energy-saving and renewable-energy technologies for residential, commercial, and other sectors. For NASULGC, the benefits of working with EERE include helping its member universities increase their responsiveness to practical problems and to provide opportunities for faculty and students to gain access to

research and new knowledge.

The pilot projects are the outgrowth of recommendations by the Kellogg Commission on the Future of State and Land-Grant Universities. The commission's report, *Returning to Our Roots*, discussed the need to spur higher education to become more adaptive and responsive to students and to societal changes by redesigning teaching, research and extension services to engage more fully with their communities. Finding new ways to partner with federal agencies is also an important element in that engagement, as the pilot projects demonstrate.

EERE also has undergone a reorganization that created a board position focusing exclusively on universities and education. It is seeking to build a

long-term partnership with universities as a mechanism for developing and disseminating energy efficiency and renewable-energy production technologies. Additional information on the projects is located at <http://www.ncfap.org> ■

NASULGC NEWSLINE

NASULGC Newsline is a regular publication of the National Association of State Universities and Land-Grant Colleges, whose membership includes 211 public research universities located in all 50 states and the U.S. territories.

Send letters, comments, and suggestions to NASULGC Newsline, 1307 New York Avenue, NW, Suite 400, Washington, DC 20005-4722. Phone (202) 478-6040 Fax: (202) 478-6046 Email: cfields@nasulgc.org

NASULGC President: C. Peter Magrath
Editors: Cheryl M. Fields, Director of Public Affairs; Sally M. O'Brian, Assistant Director of Public Affairs

Capital Watch

Continued from page 2

■ *Visa reciprocity agreements should be revised between the United States and key countries, such as China and Russia, to extend the duration of the visas each country grants citizens of the other. This would reduce the number of times that visiting international students, scholars, and scientists must renew their visas.*

■ *Department of Homeland Security and the State Department should move forward on a proposed pilot study in China and India in which the State Department would collect the SEVIS fee directly from international students and scholars.*

■ *U.S. leaders should make clear and frequent statements that the nation welcomes international students, scholars, and scientists, and that the visa process should identify and focus on possible problem cases, rather than creating unnecessary bureaucracy and paperwork.*

Added Hasselmo: "We do not believe it serves our national or homeland security to waste unnecessary bureaucratic resources on individuals who have demonstrated that they pose no threat and have a legitimate purpose here. Those are resources better spent on detecting and keeping out those who pose a threat. When we create unnecessary barriers, we not only damage our economy and the research enterprise, we also harm our nation's security."

A survey conducted last February by several organizations, including AAU and NASULGC, showed that from fall 2003 to fall 2004, nearly half (47 percent) of the 530 responding universities experienced a decline in graduate applications from international students, Hasselmo noted. Among the 25 research institutions that enroll the most international students, all indicated drops in graduate-school applications from international students. Nine indicated a decrease of 30 percent or more; six reported a decrease of between 11 and 30 percent. ■

Newsletter Provides Updates on Student, Scholar Visas

The Student and Exchange Visitor Program (SEVP) in the Department of Homeland Security has launched a newsletter to provide information on issues and events affecting the Student and Exchange Visitor Information System (SEVIS). The newsletter can be accessed online at (www.ice.gov/graphics/sevis/pdf/SEVISnewsletter0904.pdf). It describes progress on the China-India pilot program, outlines upcoming changes to the SEVIS fee process, and notes the availability of SEVIS forms online.

Concerning the pilot project, which would allow international students and scholars to pay the required \$100 SEVIS fee at the nearest U.S. embassy or consulate, the newsletter said a target date of early 2005 has been set for implementation. Officials of the Department of Homeland Security's SEVP office and the Department of State's Consular Affairs Office continue to discuss technical issues. In China, students and exchange visitors will probably use the bank that currently is being used to process visa fees, while in India the fee will be paid at the embassies and consulates, as is now done for visa applications.

In other news, some refinements to the SEVIS payment process will be implemented later this fall after testing and evaluation are complete. For instance, applicants will be able to use the Western Union Quick Pay Service to pay at Western Union locations worldwide that provide this service. Also, a SEVIS "Customer Service" Web site will allow students or exchange visitors to check the status of their payments, including whether the payment has been received and the date the receipt was mailed, for example. The Web site, which also includes a list of Frequently Asked Questions, can

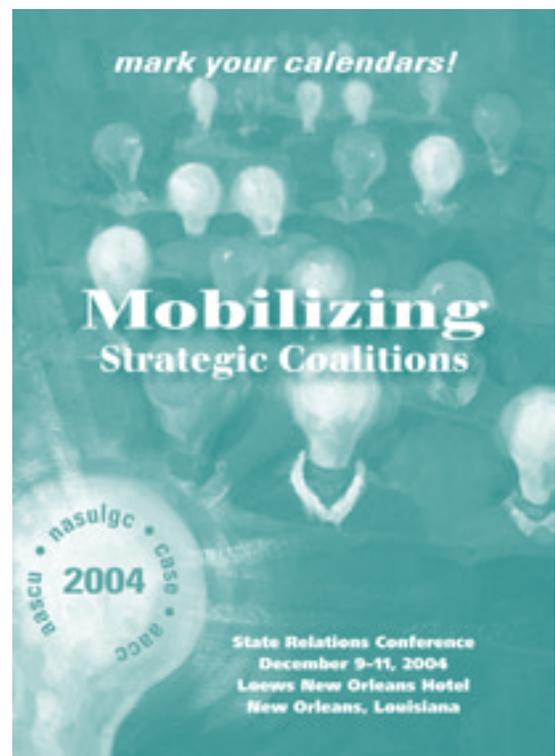
be accessed at www.ice.gov/graphics/sevis/index.htm ■

Publishers File Suit over Trade Embargo

A group of publishers and authors' associations recently filed suit in federal court in New York against the Office of Foreign Assets Control of the U.S. Treasury Department, which enforces regulations against countries under U.S. trade embargoes. The lawsuit asked for an immediate injunction against enforcement of controversial regulations that require publishers to file requests for licenses if they want to edit articles and books by authors in embargoed countries, such as Cuba, Iran, and Sudan. The suit, filed by the Association of American Publishers' Professional and Scholarly Publishing Division, the Association of American University Presses, the PEN American Center, and Arcade Publishing, also asked the court to strike down the regulations.

The Office of Foreign Assets Control has justified the regulations on the grounds that editing the papers and books of foreign authors is equivalent

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2005 Call for Nominations

Michael P. Malone International Leadership Awards

The Commission on International Programs (CIP) of the National Association of State Universities and Land-Grant Colleges (NASULGC) seeks nominations for the Michael P. Malone International Leadership Awards. The awards, dedicated to the memory of Michael P. Malone (1940-1999), were established in 2000 to provide national recognition for careers of outstanding contributions to international education at state and land-grant institutions. The awards are designed for individuals who have made significant contributions to international programs, rather than those who have had a long career of international responsibilities.

The Commission can make *up to two awards* annually in one or a combination of the following three tracks:

Track I: CEO's and Key University Administrators

This track is for Chief Executive Officers or Key Administrators of NASULGC members who have provided exceptional leadership to the development of international programs.

Track II: Faculty and Staff

This track is for faculty or staff of NASULGC member institutions or of institutions/organizations abroad who have made outstanding contributions toward furthering international programs on campus, nationally or internationally, and DO NOT have international activities or programs as a primary responsibility.

Track III: Public Officials and Individuals Representing Consortia or Non-Government Organizations (non-academic)

This track is for individuals who have provided leadership through government consortia or NGO's to enhance the international programs of NASULGC members.

In all categories, individuals may be recognized for their accomplishments, either based on their cumulative record or for specific outstanding contributions. Accomplishments in all areas of international education and exchange may be considered.

All nominations for candidates who did not win last year have been retained. If you wish to re-nominate such a candidate, please use the contacts listed below. Supplementary material in support of a re-nomination will be accepted.

The Commission must receive all nominations no later than **March 11, 2005**. For additional information, go to the CIP Web site: http://www.nasulgc.org/comm_intprogs.htm or contact Jessica Ahlers, Administrative Assistant for Federal Relations (International), NASULGC, 1307 New York Ave., Suite 400, NW, Washington DC, 20005; telephone: 202/478-6030, fax: 202-478-6046, email: jahlers@nasulgc.org

Capital Watch

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to providing them with a service, thus violating trade embargoes.

In 1988, Congress had specifically exempted "information or informational materials" from embargoes. Later, however, the assets-control office adopted a more stringent approach, exempting only informational materials that were "fully created" by people in embargoed countries and that had not been substantially altered—in this case, edited—in the United States. In September 2003, for example, Treasury officials had told the Institute of Electrical and Electronic Engineers (IEEE) and other societies publishing peer-reviewed journals that editing submissions

from authors in countries under a U.S. trade embargo, such as Cuba and Iran, would require a special license. As a result of that interpretation, some U.S. publishers had ceased publishing works from such countries altogether.

Then in April 2004, the Treasury Department appeared to agree to ease its ban on the editing of articles submitted by authors from nations under U.S. trade embargoes (see Newsline, April 2004). In a letter sent April 2 to the Institute of Electrical and Electronic Engineers, the agency said that the organization's peer review, editing, and publishing were "not constrained" by regulations from the Treasury Department's Office of Foreign Assets Control. While the letter only referred to IEEE's journal,

IEEE president Arthur Winston was quoted in The New York Times as saying he believes the ruling would be "a relief for nearly everyone" in the scholarly publishing community.

But Treasury's move left some American publishers uncertain, resulting in the decision to proceed with the lawsuit. The American Association of Publishers, for example, said that the decision to ease the ban provided no assurance that other publishers, whose methods and means of communication between editors and foreign authors differed from those used by IEEE, would not leave themselves open to criminal penalties if they do not seek a government license to pursue publishing that they believe is protected by the First Amendment.

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Capital Watch

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Violators of the U.S. embargoes face stiff fines and even jail time.

Six Universities Win Awards to Build Nanoscale Research Centers

The National Science Foundation has announced plans to award more than \$69-million over the next five years to create six more centers for research in nanoscale science and engineering at six universities. Three of the six are NASULGC institutions. Since 2001, eight other centers have been established.

The following universities won the new grants:

- Northeastern University: The Center for High Rate Nanomanufacturing will receive \$12.4-million to develop nanomanufacturing techniques and to assess the environmental impact of the processes.
- Ohio State University: The Center for Affordable Nanoengineering of Polymer Biomedical Devices will receive \$12.9-million to develop polymer-based nanoengineering technology with potential medical applications.
- Stanford University: The Center for Probing the Nanoscale will receive

Calendar Highlights

- November 14–16** NASULGC 117th Annual Meeting, San Diego Marriott Hotel and Marina, San Diego, CA
- December 8–10** Board on Agriculture Assembly, New Deans/Directors/Administrators/National Program Leaders Orientation, Embassy Row Westin, Washington, DC
- December 9–11** NASULGC, AASCU, CASE, AACC State Relations Meeting, Loews New Orleans Hotel, New Orleans, LA
- February 27–March 1** Joint Academic Programs Section/AASCARR Meeting, Washington, DC

\$7.5-million to develop nanoprobes and applications designed to answer fundamental questions in science and to enhance the ability to measure and control nanoscale phenomena.

- University of California at Berkeley: The Center of Integrated Nanomechanical Systems will receive \$11.9-million for research on the science and engineering of nanomechanical systems, with applications in chemical and biological sensing.
- University of Pennsylvania: The

Center on Molecular Function at the Nano/Bio Interface will receive \$11.4-million for research on the interface of nanotechnology and biology at the molecular level.

- University of Wisconsin at Madison: The Center for Templated Synthesis and Assembly at the Nanoscale will receive \$13.4-million for research on the self-assembly of complex materials and building blocks, including biological materials at the nanoscale level. ■

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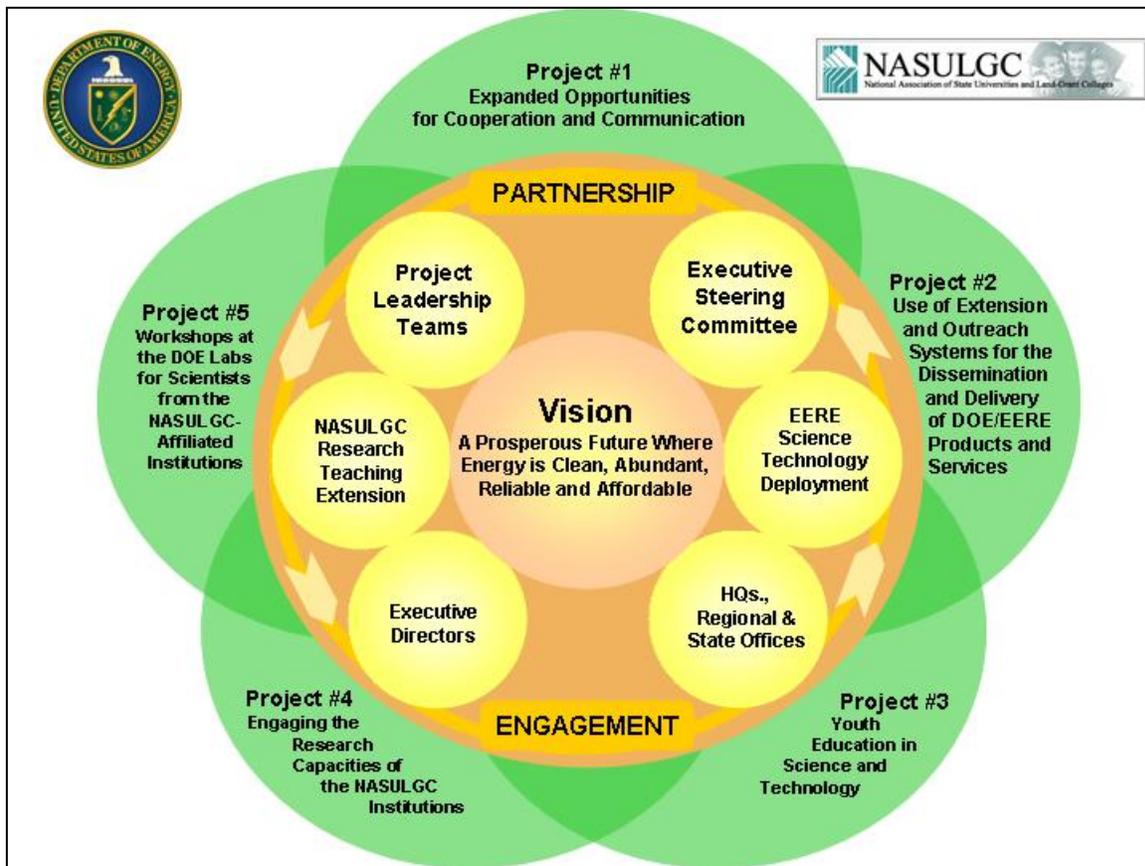


OVERVIEW

NASULGC/DOE Partnership

National Association of State Energy Officials
Agriculture and Rural Development Task Force
Tuesday, September 28, 2004, 4:30 pm–5:30 pm
Chicago IL

In early 2004, the U.S. Department of Energy’s Office of Energy Efficiency and Renewable Energy (EERE) and the National Association of State Universities and Land-Grant Colleges (NASULGC) agreed to evaluate collaborative opportunities involving EERE programs, laboratories, regional offices, and the state energy offices. For the initial pilot year program, five specific areas of collaboration were identified (detailed below). The overall management for the pilot year partnership is provided by a 10-person steering committee consisting of key executives from EERE and NASULGC. Leadership for each of the projects is provided by a leadership team consisting of senior level managers from both DOE and NASULGC. Nine EERE personnel and 1 NREL person, as well as 10 NASULGC personnel, consisting of representatives from NASULGC, the Agricultural Experiment Station and/or Extension Directors Regional Associations, were assigned to the project leadership teams.



Vision, Partnership Engagement, and Projects

Project #1: Expanded Opportunities for Cooperation and Communication

Leadership Team: Daryl Lund (Executive Director, North Central Region – Research), Carl O’Connor (Executive Director, North Central Region – Extension), Peter Dreyfuss (Director Midwest Regional Office), Tobin Harvey (Senior Advisor to Assistant Secretary)

Objective: The objective is to assess existing communication channels between EERE and NASULGC institutions and to explore enhanced communication channels.

Accomplishments-to-Date: The following processes are under development: a process to assist EERE managers in the identification of critical expertise from NASULGC institutions for peer review and merit review teams; a process that will enable NASULGC to make recommendations of qualified individuals to serve on EERE Advisory Boards; and a process that establishes communication links with the Advisory Boards and all NASULGC institutions.

This effort has resulted in presentations at both DOE and NASULGC meetings about the opportunities and capabilities of each organization. Two NASULGC institution faculty members were appointed to DOE Advisory Boards. The project has identified several opportunities for faculty and staff at NASULGC-member institutions to participate in peer reviews, planning committees, and other activities within EERE calling for expertise from outside EERE and DOE. A procedure is also being designed for regular communication of DOE’s expertise requirements to the various groups that NASULGC can contact for potential nominees.

Project #2: Use of Extension and Outreach Systems for the Dissemination and Delivery of DOE/EERE Products and Services

Leadership Team: Ron Brown (Executive Director, Southern Region – Extension), Dick Wootton (Director, NASULGC Headquarters Extension), Bill Becker (Director, Central Regional Office), Ellen Lutz (Chair Deployment Task Force), Joe Konrad (Office of Weatherization and Intergovernmental).

Objective: The overall objective is to develop prototype models that engage the Extension Service in the deployment and education of EERE technologies and services. Goals include: (1) improve communication among university faculty, DOE scientists, State Energy Offices and home building contractors; (2) achieve greater energy efficiency of new homes; (3) evaluate the Build America “Best Practices Guide” for education purposes; and (4) demonstrate and test a variety of ways that Extension can add value to DOE research.

Accomplishments-to-Date

Subproject A: Seven NASULGC institutions are participating in a pilot program, representing the states of **Alaska, Delaware, Florida, Kentucky, Louisiana, Minnesota, and New York**. University faculty will use the DOE Building America manual in workshops for contractors in Fall 2004. Faculty have attended two professional development workshops conducted by DOE scientists. Collaborators: Mark Ginsberg (Board of Directors), Ed Pollock and George James (Building Technologies Program), Joe Wysocki (USDA)

Subproject B: Five NASULGC institutions are participating in this pilot program, representing the states of **Alaska, Idaho, Kentucky, Oregon, and Washington**. University faculty will work with State Energy Offices and DOE scientists to offer professional development opportunities in the 5 states for 6-12 extension

agents/educators. One planning meeting in Washington, DC with DOE scientists has occurred. The train the trainer sessions will focus on Alternative Energy Options for small and rural communities as well as funding options such as the RD/USDA grants. Educators will seek to apply what they have learned with local communities.

Collaborators: Roy Mink (Geothermal Program Manager), Jake Fey (Washington State University Energy Extension Center) Curtis Framel, and Paul Johnson (EERE Regional Office)

Project #3: Youth Education in Science and Technology

Leadership Team: Linda Kay Benning (Assoc. Director Federal Relations, NASULGC Headquarters – Extension), Ian Maw (Director Academic Programs NASULGC Headquarters), Eddie Locklear (National 4-H Council, Director – 4-H After-School Program), Jim Powell (Director Southeast Regional Office), Lani Macrae (Communications and Outreach)

Objective: The objective is to increase K-12 students’ interest in science and math through “hands-on” teaching techniques and a curriculum of renewable energy and energy efficiency material.

Accomplishments-to-Date: This project is testing energy educational material with 4-H After-School Programs in seven states: **Arkansas, Iowa, Nevada, Tennessee, Texas, Vermont, and West Virginia.** Materials to be tested were selected in April 2004 by EERE/DOE staff and national energy education development (NEED) personnel. This was followed in May by a curriculum standards review by 4-H After-School personnel. 4-H youth educators were selected in May/June by 4-H Youth Development Task Force members, and brought in for a training workshop on June 15–17 by NEED personnel at NASULGC in Washington DC. The pilot testing will be implemented in September in the selected locations by trained 4-H educators. An evaluation process will assess learning at the end of the project in October 2004. Collaborators: Mary Spruill (NEED), David Waldrop (Southeast Region Office).

Project #4: Engaging the Research Capacities of the NASULGC Institutions

Leadership Team: Tom Fretz (Executive Director, Northeast Region – Research), Eric Young (Executive Director, Southern Region – Research), Rick Brenner (NASULGC HQ-USDA/ARS), Jeff Baker (Golden Field Office), David Rodgers (EERE/HQ – Senior Advisor to DAS/TD)

Objective: The objective is to assess the research and development opportunities for EERE activities at NASULGC institutions. A survey of universities is being conducted by NASULGC to summarize university experiences, both negative and positive, in working with EERE.

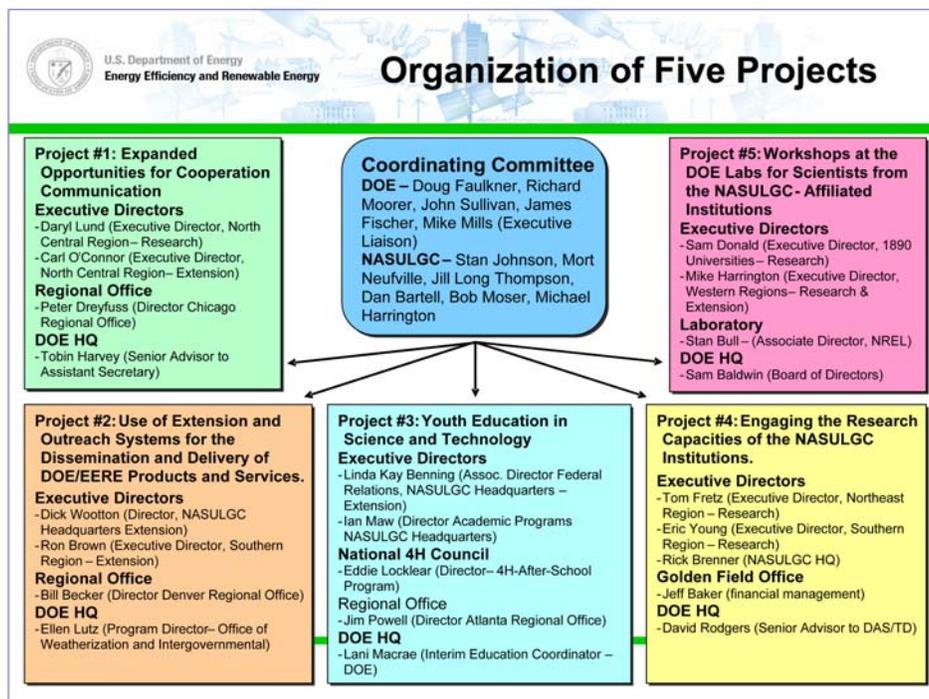
Accomplishments-to-Date: A survey of State Agricultural Experiment Station (SAES) directors and university research officers was conducted principally through the offices of the University Vice President for Research, using the NASULGC list serve for these groups. The effort was initiated to determine if there were barriers that inhibited expanded cooperation between NASULGC institutions and DOE, such as ownership issues surrounding intellectual property (IP) agreements. Early analysis of the data has provided some meaningful findings that may assist in furthering research collaboration between DOE and NASULGC institutions.

Project #5: Workshops at the DOE Labs for Scientists from the NASULGC – Affiliated Institutions

Leadership Team: Sam Donald (Executive Director, 1890 Universities), Mike Harrington (Executive Director, Western Region – Research & Extension), Stan Bull (Associate Director, NREL), Sam Baldwin (Board of Directors)

Objective: The objective is to explore mechanisms that enhance the interactions between NASULGC institutions and EERE labs. A pilot project aimed at enhancing these interactions will conduct solar energy and biomass workshops at the National Renewable Energy Laboratory (NREL).

Accomplishments-to-Date: Two concurrent workshops on Biomass and Solar Energy were held in August 2004 at NREL, in Golden, Colorado. A total of 102 participants attended the workshops from land grant universities, NREL, and other institutions. A general introduction to NREL programs was followed by a series of breakout discussions, during which participants learned about NREL research programs and facilities. The sessions were structured to provide in-depth information about programs and to allow time for discussion. Biomass topics included: Biomass Systems Analysis – Lifecycle and Environmental, Thermochemical Conversion, Feedstocks/Analytics/ Products, and Biotechnology Routes. Solar Energy topics included Physics and Modeling, PV Cell and Module Characterization, Electro-Optical Characterization, Surface Analysis Characterization, Analytical Microscopy, Solar Thermal Systems, and Solar Radiation Measurements. The workshop evaluation indicated high satisfaction among the participants and also suggested ways that future workshops might be improved.



Visit the NASULGC/EERE Project Web site for more information at:

<http://www.ncfap.org/specialprojects>



Organization of Five Projects

Project #1: Expanded Opportunities for Cooperation Communication

Executive Directors

- Daryl Lund (Executive Director, North Central Region– Research)
- Carl O'Connor (Executive Director, North Central Region– Extension)

Regional Office

- Peter Dreyfuss (Director Chicago Regional Office)

DOE HQ

- Tobin Harvey (Senior Advisor to Assistant Secretary)

Coordinating Committee

DOE – Doug Faulkner, Richard Moorer, John Sullivan, James Fischer, Mike Mills (Executive Liaison)

NASULGC– Stan Johnson, Mort Neufville, Jill Long Thompson, Dan Bartell, Bob Moser, Michael Harrington

Project #5: Workshops at the DOE Labs for Scientists from the NASULGC- Affiliated Institutions

Executive Directors

- Sam Donald (Executive Director, 1890 Universities– Research)
- Mike Harrington (Executive Director, Western Regions– Research & Extension)

Laboratory

- Stan Bull – (Associate Director, NREL)

DOE HQ

- Sam Baldwin (Board of Directors)

Project #2: Use of Extension and Outreach Systems for the Dissemination and Delivery of DOE/EERE Products and Services.

Executive Directors

- Dick Wootton (Director, NASULGC Headquarters Extension)
- Ron Brown (Executive Director, Southern Region – Extension)

Regional Office

- Bill Becker (Director Denver Regional Office)

DOE HQ

- Ellen Lutz (Program Director– Office of Weatherization and Intergovernmental)

Project #3: Youth Education in Science and Technology

Executive Directors

- Linda Kay Benning (Assoc. Director Federal Relations, NASULGC Headquarters – Extension)
- Ian Maw (Director Academic Programs NASULGC Headquarters)

National 4-H Council

- Eddie Locklear (Director– 4-H After-School Program)

Regional Office

- Jim Powell (Director Atlanta Regional Office)

DOE HQ

- Lani Macrae (Interim Education Coordinator – DOE)

Project #4: Engaging the Research Capacities of the NASULGC Institutions.

Executive Directors

- Tom Fretz (Executive Director, Northeast Region – Research)
- Eric Young (Executive Director, Southern Region – Research)
- Rick Brenner (NASULGC HQ)

Golden Field Office

- Jeff Baker (financial management)

DOE HQ

- David Rodgers (Senior Advisor to DAS/TD)

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Memo to: EERE Regional Office Directors

From: Jim Fischer
July 7, 2004

Re: Extension Services participating in EERE/NASULGC partnership

In January of 2003, David Garman met with Peter Magrath the President of the National Association State Universities and Land-Grant College's (NASULGC). From this meeting, an MOU was developed outlining in broad terms how NASULGC and EERE could partner together in the areas of research, development, demonstration, deployment, and education.

After I joined the Board in June of 03, I began to work with Stan Johnson, NASULGC's lead person for this MOU. Together with the Regional Executive Directors, we identified five key focus areas of potential partnership with the EERE programs and the NASULGC Universities, including their Extension Services. Details of the EERE/NASULGC partnership and accomplishments of the five projects that have been developed around these areas of focus can be found on the web at:
<http://www.ncfap.org/specialprojects/>

Regular updates (with handouts) have been provided to you on this developing EERE/NASULGC partnership at Richard Moorers's DAS/TD Monday meetings. In addition to these updates, I want to be sure that you are aware that several of these projects have now developed into specific working relationships involving universities in your regions. **Thus, the purpose of this e-mail is to identify the specific universities and their state Extension Director who have volunteered to partner with us and briefly describe the efforts that are occurring in the various EERE regions.** As you will note on the web page, Peter Dreyfus, Bill Becker, and Jim Powell are part of the Project Leadership Teams for Project # 1 - Expanded Opportunities for Cooperation and Communication; Project # 2 - Use of Extension and Outreach Systems for the Dissemination and Delivery of DOE/EERE Products and Services; and Project # 3 - Youth Education in Science and Technology; respectively.

Of the five projects mentioned above, the two projects that engage the Extension system in various states are Project # 2 and Project # 3. I hope that by giving you this contact information for the Extension Services in these states where projects are underway, you can contact the Extension Directors if you have questions and you can share this with appropriate individuals such as State Energy Directors.

PROJECT # 2

Below is a quick update and listing of the universities that are involved in the two sub-projects developed by the Leadership Team of Project # 2 "Use Extension and Outreach Systems for the dissemination and delivery of DOE/EERE Products and services." If you have any overall questions or comments, please contact myself or one of the members of the Project Leadership Team.

The objective of the first sub-project of Project #2 is to engage the Extension Services at one Land-Grant University in each of the six EERE regions. The purpose of the engagement is twofold:

- Evaluate the Build America “Best Practices Guide” for technical content and educational purposes and develop training curriculum and ways to distribute the new Build America “Best Practices Guides”
- Conduct a “Train-the-Trainer” workshop with the Build America Team and faculty representatives from six volunteer Land-Grant Universities for the purpose of using the Guide in educational programs in the respective states. The purpose of the workshop is to develop a curriculum and plan of action for the training programs in each state. It is being held at NASULGC headquarters here in DC on July 7th and 8th.

If you wish to contact the Directors of the state Extension Services involved in this project, their names and contact information is provided below:

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The Extension faculty at these universities identified to work on this project is:

- Alaska: Richard Seifert, University of Alaska-Fairbanks, 308 Tanana Loop, Box 756180, Fairbanks, AK 99775-6180
- Delaware: Ronald Jester, University of Delaware, 16684 County Seat Highway, Georgetown, DE 19947
- Florida: Dr. Pierce Jones, University of Florida - Energy ES, Gainesville, FL 32611
- Louisiana: Dr. Claudette Reichel, LSU Ag Center, PO Box 25100, Baton Rouge, LA 70894-5100
- Minnesota: Marilyn Bruin, University of Minnesota Extension Service, 240 McNeal, 1985 Buford Ave (DHA), St. Paul, MN 55108-6134
- New York: Dr. Joseph Laquatra, Cornell University, E-208 MVR Hall, Ithaca, NY 14853-4401

The objective of the second sub-project of Project # 2 is to develop ideas on ways EERE can use the Extension Services network of the Land-Grant Universities to provide local training of specific EERE technologies and practices. One major topic that has been discussed as a pilot for this effort is to develop an educational training program that provides training to the local extension office representatives and the tools for them to train others. The states involved in this sub-project are Alaska, Washington, Oregon, and Idaho.

If you wish to contact the Directors of the state Extension Services involved, their names and contact information is provided below:

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Individual faculty members at these universities that have been identified are:

- Alaska – Rich Seifert
- Idaho – Jon Vangerpen
- Washington – Jake Fey
- Oregon – TBD

PROJECT # 3

The Leadership Team of Project # 3, working with the National 4-H After-School Program and the National Energy Education Development personnel, held a train-the-trainer workshop at NASULGC headquarters in DC on June 15th thru 17th. The purpose of this training was to develop curriculum materials for 10 lessons focusing upon “the Science of Energy, Light and Lighting” that will be piloted in a 3-week time frame this Fall in the 4-H After-School Program. The pilot is scheduled to take place starting September 27 and concluding by October 8, 2004, with a pre- and post-evaluation of the transfer of knowledge. Because of this limited time frame of this initial year of the EERE/NASULGC agreement, the 4-H After-School Program has been targeted as the venue for doing this pilot. Each of the seven states selected to participate in this program will select at least two sites for the implementation of the pilot. There will also be a process evaluation conducted at the conclusion of the project. Each participating state sent three 4-H educators for training in the use of the materials conducted by the NEED staff.

If you wish to contact the Directors of the state Extension Services involved, their names and contact information is provided below:

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This information is being copied to all the Extension Directors in addition to other individuals who are interested in these programs.
Please contact me if you have any questions or comments.

Jim

DRAFT
EERE-NASULGC Partnership
Coordinating Committee Meeting

1307 New York Avenue, Suite 400
Washington, DC
September 7, 2004
2:00pm – 3:30pm

Participants:

DOE: Doug Faulkner, John Sullivan, Richard Moorer, James Fischer, Ellen Lutz, Patrice Pisinski, and Mike Mills

NASULGC: Bobby Moser, Vic Lechtenberg, Michael Harrington, Ron Brown, Tom Fretz, Ian Maw, Linda Kay Benning, and Jill Long Thompson

Purpose of Coordinating Committee Meeting:

1. Review the partnership accomplishments to date.
 2. Set the course for the continued development of the evolving EERE/NASULGC partnership in FY2005–2007.
 3. Provide guidance for upcoming annual NASULGC meeting November 14–16.
-

Agenda

Moderator – Bobby Moser

2:00 PM

I. Status Report of Five Projects and Key Issues of Communication

a. Status Report of Five Projects – Presentation by Project Team Representative

- i. Project #1: Expanded Opportunities for Cooperation and Communication:** Presenter – Mike Harrington
- ii. Project #2: Use of Extension and Outreach Systems for the Dissemination and Delivery of DOE/EERE Products and Services:** Presenter – Ron Brown
- iii. Project #3: Youth Education in Science and Technology –** Presenter – Ian Maw
- iv. Project #4: Engaging the Research Capacities of the NASULGC Institution:** Presenter – Tom Fretz
- v. Project #5: Workshops at the DOE Labs for Scientists from the NASULGC- Affiliated Institutions –** Presenter – Mike Harrington

b. Key Issue - Communications Challenges – Mike Harrington, Jim Fischer

- i.** How should awareness of the partnership among all NASULGC Institutions be increased?
- ii.** Can communication linkages be established with Deans of every college on campus?
- iii.** What are the criteria that a Program Manager or a Regional Directors should use in setting a priority for working with the partnership?
- iv.** What program(s) should be developed to increase communication among NASEO, State Energy Offices, State Extension Offices, regional university associations, and related state and regional energy associations and organizations?

2:40 PM

II. Policy Discussions and Decisions – Doug Faulkner, Bobby Moser and Vic Lechtenberg

- a.** Partnership Organization – Mike Harrington, Ron Brown, and Jim Fischer
 - i.** Request to Convert Coordinating Committee to Steering Committee
 - ii.** Request to re-configure Steering Committee Membership to include a member from the Executive Committee of NASULGC Commission on Food, Environment and Renewable Resources and a member of the Executive Committee of the NASULGC Council on Research Policy and Graduate Education.
- b.** Next Steps – Ron Brown, Mike Harrington and Ian Maw
 - i.** Continue and expand the existing five projects

3:10 PM

III. NASULGC Annual Meeting, Nov. 14–16, San Diego – Bobby Moser Discussion of the agenda for Mr. Garman’s participation in the Annual NASULGC meeting and discussion of the key points for Mr. Garman’s November speech at NASULGC annual meeting

3:20 PM

IV. Summary of Decisions and Next Steps – Bobby Moser, Vic Lechtenberg, and Doug Faulkner

3:30 PM

V. Adjourn

**BACKGROUND AND BRIEFING INFORMATION FOR
DEPARTMENT OF ENERGY (DOE) OFFICIALS**

**DOE-NASULGC COORDINATING COMMITTEE MEETING
SEPTEMBER 7, 2004 - 2:00 P.M. – 3:30 P.M.
1307 NEW YORK AVENUE, NW, SUITE 400, WASHINGTON, DC.**

GENERAL: Stan Johnson of Iowa State University and Bobby Moser of Ohio State University developed a proposal to expand the working relationship between member institutions of the National Association of State Universities and Land-Grant Colleges (NASULGC) and the Department of Energy. As a result of their work, David Garman, Assistant Secretary for Energy Efficiency and Renewable Energy (EERE), and Peter Magrath, President of NASULGC, met in January 2003 to discuss expanding collaboration and cooperation between EERE and NASULGC. A formal proposal of five joint projects was developed and in January 2004 a new partnership was formed and James Fischer, EERE Board Member, was officially designated to work with NASULGC to bring this collaborative effort to fruition.

This collaboration has been undertaken to better utilize the research and education capacity of NASULGC institutions. Public colleges and universities have many of the world's top researchers and scientists. Additionally, the land-grant institutions operate cooperative extension services providing unsurpassed outreach capability. By partnering with these institutions and utilizing these resources in new ways, it is believed the Department of Energy can more cost effectively carry forth its mission and member colleges and universities can enhance the research and education experience.

A structure was created that includes a Coordinating Committee and five project teams. The Coordinating Committee provides oversight and support for the project teams who are charged with the completion of their designated projects. The Department of Energy agreed to a grant award of \$200,000 and NASULGC agreed to provide the resources necessary to complete the projects.

The Coordinating Committee includes: Doug Faulkner, John Sullivan, Richard Moorer, James Fischer, and Michael Mills of EERE; Stan Johnson, Mort Neufville, Bobby Moser, Dan Bartell, and Jill Long Thompson of NASULGC. Each project team is led by EERE and NASULGC representatives.

AGENDA ITEM I – Status Report Of Five Projects And Key Issues Of Communication

SUB ITEM A: Status Report of Five Projects:

Project 1 – Expanding Opportunities for Cooperation and Communications (Daryl Lund, Carl O'Conner, Peter Dreyfuss, Tobin Harvey) This effort has resulted in

presentations at both DOE and NASULGC meetings about opportunities and capabilities of each organization. Two NASULGC institution faculty members (Cavalieri and Sobrero) were appointed to DOE Advisory Boards. The project has identified several opportunities for faculty and staff at NASULGC-member institutions to participate in peer reviews, planning committees, and other activities within EERE calling for expertise from outside EERE and DOE. A letter of invitation to NASULGC-member institutions' Presidents, Vice Presidents of Research and Advanced Study, Provosts, All Deans' lists maintained by NASULGC and all Directors' lists asking them to nominate faculty and staff for potential service on such panels will go out the week of September 6. Furthermore, the request is that these groups pass the information along to other administrators and all faculty within their institutions so that all faculty in the institution can be aware of these opportunities. A procedure is in the process of being designed for regular communication of such needs to the various groups that NASULGC can contact for potential nominees. It will also be necessary to develop a means of formal communication from EERE to these groups so that faculty are routinely aware of opportunities for service, funding, and requests for application (RFAs).

Project 2 – Use of Extension and Outreach Systems for the Dissemination and Delivery of DOE/EERE products and Services (Ron Brown, Richard Wootton, Bill Becker, Ellen Lutz)

2A Energy Efficient Housing: There are two goals: (1) improved communication between university faculty, DOE scientists, State Energy Offices and home building contractors; (2) achieve greater energy efficiency of new homes. Seven NASULGC Institutions are participating in the pilot program (NY, DE, MN, FL, KY, LA, and AK). University faculty will use the DOE Building America manual content in workshops for contractors in Fall 2004. Faculty have attended two professional development workshops conducted by DOE scientists

2004 Budget:

- Travel and per diem \$7,200
- Curriculum development/printing 2,500
- Contractor workshops 18,000
- Total \$27,700

2B Alternative Energy Sources: Five NASULGC Institutions are participating in this pilot representing the States of AK, ID, KY, OR, WA. University faculty will work with State Energy Offices and DOE scientists to offer professional development opportunities. Faculty members have attended one planning meeting in Washington, DC with DOE scientists. The training will focus on Alternative Energy Options for small and rural communities and funding through RD/USDA grants. Educators will seek to apply what they have learned with local communities

2004 Budget: \$10500

Project 3 – Youth Education in Science and Technology (Linda Kay Benning, Ian Maw, Jim Powell, Lani Macrae, David Waldrop)

This project is pilot testing energy educational material with 4-H After-School Program in seven states: Texas, Arkansas, Vermont, Tennessee, Nevada, West Virginia, and Iowa. Materials to be tested were selected in April, by EERE/DOE staff and national energy education development (NEED) personnel. This was followed in May by a curriculum standards review by 4-H After-School personnel. 4-H youth educators were selected in May/June by 4-H Youth Development Task Force members and brought in for a training workshop June 15-17 by NEED personnel at NASULGC in Washington, DC. The pilot testing will be implemented in September in the selected locations by trained 4-H educators. An evaluation process will assess learning at the end to the project in October 2004

2004 Budget: \$31,700

Project 4 – Engaging the Research Capacities of the NASULGC Institutions (Tom Fretz, Eric Young, Jeff Baker, David Rodgers)

A survey of State Agricultural Experiment Station (SAES) directors and university research officers, principally through the offices of the University VP for Research using the NASULGC list serve for these groups. The effort was initiated to determine if there were barriers that inhibited expanded cooperation between NASULGC institutions and DOE, if intellectual property agreements were a barrier to expanded cooperation, and to identify those activities in the current multi-state research portfolio that relate to the DOE/EERE mission area. While response rates was low (15.3% for the SAES, and 12.5 percent for CRPGE) early analysis of the data set provided some meaningful findings. Major findings:

- Unified “Terms and Conditions for IP Ownership” appear to be an issue with universities. Each institution has unique issues and terms to which they will agree. Any effort to standardize terms and conditions will be met with some skepticism.
- In the proposed “Terms and Conditions” as outlined, the open period of solicitation for offers of licensure of IP should not exceed six months. If parties have negotiated in good faith and fail to reach an agreement, it is unreasonable to force licensing under unacceptable terms and conditions.
- Other concerns with DOE solicitations for RFAs include the following:
 - Difficulty meeting the matching funds requirements
 - Poor instructions for preparation of DOE grants
 - Electronic submission process at DOE are not user-friendly
- Unclear or poor communications from DOE, frequent changes in the solicitation process, and difficulties working with DOE National Labs were identified as issues of concern.

Project 5 – Workshops at the DOE Labs for Scientists from the NASULGC Affiliated Institutions (Sam Donald, Mike Harrington, Stan Bull, Sam Baldwin)

Two concurrent workshops on Biomass and Solar Energy were held August 3–4 at the National Renewable Energy Laboratory, Golden, CO. A general introduction to NREL programs was followed by a series of breakout discussions during which participants learned about NREL research programs and facilities. The sessions were structured to

provide in-depth information about programs and to allow time for discussion. All presentations have been collected and will be posted on the web to provide for attendees a record of the workshop. Biomass topics: Biomass Systems Analysis – Lifecycle and Environmental, Thermochemical Conversion, Feedstocks/Analytics/ Products, and Biotechnology Routes. Solar Energy topics: Physics and Modeling, PV Cell and Module Characterization, Electro-Optical Characterization, Surface Analysis Characterization, Analytical Microscopy, Solar Thermal Systems, and Solar Radiation Measurements Workshop evaluation indicated high satisfaction among the participants and also suggested ways that future workshop might be improved.

2004 Budget \$20,000

Estimated in kind contributions and leveraging through August 31, 2004

- Project 1 Staff time \$10,000
- Project 2: Staff time and travel \$30,500
- Project 3: Staff time, travel, misc. expenses: \$128,000
- Project 4: Staff time and travel \$6,200
- Project 5: Support staff time and travel \$15,000, NASULGC scientist time and travel (\$1,500 each) \$126,000
- Overall Project management and travel \$150,000

SUB-ITEM B: Key Issue – Communications Challenges

The four questions on the agenda have been identified to assist the Coordinating Committee members in providing a plan to address communication opportunities.

- i. How should awareness of the partnership among all NASULGC Institutions be increased?
 - Two articles have been created for NASULGC's monthly newsletter and e-mail updates and inquiries have been sent from NASULGC Headquarters to their institutions Vice-Presidents for Research.
- ii. Can communication linkages be established with Deans of every college on campus?
- iii. What are the criteria that a Program Manager or a Regional Director should use in setting a priority for working with the partnership?
 - In the pilot phase of these projects, Program Manager and Regional Office Director participation was initiated because of a particular interest in a project and/or a specific qualification that added value to the development of these projects. If these projects grow in breadth and depth, DOE personnel will need to dedicate additional time to ensure they continue to operate effectively.
- iv. What program(s) should be developed to increase communication among NASEO, State Energy Offices, State Extension Offices, regional university associations and related state and regional energy associations and organizations?

The EERE/NASULGC partnership involves not only maintaining communication linkages with traditional entities but also developing communication linkages with new entities. Part of the challenge in developing a new partnerships, and a new way of doing business, involves cultural changes for the organizations involved. This requires time and strategically focused communications. During the past seven months that the Leadership Teams have been implementing the five pilot projects, several communication opportunities have been identified that are worthy of developing a communication plan to deal with the two identified issues:

1. Communication with all the NASULGC affiliated institutions
 - a. The communication channels with the traditional Land-Grant Universities, especially related to agricultural issues, is well established in NASULGC.
 - b. In order for the EERE/NASULGC partnership to achieve its potential, all colleges and disciplines need direct communication concerning partnership developments.
2. Communications with all the entities associated with DOE
 - a. The Department of Energy and its affiliated laboratories could be supported by the partnership activities.
 - b. To take full advantage of ongoing partnership activities and projects, all potential stakeholders must have full knowledge and understanding of the activities.
 - c. The communication about partnership activities becomes even more critical in order to keep all entities at the state and local community informed of exciting partnership activities underway in their state and local community.

AGENDA ITEM II – Policy Discussions and Decisions

SUB ITEM A – Partnership Organization

- i. A name change for the Coordinating Committee has been requested in order to better represent the function of the group. The term “coordinating” better applies to the last year of work that involved developing the partnership between EERE and NASULGC and identifying the key participants. Now that the partnership has been established and a framework of activities initiated, the activities in the future will need to be guided by a high-level policy group. We suggest replacing the Coordinating Committee with a Steering Committee. The function of the Steering Committee will be to govern the overall framework, policies, and procedures of the DOE-NASULGC Partnership and to periodically review the collaborative project activities.
- ii. To ensure the Steering Committee adequately represents the portions of NASULGC involved with this partnership, we suggest that representatives from the Commission on Food, Environment and Renewable Resources

and Executive Committee of the NASULGC Council on Research Policy and Graduate Education become members of the Steering Committee.

SUB ITEM B – Next Steps

NASULGC PROPOSAL FOR FUTURE PROJECTS:

General – NASULGC proposes that funding be provided to cover the cost of a full-time staff person to oversee all the projects at an estimated annual cost of \$75,000. Proposals for future projects follow.

Project 1 – Budget Request: FY05 \$10,000; FY06 \$10,000; FY07 \$10,000

This project will continue to facilitate better communications between DOE-EERE and NASULGC Universities through presentations, informational briefs, and identification of potential appointees for advisory boards and peer review panels.

Project 2 – Budget Request: FY05 \$282,000; FY06 \$324,000; FY07 \$564,000

Project 2 A – This plan would add six states per year, provide orientation training to the new group of university housing specialists, and provide the continuing groups advanced training. The ultimate target audience is building contractors who would learn concepts developed by DOE scientists to make new homes as energy efficient as practical. FY05 \$64,000; FY06 \$96,000; FY07 \$128,000

Project 2 B – This project is designed to add four or five states per year with a focus on alternative energy options for small and rural communities. University faculty along with State Energy Offices and DOE scientists will train Extension agents/educators who will in turn work with local communities. Communities will save money by converting to alternative sources and gain an economic advantage in attracting new businesses through this effort. FY05 \$20,000; FY06 \$30,000; FY07 \$40,000

Project 2 C – This project develops one community of interest in FY05 and '06, and then adds an additional community of interest in '07. DOE scientists will work closely with university faculty to develop content in the e-Extension delivery format. FY05 \$198,000; FY06 \$198,000; FY07 \$396,000

Project 3 – Budget request FY05 105,000; FY06 \$200,000; FY07 \$347,600

Projected Expansion of Project What follows is a scenario to expand the project to encompass over time additional states in the effort and to build a “curriculum” comprised of at least four learning modules to be deployed by the 4-H After-School Program. This model holds constant the number of sites in each state to one, while at the same time adding states and learning modules over the period of time.

2005: Based upon the success of the 2004 pilot effort, proposed is an expansion of the project by: the addition of another energy learning module to the program efforts of the

initial seven (1st Cohort) participating in the 4-H After-School programs; the selection of seven additional states (2nd Cohort) to participate in the program utilizing the “Science of Light” learning module.

2006: Expand the project building upon the base of 2005 efforts by: the addition of a 3rd energy learning module to the program efforts of both Cohort #1 and Cohort #2; and the addition of 14 more states (Cohort #3) to participate in the program utilizing the “Science of Light” learning module.

2007: Build upon 2005 & 2006 efforts by: adding additional learning modules to the program efforts of Cohorts #1, #2, & #3; Expanding the project to include all remaining states (22) as Cohort #4 using the “Science of Light” learning module.

Project 4 – Budget Request: FY05 \$25,000; FY06 \$15,000; FY07 \$15,000

This proposal includes a DOE workshop for 1890’s Historically Black Land-Grant Universities and 1994 Hispanic Institutions. Similar workshops would be held each year at an estimated cost of \$15,000, including travel. Additionally, there would be a workshop on Intellectual Property issues that would include a one-and one-half-day conference at an estimated cost of \$10,000.

Project 5 – Budget Request: FY05 \$90,000; FY06 \$55,000; FY07 \$55,000

The goal of this project is to increase collaboration between DOE and NASULGC university scientists and to identify critical gaps in information. This will be accomplished via a series of workshops at national laboratories similar to the ones held at NREL in August 2004. Information gaps and opportunities will be identified in Biomass in facilitated “listening sessions” resulting new research and education directions. An “Associated Universities” model concept will be developed and tested.

PROPOSED BUDGET

FY	Coordinator	Project 1	Project 2	Project 3	Project 4	Project 5	Total
2005	75,000	10,000	282,000	105,000	25,000	90,000	587,000
2006	75,000	10,000	324,000	200,000	15,000	55,000	679,000
2007	75,000	10,000	564,000	347,600	15,000	55,000	1,066,600
Total	225,000	30,000	1,170,000	625,600	55,000	200,000	2,332,600

AGENDA ITEM III – NASULGC Annual Meeting, Nov. 14 – 16, San Diego

Correspondence between Peter Magrath and David Garman set the stage for moving forward with developing this DOE-NASULGC partnership. David Garman accepted Peter Magrath’s invitation to address NASULGC’s Board on Agriculture Assembly (BAA) at the NASULGC Annual Conference in San Diego this November in order to

provide an update on the progress of the partnership. These letters are attached for your reference.

NASULGC will report on the status of the scheduling for Mr. Garman's presentation. NASULGC was considering asking Mr. Garman to also address Council of Research, Policy and Graduate Education. The topics of Mr. Garman's presentations will be discussed by the group.

MINUTES

EERE-NASULGC Partnership Coordinating Committee Meeting

1307 New York Avenue, Suite 400
Washington, DC
September 7, 2004
2:00pm – 3:30pm

- I. The meeting was opened with introductions by the participants.
 - a. DOE: Doug Faulkner, John Sullivan, Richard Moorner, James Fischer, Patrice Pisinski, and Mike Mills
NASULGC: Bobby Moser, Vic Lechtenberg, Michael Harrington, Ron Brown, Tom Fretz, Ian Maw, Linda Kay Benning, and Jill Long Thompson

- II. Status Report of Five Projects and Key Issues of Communication
 - a. NASULGC members of the Project Teams provided the group with an update of the five pilot projects
 - b. Mike Harrington and Jim Fischer led a discussion on communications challenges
 - i. A description of NASULGC's uniquely beneficial strengths, with regard to deployment and communication of EERE technologies and programs, would be valuable to DOE.
 - ii. A communications strategy that takes full advantage of the capacity of NASULGC's network should be considered.
 - iii. The five projects should continue to develop over the course of their intended time table for the first year.

- III. Policy Discussion and Decisions
 - a. DOE discussed possible future options in light of several factors such as its current deployment strategy review now being conducted by EERE.
 - b. NASULGC and DOE agreed to keep working together on developing partnership opportunities.
 - i. Considering a strong strategic approach to this emerging partnership is essential. We need to work at: 1) what the partnership would like to accomplish, 2) the overall timeframe, and 3) the process for achieving the desired outcomes.
 - ii. The strengths of regionally focused projects and activities should be evaluated as a building block from which to expand the partnership.

- iii. Bobby Moser will ask the Board of Agriculture Assembly (BAA) on Monday September 13 and subsequently the NASULGC Board of Directors and Doug Faulkner will ask David Garman as soon as possible about their thoughts on next steps on advancing the partnership specifically related to the November NASULGC meeting. By Friday, September 17, 2004, any results from these conversations will be reported to the Coordinating Committee.

IV. NASULGC Annual Meeting, November 14 – 16, 2004

- a. NASULGC proposes to invite Mr. Garman to speak to: 1) the BAA and 2) the Council on Research Programs and Graduate Education (CRPGE).
- b. DOE and NASULGC agreed that if Mr. Garman can only speak to one session at the NASULGC meeting then it should be the CRPGE session.

Meeting adjourned at 3:35pm

*States and the Extension Service (collected by Jim Powell – Summer04)
DOE and Ext (Building Energy Code Activities) – Provided by Ellen Lutz – Ap04
Home Performance with Energy Star – Provided by Ellen Lutz – Ap04*

Alabama: AL SEO has had a very good working relationship with the Alabama Cooperative Extension Service. They have been subgrantees on an ENERGY STAR Omnibus grant, and they have worked tirelessly for the SEO helping set up and staff displays. They have gone through training provided by the SEO education and outreach coordinator and then used that training to train their volunteers and other agents.

Alabama/Georgia was one of the five 2002 SEP special projects winners for Home Performance. The focus cities are Birmingham and Atlanta, although I think the majority of the activity is in Atlanta. I believe they are still in the planning/infrastructure building stage, but they should be training contractors and hopefully retrofitting homes within a few months. Southface is doing much of the work there.

Alaska: Alaska's Energy Extension Service helps provide information to village people on energy efficiency. Artic home construction, super insulation, and energy efficient power plants are recommended in order to fight the extreme cold. The Alaskan Craftsman Home is the construction program they support. The Energy Extension Service still receives funding from the SEP program. (No info about SEO relationship with Extension Service)

Arizona

Arkansas: No relationship at present

California

Colorado: Is completing a grant to provide education to code officials and builders on the content of the latest energy codes and best practices in how to enforce them. It is also providing technical assistance to those local jurisdictions as they seek to adopt or update the latest version of the energy codes, and to builders as they seek to update their product to meet the new energy efficiency standards.

Connecticut

Delaware

Florida: The Florida Energy Office (FEO) has worked in concert with the Florida Energy Extension Service (FEES) for more than a decade. FEES was under contract to the FEO to spread the energy efficiency and energy conservation message throughout the state of Florida. The FEES used their contacts with the energy extension offices in all 67 counties in the state. The FEES demonstrated and explained energy efficient landscaping, residential and commercial building energy efficiency, recycling, energy efficient motors, hotel/motel energy efficiency, and a plethora of subject pertinent to Florida's residential

and business communities. Dr. Pierce Jones, Director of FEES, is now under contract with the FEO for "Energy Efficient Residential Construction in Florida.

Georgia: GA SEO has had considerable experience with the Cooperative Extension Service in past years and still has very good experience with the agricultural side, and works with them to implement their primary agriculture program – extension and through agricultural engineering.

Recently (2004) updated its residential codes. Unevaluated grant proposal for an outreach and training program for GA and NC residential (and commercial) energy codes.

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Hawaii: Hawaii used to administer the Energy Extension Service. Each Island had a specialist familiar with energy technologies and they were funded under the SEP program. Some funding is still used to keep these positions in place. The positions also receive funding to address environmental and economic development issues. (No info about SEO relationship with Extension Service)

Idaho: The University of Idaho Energy Extension Service has directed attention to agricultural-based energy programs. The Extension Service evaluates irrigation district systems, growing crops for biodiesel and ethanol, and conducting workshops on tractor tune-ups. (No info about SEO relationship with Extension Service)

Illinois: Providing advocacy assistance to assist local jurisdiction to upgrade codes

Indiana

Iowa: Iowa has several competitive projects with the Department of Energy, all in the biorenewables area. Iowa is also one of the first states to be a contractor for the Industries of the Future program. This contract and related activities have led to the creation of BIOWA, an industry organization that supports biorenewables and the bioeconomy. (*Input from Stanley Johnson, Vice Provost for Extension, Iowa State University*)

Kansas: The Kansas Energy Office has had an ongoing close working relationship with the USDA Extension Service, located within Kansas State University's Engineering Extension Service since the inception of state energy programs over 20 years ago. Through the mid-1990s, it was in the form of the Energy Extension Service — one of the DOE programs.

When the EES program was merged with the SECP program in the mid-90s, Kansas elected to continue an Energy Extension Service as part of the SECP, then the SEP program. The relationship continues today, although scaled down substantially from earlier days.

In addition to the EES program, the Kansas SEO has worked closely with KSU's Engineering Extension Service on a number of other fronts — including energy conservation and renewable energy. With the advent of the SEP Special Projects about 8 years ago, the KSU Engineering Extension Service has taken the lead on our State Building Codes and Standards activities.

The SEO has (approximately) weekly contact with KSU Engineering Extension — so the SEO considers the relationship to be excellent.

Kentucky: In 2003, the Kentucky Division of Energy (KDOE) and the University of Kentucky (UK) College of Agriculture established a partnership to promote energy efficiency and renewable energy opportunities and benefits available to Kentucky's rural communities and farm families. To support these efforts the partnership seeks to better leverage energy efficiency and renewable energy funding provided by the federal government and private partners. Through our partnership initiatives we have connected with over three-quarters of a million Kentuckians at 34 separate public events.

Cooperative Extension Program for Kentucky's Building Systems Energy Needs: KDOE and the UK Cooperative Extension Service (UKCES) have partnered resources to provide energy efficiency and renewable energy education to Kentucky's consumers, homeowners, and the state's residential and light commercial building industry. This initiative is implemented through workshops, seminars, publications, exhibits, and Internet exchange.

Kentucky State Fair Energy Star Partnership: KDOE has, for the last two years, provided grants to the UKCES to market Energy Star. Extension hired a staff person who built a large model of an Energy Star home under construction that has 70 teaching points on insulation, windows, HVAC, etc. An Energy Star lighting display was also constructed. These, along with Energy Star windows and appliances, will be featured in the UKCES's 2200-square-foot Healthy Home exhibit at the state fair in August. A similar Energy Star exhibit was featured at the 2003 State Fair. Components of this exhibit are also featured at home and garden shows, builder and contractor conferences and other related events throughout the state. At some of these venues, the staff person provides training on Energy Star home construction to participants, providing a training manual he developed on Energy Star residential energy efficient construction, as well as radon testing and mitigation, and lead detection and abatement. The staff person also participates in the division's high performance home workshops, sponsored by the KDOE. In 2003, he provided 13 training sessions on Energy Star to extension agents throughout the state. Materials on Energy Star have been provided to each extension office throughout the state. This year UKCES will support a 3,000 sq. ft. exhibit

sponsoring Energy Star and Family-Consumer Sciences under an overarching theme of “Healthy Home.”

Solar Education Initiative: KDOE, American Electric Power, and the Kentucky affiliate of the National Energy Education Development Project (KyNEED) partnered to install photovoltaic (PV) systems at seven education centers across Kentucky to establish a community of solar centers within the Commonwealth. Centers will incorporate solar energy generation into their training and classroom curricula. The Campbell County Extension Office celebrated the installation of their solar system in April 2004.

Kentucky Bioenergy Workshops: UK College of Agriculture will develop and host workshops and tours covering the basics on biomass resources, bioenergy technologies, and potential on-farm applications. Additionally, these efforts will showcase Kentucky's successes in ethanol and biodiesel production.

Biomass Outreach Education Program for the State of Kentucky: This initiative will leverage work already occurring at the UK College of Agriculture to create a comprehensive biomass educational outreach program for producers, industry and middle and high school youth, including 4-H. Workshops will be hosted involving industry and their customers to explore opportunities to incorporate bio-refinery concepts and bio-based technologies into their R&D plans.

Kentucky is also performing HERS ratings on new homes to see how they comply with energy code. An initial 25 homes were done by the utility with success, but lack of interest by builders has made rating difficult on the remaining 125 houses by contractor Project Warm. Only 34 ratings of 160 were completed by 12/31/03.

Kentucky, Tennessee, and North Carolina: Ten workshops on Building High Performance Homes have been scheduled between April 23 and July 1 in the 3 states. (See <http://www.energy.ky.gov/events/calendar/> for scheduled courses.) Six Multi-state Building Supply training sessions at Lowes and Home Depot stores have also been scheduled in the 3 states between March 19 and July 2; another is planned but unscheduled. Work has been done on a Web site to publicize the codes.

Louisiana: The LA SEO has a long working relationship with the LSU Cooperative Extension. The SEO has funded numerous contracts – most recently, \$250,000 for La House (Sustainable House design, etc.) and another \$30,000 for assistance (liaison) with the coordination of the development/structure of the house.

The relationship is amenable. Though many numerous contracts in the past were awarded to the Cooperative Extension, the SEO has made great strides in becoming the "official" stop for a consumer to get information on energy efficiency. Prior to the current SEO structure in Louisiana (approximately 10 years), many energy efficiency and conservation contracts were awarded annually to the extension service and much of the

promotion and development of energy projects was handled by the Cooperative Extension. Unfortunately, no one knew there was an Energy Office.

There are many areas in which the SEO could increase their involvement with the Cooperative Extension, but the SEO is concerned with the need to keep the areas of responsibility clearly delineated to avoid duplication of effort and dilution of SEO responsibilities.

Maine

Maryland

Massachusetts

Michigan: Is in the process of updating its residential code. Work is proceeding on a grant to address the development and implementation of a comprehensive residential energy code training curriculum, targeted principally to building officials and secondarily to the home building industry in Michigan. The proposed curriculum and training will address the Michigan Uniform Energy Codes and its amendments resulting from the current code revision cycle. DOE is also providing impact analysis information.

Minnesota: Is in the process of updating its residential code. One element of a current grant is to provide education on the residential energy code for local building officials and their clientele. Five jurisdictions will target in-depth educational efforts at their officials and industry by conducting residential energy code workshops, and 20 jurisdictions will send two representatives to participate in the 2004 Affordable Comfort Conference in Minneapolis.

Mississippi: No relationship at present

Missouri: Won a 2002 SEP special project for Home Performance. The focus city is St. Louis. Much of that burgeoning effort is being done in conjunction with a similar pilot in Kansas City, funded with 2001 money from EPA. I believe the major players there are the Missouri Department of Natural Resources' Energy Center, the Gateway Center for Resource Efficiency (St. Louis) and the Metropolitan Energy Center (Kansas City).

Montana: The Central Regional Office, through the Montana Weatherization Office (separate from the state energy office) contracts with the Extension Service people at Montana State University to develop weatherization training curriculum and provide other services.

MT SEO does have a working relationship with Montana State University Extension Service. They have worked together on energy conservation projects (Energy Star Homes) and in the pollution prevention program area in the past.

The SEO generally has a positive working relationship with the MSU Extension

Service in program areas where both agencies provide similar services to the same client groups.

The Department of Environmental Quality is assisting the Montana Building Codes Division and local building code officials to transition from the 1993 MEC to the 2000 IECC. Montana is developing and implementing a training program for building code officials, building contractors, subcontractors, architects, and engineers on the IECC. Montana is also providing education and assistance to the building industry and new homeowners to encourage building above the 2000 IECC and take advantage of a new \$500 state energy conservation tax credit for above-code home construction.

Nebraska: Nebraska has had very successful relationships with the Nebraska Cooperative Extension Service over the years.

Projects with an agriculture focus have been particularly successful, such as minimum tillage, irrigation methods, irrigation pump efficiencies, load management (irrigation, dairy operations and grain dryers), conservation trees, and Xeriscaping. Localized information, training, workshops and field days attracted much interest, participation, action and measurable results. Most of these projects were funded with oil overcharge funds.

Residential efficiency information and training projects have also been successful. Digging way back in history, the four states of Nebraska, Kansas, Missouri, and Iowa worked together (while still together as the Kansas City Region) to develop a 4-H curriculum and educational television series on energy efficiency. Curriculum on residential energy efficiency, which was developed primarily for schools, was also delivered to communities through the Extension Service in cooperation with local utility educators. A television show was produced and aired on Nebraska Educational Television. This call-in show typically featured a specific energy topic and frequently utilized a number of Extension Service staff to answer the questions that came in from consumers. These types of activities were funded through the previous generation of the State Energy Program (SEP) through the State Energy Conservation Program (SECP) and the Energy Extension Service (EES).

Years ago, the NE SEO agency worked closely with the Extension Service's "Ag Communications" by utilizing their information distribution network for getting information and resources distributed to the local offices throughout the state. Press releases on various energy topics were generated and issued through Ag Communications. The local staff in turn utilized this information in their daily or weekly newspaper columns.

Most recently, the Nebraska Energy Office has been working with the Extension Service in the residential area related to the Nebraska Green Building Program, which emphasizes energy efficiency, waste minimization, and the use of recycled-content construction materials.

The relationship is positive. There is considerable interest in working on projects that meet the local needs. Of course, the interest and ability to actually make something happen is directly proportional to having funding available to make these projects happen.

The professional engineer who was responsible for one of the largest agriculture efficiency projects previously mentioned is now the Dean of Cooperative Extension.

Other comments:

The Nebraska Cooperative Extension Service has seen a considerable amount of “right-sizing” with a budget limitations and drastic reductions in Extension Educators (previously titled Extension Agents) who are responsible for multiple counties and/or regions and a multitude of issues. Therefore, whatever is developed needs to be based on the State Energy Program (SEP) principles of being “flexible and diverse” and “recognizes opportunities to address a national purpose while meeting local, state, and regional needs.”

The SEO would suggest Headquarters consider contacting Jane Schuchardt at USDA in Washington, DC, for some ideas or suggestions to “*increase communication and cooperation with the Extension Service both within the field and at headquarters — to our mutual benefit.*” Jane provides national leadership to the research, extension/outreach, and education functions of the Land-Grant University System on consumer issues. She has extensive experience and knowledge about local, state, and regional needs, as well as how the Extension Service functions in all the states.

Nebraska has just completed a project to develop a final report that emphasizes the potential energy savings and economic impacts/benefits to the state to assist legislators and local elected officials in the adoption of the next generation energy codes.

Nevada

New Hampshire

New Jersey

New Mexico: The NM SEO does not work much with the USDA Extension Service in the state. The office has had some interaction with them over the years, but it has largely been indirect, (i.e., working through a contract with NM State University (agricultural school)), which then contracted with USDA-Extension Service.

New York

North Carolina: Kentucky, Tennessee, and North Carolina – Ten workshops on Building High Performance Homes have been scheduled between April 23 and July 1 in the 3 states. (See <http://www.energy.ky.gov/events/calendar/> for scheduled courses.) Six

Multi-state Building Supply training sessions at Lowes and Home Depot stores have also been scheduled in the 3 states between March 19 and July 2; another is planned but unscheduled. Work has been done on a Web site to publicize the codes.

North Carolina also has an unevaluated codes proposal for a multi-media interactive online-updated code compliance adviser for NC builders.

North Dakota: ND has an ongoing relationship with the Extension service, cooperating wherever and whenever practical.

Ohio

Oklahoma: The OK SEO jointly hosted workshops in four communities. Information was shared on the USDA Farm Bill and State Energy Program funding opportunities as well as wind power information, renewable activities around the state, etc. Specifics about the workshops:

<i>Location</i>	<i>Region of state</i>	<i>Date of Meeting</i>	<i># in attendance</i>
Hobart	Southwest	10/23/03	100
Alva	Northwest	2/05/04	100
Stillwater	Northeast	4/28/04	25
Weatherford	Northwest	4/29/04	50

Personnel from the State Energy Office and USDA Rural Development Oklahoma are partnering to leverage funding of energy projects in 2004. A USDA representative will provide guidance to Main Street applicants on Farm Bill 9006 (due July 19, 2004). These funds will be leveraged with communities funded by the State SEP Main Street Energy Conservation program.

Information on USDA Farm bill was posted in the May 2004 issue of "*Oklahoma Department of Commerce Community Developer*" with a mailing list of 2,600. The Developer was also used to announce the first two regional workshops.

The Oklahoma State Legislature provided \$25,000 to the Oklahoma Department of Agriculture to conduct a feasibility study on Oklahoma's ability to support ethanol production plants. The Oklahoma State Energy Office secured an additional \$20,000 from DOE (Omnibus Budget program). A study was produced and presented at a statewide Biomass Conference last year.

Oregon: University of Oregon's Extension Service has been under contract with the Oregon Department of Energy's SEP program. They have also received funding from the Bonneville Power Administration (BPA). BPA funds were used to collect and maintain wind energy assessment data. This data was for all parts of the Pacific Northwest.

Pennsylvania

Rhode Island

South Carolina: The SC SEO has a good working relationship with Clemson U. Extension Service. The office has worked on several projects in the past with the Clemson Extension Service. They have received grant awards for demonstration projects, workshops, and training manuals. The SEO cooperated with them in providing a 4-H energy conservation camp for several years. They have provided technical assistance on other projects, and the Energy Office recently assisted the Sandhills Experiment Station with a sustainable design charrette.

South Dakota

Tennessee: [Kentucky, Tennessee, and North Carolina](http://www.energy.ky.gov/events/calendar/) — Ten workshops on Building High Performance Homes have been scheduled between April 23 and July 1 in the 3 states. (See <http://www.energy.ky.gov/events/calendar/> for scheduled courses.) Six Multi-state Building Supply training sessions at Lowes and Home Depot stores have also been scheduled in the 3 states between March 19 and July 2; another is planned but unscheduled. Work has been done on a Web site to publicize the codes.

Texas: The TX SEO has worked with the Agricultural Extension Service out of Texas A&M, but not nearly as much as with the Engineering Extension Service (also Texas A&M) – while under the same general heading, these are two distinct operations.

Most Ag Extension work is tied to economic analysis of ethanol production in the state - supporting legislative interests. The SEO has delegated them to work on similar economic modeling for small-scale CAFO anaerobic digester waste-to-energy projects.

Utah: Is working on a project to develop a new code compliance tool ('Field Guide') and code specific resources (Web-based) for Utah, specific to the 2000 IECC. Through comprehensive training workshops and seminars, it will work to increase building understanding of the benefits associated with advanced energy design and residential construction practices that enable builders to meet the provisions of the 2000 IECC without significantly increasing construction costs. Utah will also provide training and technical support, resources, and user-friendly "tips & tools" for all stakeholders on implementation, enforcement, and compliance with the 2000 IECC. Finally it will develop a new code compliance tool ('Field Guide') and code specific resources (Web-based) for Utah, specific to the 2000 IECC.

Vermont

Virginia

Washington: The Washington State Cooperative Extension, Energy Program is the prime implementer of energy programs for the state. They do not receive State Energy Program funds, but they do apply for and receive funding through DOE solicitations and

SEP Special Projects. The Western Regional Office partners with them on energy technology outreach programs. (No info about SEO relationship with Extension Service)

West Virginia

Wisconsin: The Wisconsin Division of Energy in the Department of Administration will hold a two-day statewide residential buildings conference in 2004 and a series of eight half-day trainings on the residential energy code.

Wisconsin is also doing a variant of Home Performance with ENERGY STAR, but with EPA money from 2001. It's run through WECC's Focus on Energy.

Wyoming: Bill Garrett, from the Torrington USDA office, was very helpful in helping to set up, publicize, and speak at the Wind Workshop the SEO held in Wheatland in April. (No comment on any other relationship with the Extension Service)

Puerto Rico: The PR Energy Office participates in local lectures to promote energy conservation with the agricultural extension service. They also cooperate in work on information centers and in coordinating meetings among farmers to promote renewable energy.

U.S. Virgin Islands: The Department of Planning and Natural Resources, Virgin Islands Energy Office, the Division of Environmental Protection, and the University of the Virgin Islands Cooperative Extension Service collaborated to establish a specialty summer camp to provide a unique educational opportunity in the field of energy efficiency, renewable energy, and environmental protection to educate students on energy and the environment; the significant and vital linkages between the two; and emphasized energy sources, usages, and impacts on the environment.

The Camp K.E.E.P. (Kids in Energy and Environmental Protection) included hands-on activities emphasizing the Science of Energy, Solid Waste & Energy, Water Sheds & Strom Water, Sources of Energy, and Electro Works. Additionally, students were afforded the opportunities to participate in site visits to Maho Bay's recycling site, Coral World PV and Waste system, a Water bottling plant, and the Water and Power Authority.

List of Key 2004 EERE/NASULGC Partnership Presentations*

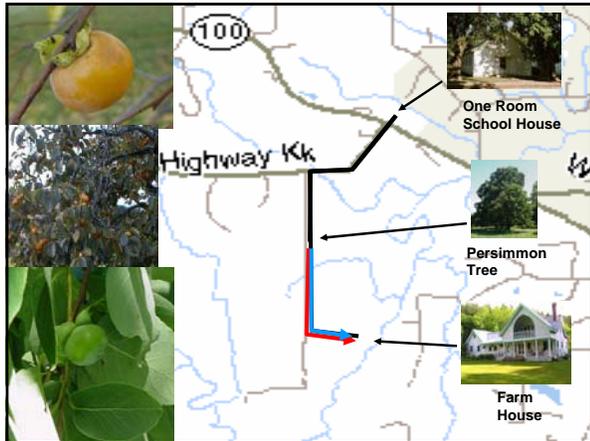
Date	Meetings/Conferences	Location	Person Presenting
February 4, 2004	The 1890 Land-Grant University Association of Extension Administrators	Washington, DC	James Fischer
February 10, 2004	NASEO	Washington, DC	Stan Johnson
February 20, 2004	NASULGC-National Extension Administrators	Phoenix, AZ	James Fischer
March 2, 2004	National Institutes for Water Resources	Washington, DC	James Fischer
March 3, 2004	AASCARR Board of Directors	Washington, DC	Dan Bartell
March 4, 2004	The Northeast Association of Research Deans and Directors	Washington, DC	James Fischer
March 7, 2004	The Bio-Conference, Biobased Industry Outlook	Ames, IA	James Fischer
March 12, 2004	Power Systems Conference 2004	Clemson, SC	James Fischer
March 16, 2004	Southeast Region DOE and State Energy Officials	Atlanta, GA	Ron Brown/James Fischer
March 17, 2004	Biobased Products and Bioenergy Coordination Council	Washington, DC	James Fischer
March 24, 2004	Western Regional Association of Extension and Research Deans and Directors	Las Vegas, NV	James Fischer
March 25, 2004	The 1890 Land-Grant University Agricultural Research Directors	Atlanta, GA	James Fischer
March 29, 2004	North Central Association and Southern Association of Research Deans and Directors	Orange Beach, AL	James Fischer
April 4, 2004	Association of Southern Region Extension Directors	Savannah, GA	Jim Powell

Date	Meetings/Conferences	Location	Person Presenting
May 7, 2004	North Central Extension Directors	Kansas City, KS	Peter Dreyfuss
June 22, 2004	Western Region Joint Summer	Tumon, Guam	Mike Harrington
July 14, 2004	North Central Regional Association Summer	Chicago, IL	Daryl Lund
July 25, 2004	BAA–Policy Board of Directors	Orlando, FL	Dan Bartell/Mike Harrington
August 29, 2004	Fall 2004 Meeting of the Association of Southern Region Extension Directors	Biloxi, MS	Larry Turner/Ron Brown
September 13, 2004	BAA–Policy Board of Directors	Washington, DC	Bobby Moser/Mike Harrington
September 14, 2004	NASULGC Board of Directors	Washington, DC	Mort Neufville/Bobby Moser
September 22, 2004	Energy Star Regional	Savannah, GA	Ron Brown
September 27, 2004	WAAESD Fall	Oklahoma City, OK	Mike Harrington
September 27, 2004	Southern Association of Research Deans and Directors	Oklahoma City, OK	Eric Young
September 28, 2004	NASEO; Agriculture and Rural Development Task Force	Chicago, IL	James Fischer
September 29, 2004	Experiment Station Section Meeting and SAES/ARD Workshop	Oklahoma City, OK	Daryl Lund
October 1, 2004	S-1007 Multi-state University Biomass Research Committee	Golden, CO	Mike Harrington
October 21, 2004	Texas A&M	College Station, TX	James Fischer
October 27, 2004	University Industry Consortium	Des Moines, IA	James Fischer
November 12, 2004	University of Arizona	Tucson, AZ	James Fischer
November 14, 2004	NASULGC 2004 Annual Meeting	San Diego, CA	James Fischer
November 15, 2004	CRPGE - NASULGC 2004 Annual Meeting	San Diego, CA	James Fischer
November 15, 2004	Western Extension Directors	San Diego, CA	Mike Harrington

Date	Meetings/Conferences	Location	Person Presenting
November 18, 2004	University of Minnesota	Minneapolis, MN	James Fischer

* At six week intervals through 2004, briefings were made to update the EERE Program Managers/Regional Directors at the Deputy Assistant Secretary's Technology Development meetings on EERE/NASULGC partnership activities.

Example of PowerPoint Presentation



By three methods we may learn wisdom:
Confucius

First, by reflection - which is noblest;
Second, by imitation - which is easiest;
Third, by experience - which is bitterest.

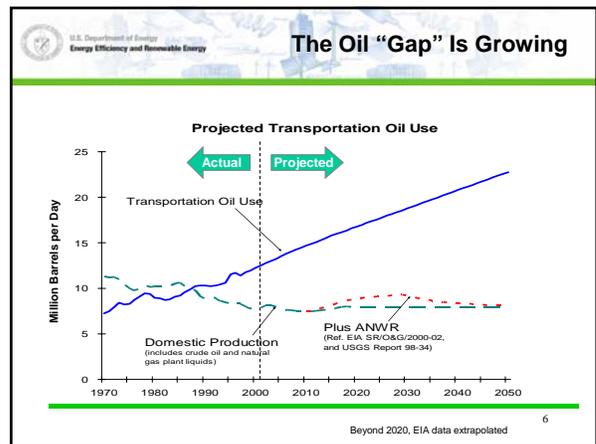
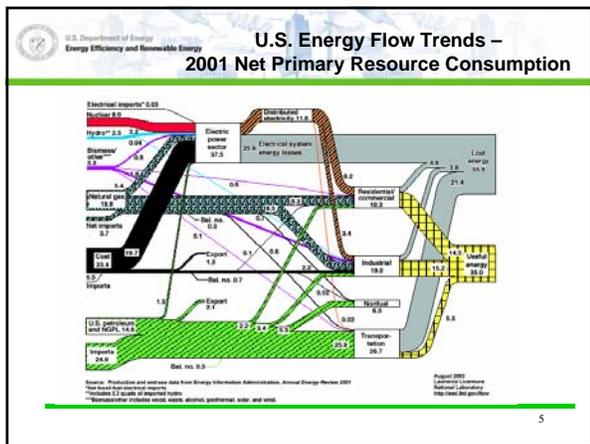
NASULGC
 National Association of State University and Local Government Energy Administrators

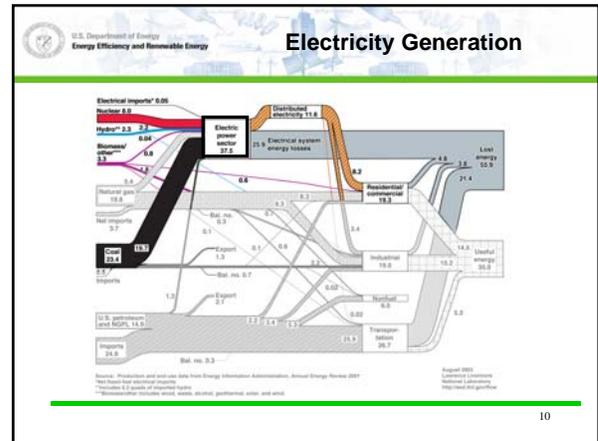
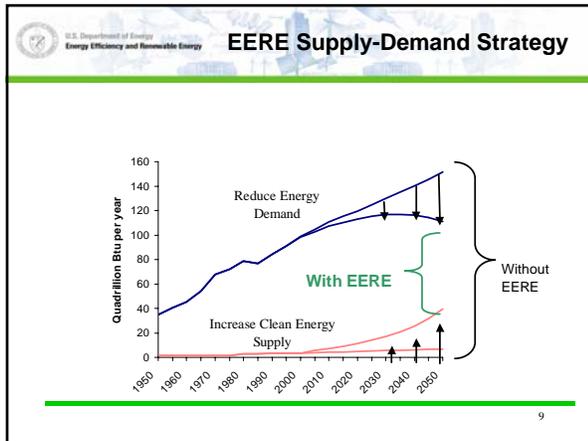
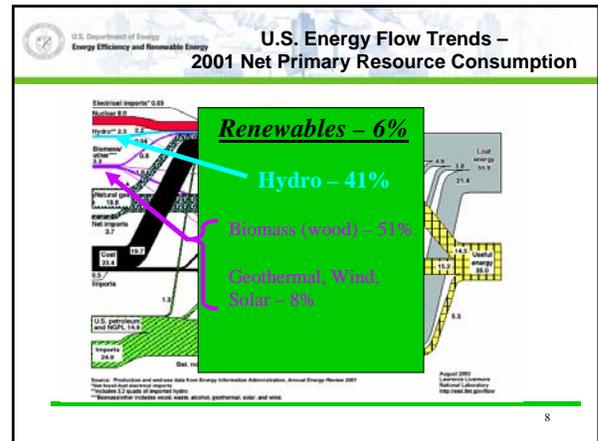
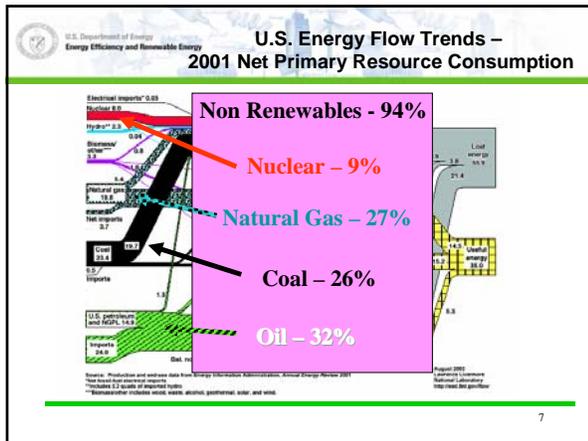
A Time to Reflect on:
Building a Partnership:
NASULGC Universities
 And The Office of
Energy Efficiency and Renewable Energy
 U. S. Department of Energy

National Extension Administrators Conference
 By
Dr. Jim Flaicher
 Board of Directors
 Energy Efficiency and Renewable Energy
 U.S. Department of Energy
 February 20, 2004

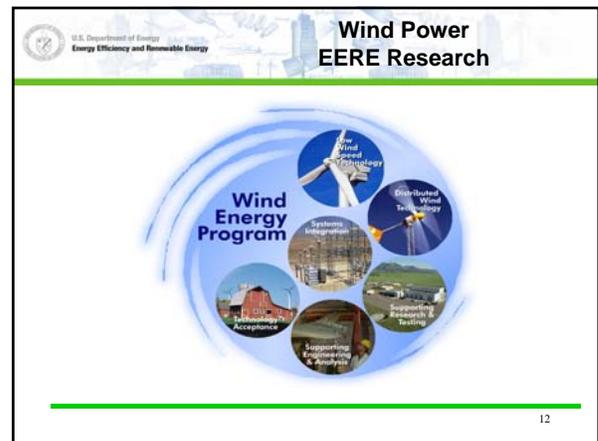
Energy Technologies: Challenges & Opportunities
We Need Your Help

- Our Nation faces energy challenges;
- DOE's Energy Efficiency and Renewable Energy's (EERE) mission is to develop solutions;
- Our programs target development of alternative energy supply technologies and enhanced energy efficiency; and
- EERE needs to do a better job of tapping into the substantial capabilities of colleges and universities — we need your help.





- ### Electricity Generation – The Challenge
- More than 1/3 of the energy consumed in the U.S. is in the form of electricity, at a cost well over \$200 Billion per year.
 - A large amount of energy (about 2/3) is “lost” due to thermodynamic inefficiency in electricity generation.
 - Fossil fuel-fired electric plants contribute to environmental emissions.



Wind Power The Opportunity

U.S. Department of Energy
Energy Efficiency and Renewable Energy

Theoretical Maximum Energy U.S. winds three times current U.S. electricity use.

UNITED STATES ANNUAL AVERAGE WIND POWER

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Wind Power Achieving Competitive Levels

U.S. Department of Energy
Energy Efficiency and Renewable Energy

The cost of generating electricity from the wind has dropped from 80¢/kWh in the 1980s to 4-6¢ today.

The long-term goal is to reduce costs below 3¢/kWh

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Wind Power Distributed Wind Technology

U.S. Department of Energy
Energy Efficiency and Renewable Energy

This portion of the Wind Program is focused on smaller wind turbines, and its goal is to develop technology (advance rotor design, site specific design, improved generator, drive train, and power electronics efficiency) to enable more cost-effective utilization of Class 3 wind areas.

Year	Annual COE Target (¢/kWh)
2003	17-22
2004	14-20
2005	12-19
2006	11-18
2007	10-16

EERE Distributed Wind Technology Objective:
By 2007, reduce the cost of energy from distributed wind systems to 10-15¢ /kWh in Class 3 wind areas (the same cost level currently achieved in Class 5 areas)

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Wind Power Systems Integration

U.S. Department of Energy
Energy Efficiency and Renewable Energy

This portion of the Program is working to facilitate the adoption of equitable grid access and operational rules for wind and to ensure that wind power is appropriately considered in regional transmission planning.

EERE Systems Integration Objective:
By 2012, complete program activities addressing electric power market rules, interconnection impacts, operating strategies, and system planning needed for wind energy to compete without disadvantage to serve the Nation's energy needs.

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Wind Power Technology Acceptance

U.S. Department of Energy
Energy Efficiency and Renewable Energy

EERE Technology Acceptance Objective:
By 2010, at least 100 MW of wind generating capacity are installed in 30 states.

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Wind Power Where You Can Help Strategy – Technology Acceptance

U.S. Department of Energy
Energy Efficiency and Renewable Energy

- Build local momentum for the use of wind power across the United States. Primary activities:
 - Outreach to state-based organizations
 - Small wind outreach
 - Institution building through utility partnerships
 - Support for Native American interest in wind power
 - Develop new applications of wind power (e.g., agricultural or mining applications)

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Photovoltaics (PV)

- Price of electricity from grid-connected PV systems are 20 to 30¢/kWh.
 - Down from \$2.00/kWh in 1980
- 2020 R&D goal is 6¢/kWh.

Annual Average Solar Resource
For Fixed Flat Plate Collectors

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Solar Photovoltaics Science/Engineering Challenges

- Improve PV cell efficiency; increase cell life; lower manufacturing cost
- Optimize cell materials, designs, modules
- Improve understanding of materials, processes, and devices for advanced PV options (organic coatings, quantum dots)
- Improve performance and lower cost of “balance of system” components (inverters, battery storage)

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Geothermal Energy

- Current capacity is roughly 2,800 MW in US; 8,000 MW worldwide.
- Current cost is 5–8¢/kWh.
 - Down from 15¢/kWh in 1985
- 2010 goal:
3 - 5 ¢/kWh.

Geothermal Resource

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Geothermal Energy Science/Engineering Challenges

- Improve methods of identifying prospective reservoirs without drilling
- Improve methods of predicting reservoir performance/lifetime
- Lower drilling costs
- Improve heat recovery methods for resource areas that are deeper, less permeable, or drier than current “commercial” quality reserves

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Prospects for Biomass Power

- Grid-connected capacity was 6,500 MW in 2000 (mostly forest products industry CHP).
- Biopower electricity prices generally range from 8 to 12 ¢/kWh.
 - Down from 20¢/kWh in 1980)
- Biorefineries can include power generation as a product, especially through the thermochemical platform, which includes gasification.

United States - Biomass Resources from Residues

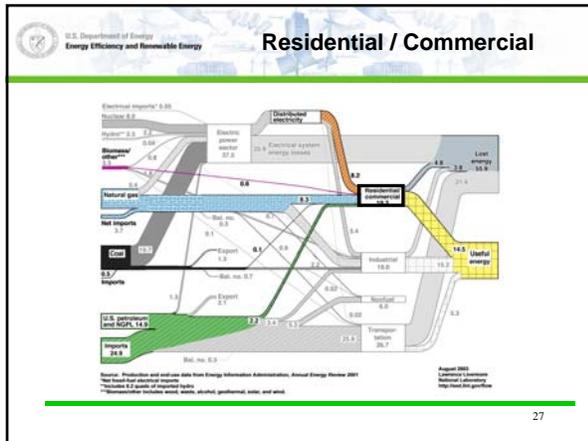
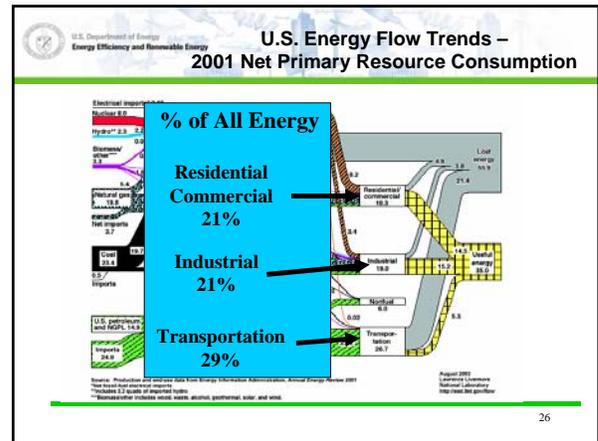
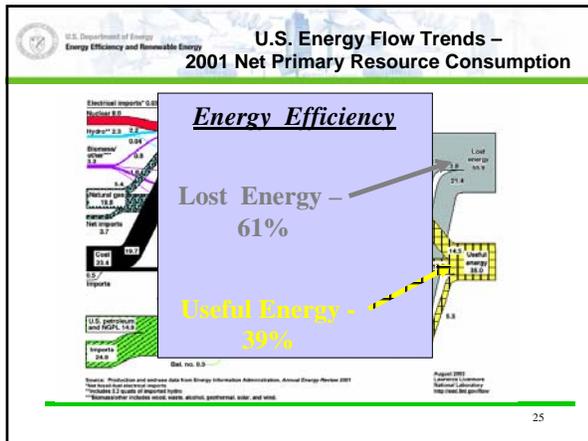
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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Biomass Power Science/Engineering Challenges

- Gasification – Demonstrate/optimize operation of biomass gasifier with advanced power generation using turbines and/or fuel cells, ideally as part of an “integrated” biorefinery
- Improve crop harvest/residue collection equipment and systems

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- U.S. Department of Energy
Energy Efficiency and Renewable Energy
- ### Buildings The Challenge
- Construction and operation of buildings consume **more energy** than any other sector of the U.S. economy including transportation. It is the dominant consumer of electricity as well as natural gas.
 - With our nation's annual bill for residential and commercial buildings reaching **\$265 billion** in 2000, the economic impacts of lowering energy use can be enormous.
 - Major breakthroughs are needed to significantly **reduce energy consumption** in the building sector and its corresponding **environmental emissions**.

- U.S. Department of Energy
Energy Efficiency and Renewable Energy
- ### Buildings The Opportunity
- Reduce U.S. energy expenditures by about \$15.7 billion in 2020.
 - Save 26.3 GW in reduced peak electricity demand, (~10 percent of additional capacity in 2020).
 - An ACEEE study shows that combining technology innovation with policy measures, such as renewable energy portfolio standards, similar savings could be achieved by 2010.

- U.S. Department of Energy
Energy Efficiency and Renewable Energy
- ### Building Technologies EERE Research
- Focusing on continuum of low energy use buildings (LE), ultra low energy use buildings (ULE) and ultimately, net zero energy buildings (ZEB)
 - Targeting both existing and new buildings
-

U.S. Department of Energy
Energy Efficiency and Renewable Energy

Buildings

On-Site Power Systems
Building Integrated Photovoltaics
Fuel Cells

Building Equipment
Space conditioning
Lights
Appliances
BIPV, PEM-FC

Building Systems
("whole-systems")
Design tools
System Integration

Building Envelope
Windows,
Walls, Floors

Materials Intensity

Buildings consist of a complex system of interacting components facing variable input conditions

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Emerging Technology – Lighting

FLAME

CANDLES & LANTERNS

BULBS

LEDs

LASERS

- Lighting consumes nearly 30% of all electricity produced for buildings.
- 765 TWh (or 8.3 quadrillion Btu-source) of electricity a year in the United States
- Advancement in lighting technology embody one of the largest potential energy savings areas in the building sector.

EERE Lighting Objective:
By 2025, achieve 70% efficiency improvement over the best fluorescent technology available today and 90% energy savings over incandescent sources.

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Emerging Technology – Water Heaters

Water heating consumes more than 12% of the energy used in buildings (19% in residential buildings).

EERE Objective:
By 2025, reduce energy used for water heating by 80% and improve hot water distribution systems and delivery performance by 50%.

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Emerging Technology – Windows

Windows and skylights impact approximately 4.8 quads of energy consumption.

EERE Window Objective:
By 2020, reduce window thermal energy and demand impacts in new and existing residential construction by 70% and reduce lighting loads in commercial buildings by 70% in perimeter zones via effective use of daylighting.

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Emerging Technology – Building Controls and Appliances

Energy efficiency in home appliances and computers have almost totally focused on stand-alone equipment performance. Achieving the desired net zero energy use will require operation of complex, interconnected and functionally integrated systems.

EERE Objective:
By 2025, design user-friendly residential control packages that interconnect and drive all components and reduce peak energy consumption by 15% and annual energy consumption by 20%.

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Emerging Technology – Building Envelope

Significant improvements are needed in baseline performances of average R-10 walls, R-30 attics, and R-4 foundations.

EERE Objective:
By 2010, double envelope insulating values in door and walls to R-20 and increase foundation performance to R-12 on average. Develop IR reflective roofs with R-40 performance that reduce attic peak energy demand by 25-50%.

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Emerging Technologies – Space Conditioning

Space conditioning research can result in a 50% reduction in peak electricity demand for air conditioning.



EERE Objective:
By 2015, develop small, residential HVAC systems that are 67% more efficient and develop commercial HVAC systems that reduce cooling consumption by 80%.

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Buildings - Where You Can Help

- Lack of knowledge about definition of "good" building energy performance - standard metrics similar to that of fuel economy for cars do not exist);
- Lack of knowledge about pathways to net zero buildings:
 - How does one design a house or an office building that uses 50-70% less energy than the operative code?
 - What are the different pathways to these goals?
 - What are the costs of doing so?
 - How is the pathway different for a one-story retail building Arizona as opposed to a 15 story building in Minnesota?
- In residential buildings, system-level savings strategies are difficult to implement because replacements and upgrades generally occur on a component-by-component basis.

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Additional Programs Related to Buildings

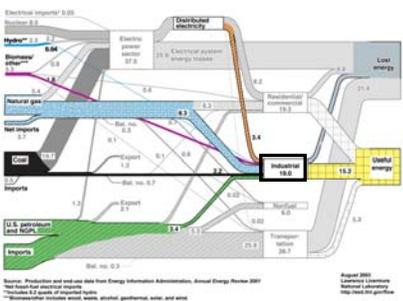
- ENERGY STAR®
- EnergySmart Schools
- Weatherization



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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Industrial



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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Industrial Technologies Program (ITP)

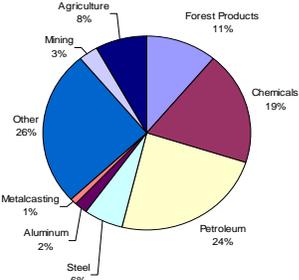
GOALS

- Energy savings
- Environmental quality
- Yield improvement/resource conservation
- Economic viability
- Energy security

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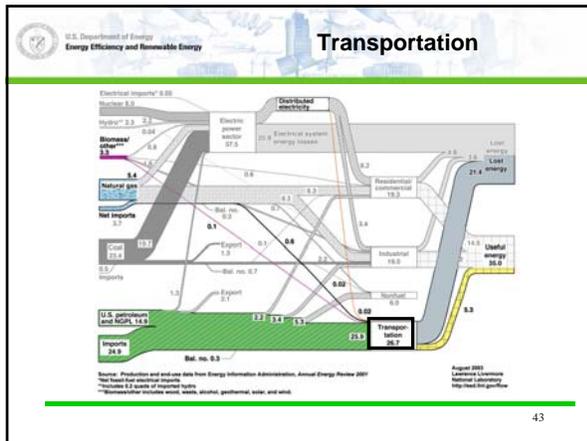
U.S. Department of Energy
Energy Efficiency and Renewable Energy

Industrial Energy Use (35 Quads, 1999)



Industry	Percentage
Petroleum	24%
Chemicals	19%
Forest Products	11%
Agriculture	8%
Other	26%
Steel	6%
Mining	3%
Aluminum	2%
Metalcasting	1%

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Transportation The Challenge

- The U.S. uses about 20 million barrels of oil per day, costing \$2 billion per week
- The U.S. transportation sector accounts for 27% of all U.S. energy consumption
- Economic, environmental, and energy security issues are associated with our dependence on oil. Oil market upheavals have cost the U.S. \$7 trillion over 30 years.



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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Transportation The Opportunity

- By 2020, new transportation technologies and fuels will result in considerable annual savings:
 - 2.8 to 4.7 Quads of primary energy
 - 31.5 to 61.5 billion dollars
 - 54.5 to 92.1 million metric tons carbon
- By 2040, reduce U.S. demand for oil by over 11 million bbls/day and greenhouse gas emissions by 500 million tons/year

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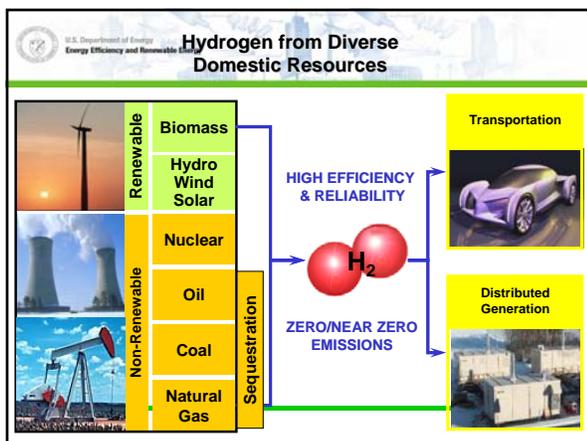
U.S. Department of Energy
Energy Efficiency and Renewable Energy

Transportation How Do We Get There?

- Multiple Strategic Partnerships Between EERE, Industry, Academia and National Labs Organized In Two Programs:
 - Freedom Car and Vehicle Technologies
 - Hydrogen, Fuel Cells, and Infrastructure Technologies



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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Transportation Where You Can Help

- How do we reduce the cost of producing H₂ from natural gas by 70%?, from photoelectrolytically from \$200/kg to \$10/kg
- How do we reduce the cost of producing automotive fuel cells from \$200/kW to \$30/kW?
- How do we reduce the cost of a 25 kW battery from \$3,000 to \$200?
- How do we reduce the cost of producing carbon fiber from \$12/lb to \$3/lb?
- How do we prepare a society for a new transportation system?

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**TITLE IX
ENERGY TITLE**

Section	Name
9001	– DEFINITIONS - (OCE).
9002	– FEDERAL PROCUREMENT OF BIOBASED PRODUCTS – (OCE)
9003	– BIOREFINERY DEVELOPMENT GRANTS - (RD)
9004	– BIODIESEL FUEL EDUCATION PROGRAM - (OCE)
9005	– ENERGY AUDIT AND RENEWABLE ENERGY DEVELOPMENT PROGRAM (RD)
9006	– RENEWABLE ENERGY SYSTEMS AND ENERGY EFFICIENCY IMPROVEMENTS - (RD-RBS)
9007	– HYDROGEN AND FUEL CELL TECHNOLOGIES - (OCE)
9008	– BIOMASS RESEARCH AND DEVELOPMENT – (NRE)
9009	– COOPERATIVE RESEARCH AND EXTENSION PROJECTS – (REE – CSREES)
9010	– CONTINUATION OF BIOENERGY PROGRAM – (CCC)

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**Farm Bill – Title IX
Section 9006**

Technology	Applications	Awards
• Biomass – Anaerobic Digester	34	
• Biomass – Bioenergy	16	\$9,575,535
• Wind – Large	27	
• Wind – Small	10	\$7,388,903
• Geothermal	2	
• Solar	6	\$725,566
• Building EE	??	
• Industrial EE	??	\$1,504,252
• Hybrid Systems	7	\$2,112,977
• Hydrogen	?	\$400,000
• TOTAL	147	\$21.7 M

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**Farm Bill – Title IX
Section 9006**

• California - \$691,830	• New York - \$2,878,027
• Illinois - \$2,186,596	• Ohio - \$2,043,612
• Massachusetts - \$970,000	• Texas - \$999,350
• Mississippi - \$231,503	• Washington - \$883,028
• Nebraska - \$177,654	• Idaho - \$1,010,000
• North Dakota - \$10,410	• Kansas - \$29,075
• South Dakota - \$62,500	• Minnesota - \$4,678,632
• Virginia - \$500,000	• Montana - \$37,000
• Hawaii - \$60,966	• North Carolina - \$130,000
• Iowa - \$1,758,440	• South Carolina - \$15,000
• Michigan - \$434,500	• Vermont - \$79,001
• Missouri - \$124,499	• Wisconsin - \$1,715,610

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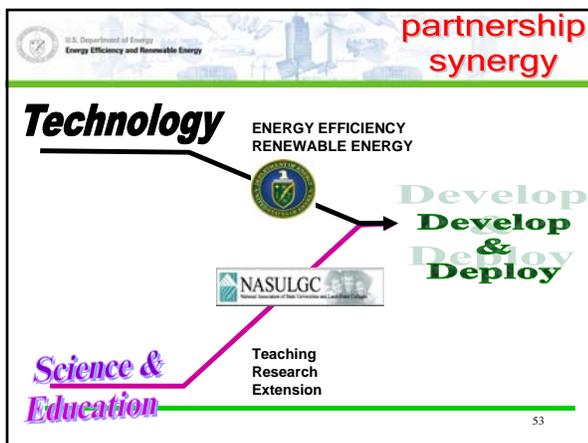
**Energy Technologies:
Challenges & Opportunities**

We Need Your Help

- Our Nation faces energy challenges;
- EERE's mission is to develop solutions;
- Our programs target development of alternative energy supply technologies and enhanced energy efficiency; and

EERE needs to do a better job of tapping into the substantial capabilities of colleges and universities — we need your help.

distributed energy



- History of
EERE & NASULGC**
- ✓ Early 2003 David Garman & Doug Faulkner Meet with NASULGC President C. Peter Magrath et al. to discuss plan for cooperation
 - ✓ June 2003 Fischer hired to work with NASULGC on exploring the possibilities of expanding an EERE/NASULGC partnership
 - ✓ September 2003 Fischer discusses preliminary concepts with NASULGC Policy Board of Directors
 - ✓ Learn about each others organization mission, culture and priorities
 - ✓ Develop a shared vision on areas of common interest
 - ✓ Identify a limited number of projects to begin the partnership
 - ✓ NASULGC DOE/EERE Working Task Force appointed:
 - ✓ Dr. Stan Johnson, Vice Provost for Extension, Iowa State University
 - ✓ Dr. Jim Zuiches, Dean, Washington State University
 - ✓ Dr. Dan Bartell, Dean, California State University – Fresno
 - ✓ November 2003 Fischer presents ideas for a plan at NASULGC Annual Meeting
 - ✓ December 2003 NASULGC formally submits a "Proposal for Expanded Cooperation between EERE and NASULGC."
 - ✓ January 2004, EERE Board formally accepts the proposal
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U.S. Department of Energy
Energy Efficiency and Renewable Energy

The Proposal

- Inclusive of all functions of EERE – Research, Development, Demonstration, Deployment and Education.
- Assigns NASULGC staff (10 Executive Directors to work with EERE personnel on projects).
- This proposal is for one year (implementation during 2004) with the idea to learn which projects are most productive and how to design a longer term agreement. Assessment of each project will occur at the end of year
- At annual NASULGC meeting in November 2004
 - Report on the successes
 - Present ideas for future collaboration
- Suggest the development of a cooperative agreement program for 2005 and beyond
- Consist of a Set of Five Projects integrated across all EERE program areas

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

The Five Projects

- **Project # 1 – Expanded Opportunities for Cooperation and Communication**
 - Share plans and priorities through meetings and presentations
 - Achieve NASULGC representation, when appropriate, on advisory boards and review teams
 - Invite EERE representatives to relevant NASULGC meetings, workshops and conferences.
 - Develop a list of resumes as potential candidates for appointments
 - Assist EERE in achieving a diverse and competent list of individuals for new hires

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Project #1: Expanded Opportunities for Cooperation Communication

Executive Directors

- Daryl Lund (Executive Director, North Central Region - Research)
- Carl O'Connor (Executive Director, North Central Region - Extension)

DOE Regional Office

- Peter Dreyfuss (Director, Chicago Regional Office)

DOE HQ

- Tobin Harvey (Senior Advisor to Assistant Secretary)

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

The Five Projects

- **Project # 2 – Use of Extension and Outreach Systems for the Dissemination and Delivery of DOE/EERE Products and Services.**
 - Meet EERE need for a wider understanding and distribution of its products and services
 - Engage the Extension system and its offices in 3,200 counties and its 6,000 specialists
 - Assure that at least one Extension service from each of the six EERE regions will participate in 2004
 - Engage the academic programs of the university through the Extension connection at each university

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Project #2: Use of Extension and Outreach Systems for the Dissemination and Delivery of DOE/EERE Products and Services.

Executive Directors

- Dick Wootton (Director, NASULGC Headquarters Extension)
- Ron Brown (Executive Director, Southern Region - Extension)

DOE Regional Office

- Bill Becker (Director Denver Regional Office)

DOE HQ

- Ellen Lutz (Program Director – Office of Weatherization and Intergovernmental)

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

The Five Projects

- **Project # 3 – Youth Education in Science and Technology**
 - Attract youth to science and technology careers
 - Educate youth about conservation, energy efficiency, and renewables
 - Leverage the applications of the DOE/EERE materials for in-school and out-of-school educational settings
 - Engage the 4-H youth development program system
 - 8 million youth ages 7 – 17
 - Program includes
 - Club activities
 - Enriched curriculum for in school programs
 - Before and after school learning opportunities
 - Transfer what is learned in 4-H to other youth development organizations (i.e., FFA, Scouts, Boys and Girls Clubs)

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Academic Discipline – Technology Cross Reference Matrix

Discipline	Energy Supply Technologies					Energy Efficiency Technologies			
	Geothermal	Solar	Hydrogen	Biomass	Wind	Buildings	Transport	Industrial	Distributed Energy
Physical Sciences									
Chemistry									
Physics									
Geoscience									
Materials									
et cetera...									
Biological Sciences									
Biology									
Microbiology									
Agriculture									
Genetics									
et cetera...									
Social Sciences									
Government Policy									
Economics									
Statistics									
Psychology									
Marketing									
et cetera...									

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Project #3: Youth Education in Science and Technology

Executive Directors

- Linda Kay Benning (Assoc. Director Federal Relations, NASULGC Headquarters – Extension)
- Ian Maw (Director Academic Programs NASULGC Headquarters) National 4-H Council
- Eddie Locklear (Director – 4-H After-School Program) DOE Regional Office
- Jim Powell (Director Atlanta Regional Office) DOE HQ
- Lani Macrae (Education Coordinator – DOE)

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

The Five Projects

- **Project # 4 – Engaging the Research Capacities of the NASULGC Institutions**
 - Provide added access to the state university and land grant colleges R&D capacities
 - Define barriers to cooperation especially as they relate to IP (survey)
 - Access current activity in the multi-state research portfolio
 - Invite DOE personnel and contractors to participate in appropriate projects
 - Become a resource for DOE peer review panels, Advisory Boards, reviewers of programs and IPA personnel
 - When appropriate conduct relevant multi-state research committee meetings at DOE facilities

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Project #4: Engaging the Research Capacities of the NASULGC Institutions

Executive Directors

- Tom Fretz (Executive Director, Northeast Region – Research)
- Eric Young (Executive Director, Southern Region - Research)
- Rick Brenner (NASULGC HQ) DOE Golden Field Office
- Jeff Baker (Manager Partnerships and Agreements) DOE HQ
- David Rodgers (Senior Advisor to the DAS/TD)

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

The Five Projects

- **Project # 5 – Workshops at the DOE Labs for Scientists from the NASULGC- Affiliated Institutions**
 - Expand the connections between scientists at Labs and Universities
 - Increase the possibilities of collaboration
 - Focus on major programmatic areas (i.e., wind, solar, biomass etc.)
 - Emphasize participation of young scientists and underrepresented minorities at NASULGC institutions
 - Compliment the teaching activities at the universities
 - Develop graduate and undergraduate linkages
 - Explore the possibility of student/faculty/scientists exchange between universities and laboratories

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U.S. Department of Energy
Energy Efficiency and Renewable Energy

Project #5: Workshops at the DOE Labs for Scientists from the NASULGC- Affiliated Institutions

Executive Directors

- Sam Donald (Executive Director, 1890 Universities – Research)
- Mike Harrington (Executive Director, Western Region – Research & Extension) DOE Laboratory
- Stan Bull – (Associate Director, National Renewable Energy Laboratory, Golden, Colorado) DOE HQ
- Sam Baldwin (Board of Directors)

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DOE NA SULGC Project Tracking System

Project 3

July 2004

Project #	Project Title	Objective	Main Activity	Specific Activity	Date Due	Location	Lead Person	Report Month	Status	Status Symbol	Accomplished This Month
3	Youth Education in Science and Technology	Engage the 4-H youth development program system	Determine feasibility of conducting pilot 4-H education project	Review DOE Materials for application to school-age audiences in the pilot project	March 2004	Washington, DC	Benning/Maw	March-04	No Issues		Meet with Lani Macrae (DOE) on DATE and discussed existing education materials in EERE
3	Youth Education in Science and Technology	Engage the 4-H youth development program system	Determine feasibility of conducting pilot 4-H education project	Review DOE Materials for application to school-age audiences in a pilot project	March 2004	Washington, DC	Benning/Maw	April-04	Completed		Met with NEED personel to review materials. Selected materials for pilot project.
3	Youth Education in Science and Technology	Engage the 4-H youth development program system	Determine feasibility of conducting pilot 4-H education project	Review DOE Materials for application to school-age audiences in a pilot project	March 2004	Washington, DC	Benning/Maw	May-04	Completed		Completed in April
3	Youth Education in Science and Technology	Engage the 4-H youth development program system	Determine feasibility of conducting pilot 4-H education project	Review DOE Materials for application to school-age audiences in a pilot project	March 2004	Washington, DC	Benning/Maw	June-04	Completed		Completed in April
3	Youth Education in Science and Technology	Engage the 4-H youth development program system	Determine feasibility of conducting pilot 4-H education project	Determine feasibility of using 4-H After-School for pilot	March 2004	Washington, DC	Benning/Maw	March-04	No Issues		Engaged 4-H After-School personnel
3	Youth Education in Science and Technology	Engage the 4-H youth development program system	Determine feasibility of conducting pilot 4-H education project	Determine feasibility of using 4-H After School for pilot	March 2004	Washington, DC	Benning/Maw	April-04	Completed		To Be Filled In
3	Youth Education in Science and Technology	Engage the 4-H youth development program system	Determine feasibility of conducting pilot 4-H education project	Determine feasibility of using 4-H After-School for pilot	March 2004	Washington, DC	Benning/Maw	May-04	Completed		Completed in April

DOE NA SULGC Project Tracking System

Project 3

July 2004

Project #	Project Title	Objective	Main Activity	Specific Activity	Date Due	Location	Lead Person	Report Month	Status	Status Symbol	Accomplished This Month
3	Youth Education in Science and Technology	Engage the 4-H youth development program system	Determine feasibility of conducting pilot 4-H education project	Determine feasibility of using 4-H After-School for pilot	March 2004	Washington, DC	Benning/Maw	June-04	Completed		Completed in April
3	Youth Education in Science and Technology	Engage the 4-H youth development program system	Conduct pilot 4-H education project	Identify and train 4-H participants	July 2004	Washington, D.C	Maw/Benning	April-04	No Issues		Identified the states/universities to draw the 4-H educators from.
3	Youth Education in Science and Technology	Engage the 4-H youth development program system	Conduct pilot 4-H education project	Identify and train 4-H participants	July 2004	Washington, D.C	Maw/Benning	May-04	No Issues		Selected facility for training and sent letters out to seven universities on 5/28/04 asking that three 4-H educators be sent from their state.
3	Youth Education in Science and Technology	Engage the 4-H youth development program system	Conduct pilot 4-H education project	Identify and train 4-H participants	July 2004	Washington, D.C	Maw/Benning	June-04	Completed		Conducted training and developed a feedback report based on input from trainees
3	Youth Education in Science and Technology	Engage the 4-H youth development program system	Conduct pilot 4-H education project	Identification of specific pilot project states, sites, and dates	May 2004	Washington, D.C	Maw/Benning	March-04	No Issues		Identified states for pilot projects
3	Youth Education in Science and Technology	Engage the 4-H youth development program system	Conduct pilot 4-H education project	Identification of specific pilot project states, sites, and dates	May 2004	Washington, D.C	Maw/Benning	April-04	No Issues		Identified Sept. 27 - October 8, 2004 as target dates to begin project
3	Youth Education in Science and Technology	Engage the 4-H youth development program system	Conduct pilot 4-H education project	Identification of specific pilot project states, sites, and dates	May 2004	Washington, D.C	Maw/Benning	May-04	No Issues		Identified pilot sites

DOE NA SULGC Project Tracking System

Project 3

July 2004

Project #	Project Title	Objective	Main Activity	Specific Activity	Date Due	Location	Lead Person	Report Month	Status	Status Symbol	Accomplished This Month
3	Youth Education in Science and Technology	Engage the 4-H youth development program system	Conduct pilot 4-H education project	Identification of specific pilot project states, sites, and dates	May 2004	Washington, D.C	Maw/Benning	June-04	No Issues		Need specifics on sites selected and dates of implementation etc.

Rebuilding Florida's Homes: Trainings on Best Durability and Energy Efficiency Practices

Pierce Jones¹ PhD
Florida Energy Extension Service
University of Florida

Background: The Florida Energy Extension Service (FEES) is a unit within the Cooperative Extension Service at the University of Florida that produces, markets, and delivers educational materials and programs concerned with residential construction. FEES educational materials are all designed to promote understanding of the connection between building designs, construction processes, and materials as they relate to durability, resource efficiency, and profitability. Our primary product is *Build Green & Profit (BG&P)*, a 14-hour, modular, highly interactive, continuing education program approved for presentation to licensed Florida building professionals (contractors, inspectors, architects, engineers, and others). To date in 2004, ~2,000 registrants have attended *BG&P* and our other continuing education programs. FEES is also involved in applied building sciences research projects, such as the construction of a model home built to very high energy-efficiency standards (HERS > 94) that will serve as a sales and design center for *Madera*, an 88-home environmentally friendly community in Gainesville, Florida.

Situation: In 2003 under contract to FEES developed two courses on structural wind loading. The courses are presented as a 7-hour continuing education program: *Part I: Structural Wind Loading Criteria* (4 hours – 130 pp) and *Part II: Wind Load Design Options* (3 hours - 170 pp). To date in 2004, 18 programs have been conducted throughout Florida: the first in Ft. Myers in April and the most recent on August 30th in Tampa. There were ~600 participants with about 50 percent being engineers and the remainder being contractors and architects.

Over the last month, three Hurricanes (Charley, Frances, and Ivan) have hit Florida, causing considerable damage in central Florida and the panhandle. As the cleanup is completed, the reconstruction of Florida's damaged and destroyed homes will begin in earnest. In addition, Florida's new home construction industry will return to normal production levels (~100,000/year). Personal experiences and the vivid images of failed homes in the news media have created a heightened appreciation of the importance of proper construction.

In response to the storms, the State of Florida extended its deadline for licensed building contractors to obtain their required continuing education hours from August 31st to November 1st. In turn, FEES has scheduled 10 more *Structural Wind Loading* courses in October in counties along the paths of Hurricanes Charley and Frances. Architects and engineers have later deadlines (February 28, 2004 for architects) and additional classes are being scheduled.

The materials in the *Structural Wind Loading* course are based directly on Chapter 16 of the Florida Building Code. The materials include example structures for performing calculations, but no building failure survey information is presented nor is any comparative analysis of building performance.

Proposal: We suggest that the *Structural Wind Loading* course be customized to include a 1-hour continuing education module covering case studies of strengthened building systems and enhanced roof covering options. Specifically, the Florida Energy Extension Service has worked with Steven Winter Associates (SWA) on three types of strengthened housing systems in Florida that could serve as examples:

¹ PO Box 110940, Gainesville, FL 32611; Voice – 352-392-8074; Fax – 352-392-9033; ez@energy.ufl.edu

- 1) Mercedes Homes (Melbourne) – Under contract to the DOE Building America program, as a member of the Consortium for Advanced Residential Buildings (CARB), SWA designed and guided construction of Energy Star homes that featured a solid-pour concrete wall system. The University of Florida (FEES) under contract to FEMA conducted structural analyses of the homes and worked with SWA to identify supplemental upgrades to protect openings and minimize water damage from roof covering failures. Mercedes has built ~1,000 homes using the system.
- 2) Madera/Carter Construction (Gainesville) – The University of Florida (FEES) built a resource efficient model home (HERS>94) using an insulated concrete form (ICF) wall system. SWA (CARB) supported design of the home’s energy efficiency features under DOE’s Building America program and evaluated certain products used in the home under HUD’s Partnership for Advancing Technology in Housing (PATH) program.
- 3) Home Front Homes (Sarasota) – Most recently, FEES and SWA have evaluated a steel reinforced panelized wall and roofing system intended for use in more affordable housing.

These three examples cover a reasonable range of products representing various price points (including workforce/affordable housing) and advanced, energy-efficient, and windstorm resistant technologies. The primary benefit of developing the case study module would be to increase awareness of these residential construction techniques among Florida’s building professionals.

Tasks: This is a small project with tight deadlines. The goal is to develop and incorporate supplemental training materials into the existing *Structural Wind Loading* course. Specifically, the new materials will feature case studies of advanced building systems currently being used in Florida that are both more energy-efficient and structurally stronger than conventional systems. Tasks and timeframes are as follows:

1. Obtain and review available information on targeted case study building systems. Obtain digital images of example homes that weathered either Hurricane Charley or Frances (or Ivan). Travel to sites as needed (Melbourne). - September/October
2. Develop quick, draft case studies. Include as available as supplemental appendices in *Structural Wind Loading* courses to be conducted through the end of October. - October
3. Create 1-hour module *Structural Wind Loading: Residential Case Studies* with PowerPoint module and participant guide. - October/November
4. Prepare and submit applications to the Construction Industry Licensing Board (CILB); Board of Architecture (BA); Building Construction Administrators and Inspectors (BCAI) board for approval of a 1-hour course on *Structural Wind Loading: Residential Case Studies*. – October/January.
5. Beta-test module in November; revise and incorporate into *Structural Wind Loading* courses offered through February 2005. – November-January.

Team: The Florida Energy Extension Service at the University of Florida will carry out this project with support from Steven Winter Associates, Mercedes Homes, Home Front Homes, Carter Construction, and various product vendors. Personnel directly supporting this project include:

- Craig Miller, (Educational Materials Developer) - Mr. Miller has a BS (Natural Resource Economics) and an MA (Adult Education). He serves as the Continuing Education Program Coordinator for the Florida Energy Extension Service. He also develops educational materials and was directly responsible for producing the current *Structural*

Wind Loading courses. He will direct development and testing of the *Structural Wind Loading: Residential Case Studies* materials and module.

- Hal Knowles, (Research Associate) - Mr. Knowles has a BS (Construction Management) and an MS (Interdisciplinary Ecology) from the University of Florida. He has work experience with a commercial construction company in central Florida and with the Center for Construction and the Environment. More recently, he co-authored a 4-hour continuing education course for Landscape Architects, planners, and developers titled *Preserving Wildlife Habitat in Residential Developments*. He is currently serving as a Research Associate with the Florida Energy Extension Service and is developing a workshop on low impact development for local elected officials.
- Barbara Haldeman, (Technical Editor) – Ms. Haldeman prepares and edits print and visual materials for all Florida Energy Extension Service continuing education courses. She was responsible for the 7-hour *Structural Wind Loading* courses as well as all of the Florida Building Commission courses produced over the last three years.
- Pierce Jones, Ph.D. (Administrator) - Dr. Jones has a PhD in Mechanical Engineering. He directs the Florida Energy Extension Service and is a Professor at the University of Florida. He will administer the project. In addition to general oversight, he will be specifically responsible for initial coordination between cooperators.

Budget: Work on this project will span six months (September–February). The final product will be a 1-hour continuing education module (*Structural Wind Loading: Residential Case Studies*) approved for presentation to licensed building professionals in Florida. The materials will be beta-tested initially as supplemental materials to the existing 7-hour *Structural Wind Loading* course and finally, as a stand-alone 1-hour module. Budget for the six-month period is as follows:

Personnel:

Educational Materials Developer	(.10 FTE)	\$ 3,200
Research Associate	(.25 FTE)	\$ 6,400
Graphics, Layout, Technical Editing	(.10 FTE)	\$ 1,600
Travel: (Melbourne, Pensacola, Port Charlotte...)		\$ 1,000
Expenses: (Printing, copying...)		<u>\$ 600</u>
	Direct	\$12,800

If this project is funded and passed through the Florida Energy Office there will be a 5 percent indirect charge, which is the best indirect rate available.

NASULGC/EERE Partnership

Response - Don Colliver

The objective of this narrative is to present potential models and examples of inputs provided by each partner to establish a successful working relationship between the BA program/teams and NASULGC teams working under the following vision and plans.

Vision: The overall goal is to get into the marketplace “acceptable” building techniques, equipment and energy conserving and/or generating items which will produce houses that will use x% less energy than the current baseline.¹

BA Plan: The current BA system appears to be striving for this goal by BA teams working with large production builders to develop, demonstrate, and test innovative practices and building techniques. The objectives are to debug problems with the innovations, demonstrate to the public the acceptability of innovations, establish the expertise amongst the building trades, gain information about the long-term performance of the innovations, and promote the trickling down of these practices to other builders.

NASULGC Plan: The objective of the NASULGC teams will be to sift through the technical information generated by the BA teams and present it to the general U.S. population (homeowners, builders, realtors, etc.) so as to generate the acceptability and marketplace demand for reduced-energy-consuming houses and also to serve as an independent authoritative reference source of information on energy efficient housing.

Working Relationship Models:

There are two potential models of the working relationships between the BA and NASULGC teams:

1. Divided by climate zones
2. Divided by technical areas

Climate Zone Model:

This model uses something similar to the Regional Hatch project approach. A NASULGC group works with each of the BA climate zones. Since many of the problems and building construction types are similar within a climate zone, much of the work is transferable between states. The lead NASULGC team for each climate zone would serve as the multi-state resource for development of education programs and display material for other states within the climate zone. Individual states within a climate zone would serve as the primary delivery source for the information to the clientele within each state. A single NASULGC team would serve as the coordinator for the regional NASULGC teams and provide the overall national leadership and coordination for the interaction with the BA teams. It should be expected that the NASULGC teams would also serve to integrate or coordinate activities with other groups involved with energy-efficient housing (e.g. Energy Star, Rebuild America, Alliance to Save Energy, NIBS, NAHB, NATE, etc.) as necessary to provide a unified approach to building innovative energy-saving houses.

Technical Area Model:

This model uses the NASULGC teams to develop educational and deployment materials for particular technical areas identified by BA such as HVAC, hot water, IAQ, envelope, solar, lighting, etc. These materials would then be used by the entire NASULGC distribution network. The value of this model is that the specialized technical expertise of each of the individual teams can be more efficiently utilized. A single NASULGC team would serve as the coordinator for the NASULGC teams and provide the overall national leadership and coordination for the interaction with the BA teams. It should be expected that the NASULGC teams in this model would also serve to integrate or coordinate activities with other groups involved with energy-efficient housing (e.g., Energy Star, Rebuild America, Alliance to Save Energy, NIBS, NAHB, NATE, etc.). This model would allow the teams to focus more in coordinating activities with the special industry groups serving each technical group.

Examples of Inputs to Partnership:

Regardless of the model selected, examples of some of the inputs which could be provided by the BA and NASULGC teams are as follows:

Examples of BA Teams Input:

- Identification of “innovations”
- Indication of energy impacts of innovation
- White papers or fact sheets on each innovation or building practice
- Summary of results / findings of expert meetings
- What worked and didn’t work
- Key factors to successful implementation of innovation
- Hotline for technical questions and design assistance
- Advice on innovations or new products introduced by other groups or manufacturers
- Database of building graphics including good and incorrect installations
- Database of responses to FAQs
- Computer models to evaluate where the individual homeowner should invest their next “energy saving” dollar²

Examples of NASULGC Input:

- Development of web based educational tools
- Development of displays and handout material for use at home and garden shows, utility builder training programs, conferences, etc.
- Coordination of training and/or certification programs for contractors, building trades, realtors, rural electric cooperative associations, etc
- Teaching “energy efficient” design and construction as part of curriculum and in shortcourses
- Provide specialized computer model development
- Provide training on energy modeling (e.g. HERS, EnergyPlus, etc)
- Provide leadership and coordination in energy advocacy and/or professional engineering/architecture groups
- Work with code officials in local jurisdictions
- Provide FAQs for BA team responses
- Feedback to BA teams on problems or acceptability of “innovations”

- Provide long-term evaluation and monitoring of innovations installed
- Utilization of existing expertise of university research faculty, graduate students and facilities in applied research
- Development and implementation of advanced of computer visualization programs

¹ It is assumed that the energy consumption goals are relative to the building structure and installed equipment and do not include the “plug loads”. This assumption has the potential for a considerable debate and greatly influences the focus of the work. Since the plug loads are dependent upon the appliances, equipment, lights, etc. that the building occupants use in the building it is very difficult if not impossible to include the energy usage of plug loads in the lifetime savings of the building.

² An example of models needed would be one which could be used by the homeowner to evaluate the energy usage of his/her home and give guidance on the impacts of different alternatives (For example, should I first invest in a different type window or a more efficient heat pump?)

NASULGC/EERE Partnership
RESPONSE- Robert Fehr

In the answers below I have tried to view this as a national model for a system in which every state Extension Service is involved. There are some things that might work for this pilot project that would not work for a full scale system.

ACTION ITEM:

Each faculty member in attendance will send to George James a description of the type of information that the faculty would like to have from the BA program and BA Teams, such as:

- **reports of expert meetings**
- **team activities,**
- **BEBA activities**

ACTION ITEM:

The Extension faculty will each develop a proposed design for how they envision working with the BA program and the BA Teams. Email these proposals to George James with copy to Pat Love within three weeks.

While these two items are listed separately, I view them as basically the same. In the end this is about an effective method of communication between the two groups – hard to know what to ask for if you do not know what someone is doing and hard to know what to provide if you do not know what is wanted.

My main interest would be access to them as a technical resource in addition to knowing what they are doing. Knowing what they are doing could include those items listed above or could be as simple as having the BA Teams quarterly reports, I assume they do them, posted somewhere on the Web where I can review them.

The technical resource may go beyond a simple question/answer to a complete design or the need for a research project. For example, one BA Team talked about a house they designed for the Nebraska. I could not tell if that was done under their BA contract or if Nebraska had funded it. There would need to be coordination between states or some understanding on the limits of such requests to protect the BA Teams.

For some of the simple technical question/answer needs, as a national model I would suggest a list server address for each climate region, maybe one for the nation to start with, so that I could see what others were asking and what answers were being given.

A secondary interest would be that in some coordinated way, Extension could request specific information be developed/provided. For example, a group of states might ask that a white paper be written on the state of the art on some topic and the BA Teams might have an expert meeting to gather the information necessary to address the topic. The reason I said coordinated is that I do not think as a national model every state should be asking for whatever they want developed. Such a request might result in research needed in which the states could assist with the research.

I would suggest that consideration be given to a model where one state Extension Service in each climatic region assumes the coordination role for other states in that climate region including education program development and working with the BA Teams assigned to that climatic region. Those states then form a national coordination group for work with BA, with one state taking the lead role in seeing that communications is going on between all states and in developing nation initiatives for BA to work with/on. This would require a state that is willing to accept this roll and would most likely be done by a state that currently has major program activities in the residential construction, such as Florida or New York. This is modeled after what I saw being done with the BA Teams at this meeting. This would work well with other activities of BA that are being done on a climatic region basis, such as Houses that Work, Best Practices Builders Manuals, etc.

ACTION ITEM:

Send Mike comments on Best Practices Manual, Vol. 1, via email or phone by

September 10

Done

ACTION ITEM:

Send to George comments on Houses that Work – Deadline October 15

I would make most of the same general comments about that *Houses that Work* as I did about the *Best Practices Manual*. My major concern with this document is what it is intended for, audience and use. The *Best Practices Manual* has the look and feel of an overview, while the *Houses that Work* appears to be more detailed review of the topic. As a detailed review, with all the detailed information referenced as URL's, I would find the *Houses that Work* publication to be of limited value as a training aid, for example, where the focus of the training might be those details.

My general suggestion would be that the two documents be coordinated. It would appear that the new Web site at PNNL for the building code documentation is a natural for both of these documents. For this document, *Houses that Work*, in Kentucky I would expect to distribute that as an electronic file, such as a CD, so the overall size of the document is not an issue. One advantage for putting both documents in the PNNL system is that creating a document for each climate region is greatly simplified.

ACTION ITEM:

Develop a list of the key players working in the housing area and send organizations & contact names to George James.

Information requested by Jim Fischer:

Ext. Activities Report by November 1

We will provide an enhanced copy of the quarterly report we submit to the State Division of Energy for our existing grants.

Future plans and long term ideas before Sept. 7

Long term the model of an Extension Associate to carry the message out, an Extension faculty member to develop the message, delivery tools and support delivery, and a research faculty member involved in building energy research appears to be a good one. In Kentucky that model works in part based on the interest of the Biosystems and Agricultural Engineering faculty and the funding provided by the State Division of Energy. I do not think that one can expect many states to be in this situation.

Assuming some type of regional Extension involvement along climatic zones, it may be possible for a state to have a program utilizing only an Extension Associate by having access to materials developed by the state responsible for coordination of a climatic region. The advantage of this person being part of a state's Extension program is the access to the various Extension support systems already in place. For example, in Kentucky we have utilized mass media, professional display designers and builders, publications design and editing, storage for displays, etc just because we are part of Extension. Even within BAE, we utilize departmental resources in support of our current program, such as vehicles and personnel to transport the displays.

The national model for Extension involvement is complicated by which department/program area handles the residential energy program for Extension within a state. Some states handle that through the Biosystems and Agricultural Engineering Department and other handle it through the FCS program. Even in Kentucky, there are both BAE and FCS faculty involved in various areas related to residential energy. With the climatic regional coordination model in place I do not think this would be an issue. In fact, with Extension's requirement to devote funds to multi-state activities this could be a natural fit.

Will expect BA teams to involve Extension?

While I would say that we should at least be given the opportunity for involvement, then the question is who does the BA team contact in a state. For this idea to move forward I believe Extension must step forward with a plan for engagement. I believe Extension could play a major role in working with the BA teams on the type of applied research projects that were described at the meeting in addition to outreach.

First, how should the BA-Extension activity be funded?

This gets a little tricky based on what exactly a state Extension energy program would do. With our grant from the State Division of Energy we are able to focus on the entire range of energy topics including new residential construction, remodeling, commercial buildings, agricultural energy use and production, etc and related concerns such as radon, mold, IAQ, etc. If the grant came to a state Extension program directly from DOE for BA related programs only, than that could limit what could be done beyond the flexibility as to whom to target and how do to it, and on the deliverables. The success of Kentucky's or any state utilizing our model relies on the willingness of both parties to work together.

Short Term Plans

Based on the current funding provided by the Kentucky Division of Energy to the Extension Service our future plans are to work on methods to enhance our outreach efforts. The past focus of our outreach is the use of displays/booths at shows around the state. These efforts have lead to invited presentations before various groups such as, builders associations, realtor associations, rural electric cooperative associations, etc. We are now looking into the possibility of upgrading our presentations and supporting materials to be able to provide continuing education units for various groups in the state. These efforts will be aided by the new documents being created, *Houses that Work* and the *Best Practices Manual*

We are completing work on a cd of energy publications to be a part of our training program. The cd will contain a search engine of the publications it contains. The cd is designed so the same information can be made available via the Web by simply copying the information there, including the search engine. As a part of our display effort we are creating a series of 4 ¼ x 11 handouts, to be printed on card stock, that provide a summary of a publication's information using both the cd and Web site for the complete publication.

We will continue to work with the FCS program to provide materials targeting homeowners. The state has a strong network of Homemakers Associations that utilize training materials as a part of their programs. This allows us to utilize that resource to enhance consumer education of BA best practices. FCS state staff and agents have been a valuable resource in our efforts to this point.

NASULGC/DOE-EERE Partnership Project

Engaging Extension with Building America Program

Response to Action Items

By Claudette Reichel, Louisiana State University

Action Item 1: Types of information faculty seek from BA program and teams

- BA and relevant DOE lab research brief summary reports (sent automatically) and access to full reports/articles upon request.
- Minutes of BA Expert Meetings.
- List of BA team staff and area of expertise/research; indication of primary contact persons (liaison for faculty) and contact information
- BA team plans of work and activities (simple list of planned projects – who, what and where).
- Notification when a BA team will be working in our vicinity; invitation to be involved, observe, help, etc.
- Official linkage of faculty with one or two BA teams (whose research is most relevant to climate region of faculty); inclusion of designated Extension faculty as a team member/partner in an annual meeting, dialogue, collaboration, outreach plans, perhaps some research efforts when appropriate.
- Add faculty to BA newsletter mailing lists
- BA educational publications and curricula (targeting builders and consumers)
 - When possible, electronic copies than can be adapted for local climate
- Funding opportunities for Extension programs and University research

Action Item 2: Proposed Design for BA/Extension Partnership

I believe it would be most productive and effective to have three tiers or avenues of linkage:

- **Incentive for BA teams to engage Extension**, so they can choose faculty that best fit their programs of work, outreach needs and climate zones.
 - Include a funding supplement to each BA team for collaboration expenses and to subcontract with one or more Extension Housing or Energy Specialists in the climate zone of the team's primary research program.
 - Such subcontracts would secure a portion of faculty time and supply costs to conduct Extension educational outreach to consumers and/or home builders and designers. This would leverage DOE funds with existing Extension resources and programs to get more outreach “bang for the buck”.

- **Earmark two portions of SEP competitive grants** for land grant universities to:
 - conduct BA related energy educational outreach programs (to consumers and builders), and
 - for applied research projects that relate to BA objectives, favoring proposals that involve BA team members.
- **Establish four regional Extension Housing Education Consortia or Centers** – to synthesize, disseminate and stimulate adoption of residential building systems research throughout each region, using the Extension educational networks and system.
 - One consortia or center per Extension region: Northeast (CT, DE, ME, MD, MA, NH, NJ, NY, PA, RI, VT, WV, DC); North Central (IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI); Southern (AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX, VA, PR, USVI); Western (AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, WY, American Samoa, Guam, Micronesia, Northern Marianas). Each of these regions have at least two strong state Extension Housing programs and faculty with energy and building systems expertise.
 - Establish through cooperative agreement and support (funding) from USDA-CSREES, US DOE-BA, US EPA-EnergyStar, and HUD PATH, since each of these agencies have programs that share common objectives to increase the affordable energy-efficiency of housing in America.

Specifically, my **vision for Louisiana Extension and Building America** linkage includes:

- Formalized and strengthened linkages of Building Science Consortium and FSEC with Louisiana Extension Service of LSU AgCenter via its LaHouse Resource Center and program (via supplement to BA teams).
 - Officially recognize LSU AgCenter as a BA partner.
 - Include LaHouse demonstration house in BSC's and FSEC's Building America project roster – to continue and expand technical assistance during and after construction, plus monitoring instrumentation and analysis of performance of its various building assemblies.
- Establishment of LaHouse Resource Center as a BA deployment partner for the hot-humid climate guidelines (via SEP grant).
 - Consumer educational outreach – to stimulate demand
 - BA information and TA resource center for home builders and designers
 - EEBA course training outlet (for Houses that Work)
 - Applied research collaborator and site for hot, humid, hazard resistant building science.
- Establishment of Southern Region Extension Housing Education Consortia (via multi-agency agreements and funding), including LSU's LaHouse, Florida Energy Extension, North Carolina Extension and others (perhaps Kentucky, Georgia, Texas).



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Other Information

18-2004) **Survey of LGU Research Offices**
Agenda (04-28-2004) **SECAEX**
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IP issues for DOE_NASULGC interactions (03-02-2004)
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Project 3

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Project 4

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Project 5

Workshops at the DOE Labs for Scientists from the NASULGC-Affiliated Institutions

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“Building A New Model for Government/University Interactions”

Dr. James R. Fischer
Update Reports Session – DOE AND USDA
National Association of State Universities and Land-Grant
Colleges (NASULGC) Annual Meeting
New Orleans
November 17, 2003

I should preface my remarks today by letting you know that I am not here to provide you with an “update” on a particular project or program. What I will be doing instead is to tell you about the beginning of a new opportunity for building a partnership between NASULGC and the Department of Energy (DOE).

Perhaps the best way to begin is by telling this story about Albert Einstein.

Albert Einstein was walking across campus with a colleague and mumbling to himself. The colleague asked him “What are you mumbling about?” Einstein said, “I am trying to think of the right question.” His colleague replied, “You are the great Einstein – you know ALL the answers.” Einstein replied, “It takes an intelligent person to ask the right question, anyone can identify the wrong answer.”

In the course of my remarks today... ***I will be examining a number of questions***, as Albert Einstein advised, to help us in our thinking as we begin to develop a vision and the elements of a working partnership between our two organizations.

I think the right questions to ask are...

- Why is my office, the Office of Energy Efficiency and Renewable Energy, interested in building a long-term partnership between universities and our program activities?

- HOW did we get here in terms of exploring a potential collaboration between our two organizations?
- WHY are we interested in looking at a new partnership model?
- Why is NOW the time to begin a new effort?
- WHAT is at stake if we do not enhance renewable energy sources and increase the efficiency of our energy consumption?
- WHAT is the Federal government doing about these issues?
- HOW can we best partner together to develop and transfer crucial energy efficiency and renewable energy technologies for the future? and
- WHAT do we need to do to start moving on these ideas?

So to begin... **Why is my office, the Office of Energy Efficiency and Renewable Energy, interested in building a long-term partnership between universities and our program activities?**

This audience is well aware of the research and transfer of technology that has taken place at land-grant and other education institutions, and the cooperative extension system, that has resulted in an exponential rate of increase in food production, outpacing the rate of human population increase.

This success is even more remarkable because in recent years the increase in food production has occurred using less land. This system created:

- the first hybrid seeds;
- the first mechanical reaper;
- lightweight gasoline tractors (releasing thirty million acres of draft horse pasture for human food crops); and,
- many of the pesticides and new crop varieties that protect the world's food supplies from destructive and wasteful insects, weeds, bacteria, and fungi.

We, at the Department of Energy, see similar potential and opportunity FOR YOU to help US develop and disseminate technologies. My office, the Office of Energy Efficiency and Renewable Energy, is seeking to build a long-term partnership

between universities and EERE program activities as a mechanism to develop and disseminate energy efficiency and renewable energy production technologies. The seeds for a partnership between the two organizations were planted several years ago when Doug Faulkner, then a civil servant charged with building a broad coalition for biobased products, and now a political appointee serving as our Principal Deputy Assistant Secretary, met with NASULGC representatives. More recently, Peter Mcgrath, the President of NAGULGC, and David Garman, the Assistant Secretary of DOE's Office of Energy Efficiency and Renewable Energy (EERE), met and agreed to collaborate and to develop and disseminate a new partnership model.

I feel this is a particularly fortuitous time to be discussing this idea. Both NASULGC's member institutions and the Energy Efficiency and Renewable Energy programs of the Department of Energy are about enhancing the quality of people's lives. Both organizations have recently invested in developing plans and roadmaps to lead these entities into the 21st century. Both organizations are now seeking to engage other organizations with whom they can develop productive partnerships, and build integrated programs that will result in interactive and responsive organizations. And both organizations are seeking to put critical resources to work on problems that communities and the nation face.

So... HOW did we get here in terms of exploring a potential collaboration between our two organizations?

You, at the NASULGC member institutions and associated universities, have been preparing for the changing societal needs and challenges of the 21st century through the development of plans and roadmaps. You have pursued "futuring" efforts, conducted listening sessions, developed strategic plans, and published reports concerning the need to do business differently in the 21st century. I enjoyed the privilege of working with you on many reports prepared by CAST, NABC, the ESCOP Science Roadmap, the ECOP 21st Century Extension report, the ACOP Strategic Plan, to name a few.

NASULGC, in partnership with the Kellogg Foundation formed the "Kellogg Commission on the Future of State and Land-Grant

Universities.” This commission published a series of monographs called “Returning to Our Roots.” This series challenged the universities to do business in new and creative ways. Words like “partnerships,” “collaboration,” and “engagement” are dominant in the reports.

Personally, I have invested a significant portion of my professional life working with many of you and your organizations and associations, with the purpose of alerting universities to the dynamically changing environment in which they operate. Why did I invest my time in these endeavors? Because I believe that, in a democratic capitalistic society, an intelligent, knowledgeable citizenry is essential. The development and transfer of knowledge is the business of universities.

The Kellogg Commission Reports and other documents encouraged universities to get connected to become engaged, with the people they serve, from students and families to farmers, homeowners, industry partners, and government agencies. Now that is where I as an employee of a government agency, the Department of Energy, come in. The NASULGC community is interested finding new ways to partner with federal agencies and I am interested in helping you do that.

Similarly, my office at the Department of Energy, EERE, has also been going through a series of changes. We have been challenged by our Secretary of Energy, Spencer Abraham, to revolutionize the way we approach energy efficiency and renewable energy technologies. He has asked us to “**leapfrog the status quo**” and pursue “**dramatic environmental benefits.**” As a result, the Office of Energy Efficiency and Renewable Energy has been totally reorganized with the intent of creating a more responsive organization. Instead of 31 technologies, it has been streamlined into 11 program areas.

Moreover, a special public sector Board of Directors has been created, similar to its private sector counterparts, that functions to serve the Assistant Secretary, David Garman, by providing advice and counsel on policy and strategy issues. The existence of a Board of Directors as a governmental function is a brand new concept.

While government has long relied on advisory boards for counsel, EERE, as far as I know, is the first federal office to engage a full-time Board of Directors, has the opportunity to set a new standard for excellence in government.

The EERE Board has five members, each with a specific focus, ranging from international affairs to technical and analytic integrity. One of these positions, which I was recently appointed to, focuses exclusively on “*Universities & Education*.” In this position, I am working to develop new and innovative partnership and education models with universities, especially land-grant universities, appropriately-related foundations, and the agricultural, industrial, and business communities.

You may ask, WHY are we interested in looking at a new partnership model?

The EERE office manages a \$1.3 billion portfolio of research, development, demonstration, and deployment activities promoting energy efficiency and renewable energy. While some energy-saving technologies have begun to become commercially available, such as the compact fluorescent light bulb, wind power, and the hybrid car -- technological innovation to increase the efficiency of energy use and provide more renewable energy will be crucial to supplement existing energy resources.

One of the ways we are meeting the challenges we face in advancing energy efficiency and renewable energy technologies in the U.S. is by building partnerships with organizations, such as NAGULGC.

The Department is already impressed by the capabilities of your membership, as a number of your members are active in our research and development projects. In fact, there are currently over 600 R&D projects at colleges and universities funded by the Department of Energy. However, there are currently only a small number in the area of energy efficiency and renewables. **How can we expand the EERE effort at universities?**

Furthermore, cooperative extension agents, trained and informed about opportunities to improve energy efficiency and adopt renewable energy technologies, could vastly improve the reach of results coming from university researchers as well as DOE research laboratories. This would help local communities to become more energy secure and economically competitive. Information on challenges perceived by the agents can also inform research and development investments in the universities themselves, and in the national programs.

Perhaps, some of you may be thinking, “yeah, right – new sources of energy – we tried that back in the seventies.” What’s so novel about alternative energy technologies and this partnership idea anyway? We tried alternative energy systems in the seventies, and many of the universities and extension services were involved in developing and transferring this energy technology, particularly to farm and rural areas. In fact, I was part of that effort as a young research engineer who helped define the original design criteria for an on-farm integrated energy production system. We learned a lot then and we need to build on these lessons.

But WHY is NOW the time to begin a new effort?

Not since the early seventies has there been a more compelling environment for energy innovation and market expansion.

As we observe our nation’s 30th anniversary of the 1973 oil embargo, the U.S. continues to consume more oil and produce less. Back in the 70s, our domestic production about equaled our consumption. Now we import over 50 percent of our needs. Increasingly, there is a need for clean, low carbon energy choices that can also provide domestic energy security, not dependence on unpredictable overseas fossil fuels.

And petroleum consumption is not our only energy concern...

Do you remember where you were on August 14, 2003? That was the day of the “blackout” where a substantial portion of the northeastern United States and Canada suffered a massive power outage. Although that date itself may not be engraved in our

memories like at least one other of the past two years, the day's events will be remembered as having shaped our national consciousness. Even those of us who were not without power on that day now think somewhat differently about some crucial features of everyday life that we had perhaps thought we could take for granted.

So WHAT is at stake if we do not enhance renewable energy sources and increase the efficiency of our energy consumption? The best case scenario would be a society of energy haves and have nots based on the ability to pay for more expensive energy. The worst case scenario would be a society rapidly moving to economic chaos because of the lack of energy to continue to fuel the economy.

What is the Federal government doing about these issues? The President has developed the National Energy policy that is working to ensure that policies are in place that will build a future on energy efficiency, increase supply, upgrade infrastructure, and preserve a quality environment.

We are also supporting USDA's efforts to implement key elements of the 2002 Farm Bill, as well as develop robust programs for the future. I might add that this was the first time that energy legislation was specifically included in a Farm Bill.

The EERE office leads DOE's support for USDA on Section 9006, under Title IX of the Farm Bill, also known as the "Renewable Energy Systems and Energy Efficiency Improvements Program." Last year, \$22 million was awarded under this program to rural small businesses, farmers, and ranchers to develop renewable energy systems and make energy efficiency improvements to their operations in 30 states. Do you know where these pilot demonstration sites are in YOUR state? Have you considered how you can use this opportunity? One idea may be to have an "Energy Field Day" demonstration with farmers and other rural citizens. I am presently working with USDA in developing the next solicitation of Section 9006, which will be awarded in FY 2004.

The 2002 Farm Bill also identified funding for research under Section 9008 to support the Biomass Research and Development

Act. As a result, the U.S. Departments of Agriculture and Energy recently awarded \$23 million in biomass research funding to 19 projects selected under a joint solicitation that includes the participation of a number of land-grant and state universities. This marks the first major collaborative effort by the two departments to solicit and select biomass research and development projects and a significant leap forward in interagency coordination, federal resource leveraging, and the realization of the goals outlined in the Biomass R&D Act of 2000, which calls for increased collaboration between USDA and DOE. The joint solicitation allowed the two departments to solicit research that addressed their specific missions in a coordinated manner. We are also collaborating with USDA and the Department of the Interior on a policy initiative related to energy, forest thinning, and forestry policy,

I am currently working with Keith Collins, Chief Economist at USDA, the Farm Foundation, and about five Agricultural Economics professors from land-grant universities on a national workshop on energy production and consumption in agriculture that will be held next year on June 24th and 25th in Washington, D.C. A number of research papers will be presented at the conference that you might be interested in hearing about. The four commissioned papers for the conference are:

- “Agriculture as a Producer of Energy” by Vernon Eidman from the University of Minnesota;
- “Agriculture as a Consumer of Energy” by John Miranowski at Iowa State University;
- “Energy Systems Integration” by Otto Doering at Purdue University; and,
- “An Overview of Energy Markets and Near-to-Mid-Term Outlook for Energy Markets by Guy Caruso, the Administrator of the Department of Energy’s Energy Information Administration.

In terms of new energy legislation on the horizon, negotiators are currently working to reconcile House and Senate versions of the Energy Bill. Various titles of the bill include funding for renewable energy, energy efficiency, hydrogen, and clean coal.

While these developments are encouraging, more remains to be accomplished if we are going to reduce energy consumption in a way that preserves the best of industrial civilization, and we have to start now. Now... while we are still sufficiently energy-rich and material-rich to afford the high costs of technological development, and to buy time for the changes we need.

And this is where we, at EERE, need your help. We believe that the land-grant universities have the potential to help us not only in conducting R&D, but also in the dissemination of energy efficiency and renewable energy technologies.

My question to you is: HOW can we best partner together to develop and transfer crucial energy efficiency and renewable energy technologies for the future?

What I am talking about, to be clear, in terms of a partnership, is much broader and grander than isolated efforts here and there or a university professor applying for a typical grant from a government agency. We are interested in developing and pursuing a new model of cooperation as part of a larger vision of working together with land-grant colleges and universities.

Let me give you some examples of what I have in mind...of where I see a number of potential synergies between the two organizations:

- **Building America** is a public/private partnership sponsored by EERE to conduct systems engineering research to help the homebuilding industry provide homes that both save and produce energy through the application of energy efficiency as well as solar and other renewable energy technologies.

Goals for this program entail exceeding energy efficiency standards already set by the International Energy Conservation Code (IECC) which are already pretty stringent for a home, by at least 30 percent, and as high as 70 percent. At this time, 5 Building America teams are focused on research toward achieving at least 40 percent whole building savings. To date, the Building America Teams have been effective in establishing a demonstrated capability among a large number of building-

industry partners that have produced over 22,000 Energy Star “Plus” homes.

However, the level of direct technical assistance in terms of partnering with builders, which may be needed for the widespread adoption of Building America homes, is beyond the scope of the current teams. One promising mechanism may be to partner with the state universities and extension services to utilize their institutional knowledge to transfer technologies and training, to spread the “Build America” program to builders and consumers around the country.

One example of this mechanism is already taking shape in Florida where the Florida Energy Extension Services at the University of Florida provides continuing education to building professionals. The Extension Service is also participating in the design and development of an environmentally friendly, resource-efficient community known as *Madera* in Gainesville, Florida that will use home designs, construction materials, and products that provide energy efficiency and water conservation. This is particularly important in Florida because over the past decade 100,000 new single-family, detached homes have been built annually, making it one of the most active areas of new residential community development in the United States. The University is also interested in developing an innovative “Program for Resource Efficient Communities” that will offer multi-disciplinary continuing education and professional certification for building and other professionals in sustainable residential building and community land development techniques.

- **Hydrogen** is another important area where the Administration and DOE are focusing R&D efforts. We are conducting R&D in the areas of hydrogen production, storage and utilization for the purpose of making hydrogen for utility, buildings, and transportation applications. We are currently working to overcome critical barriers to the development of reliable, low cost, high-performance fuel cell systems.

Hydrogen, combined with fuel cell technology, will be critical for distributed energy applications. DOE is partnering with industry to develop the “FreedomCar” – what a great concept – that will give individuals the continued independence they need to use their automobile, where and when they want to go, with little or no emissions, as well as free our nation from its dependence on imported oil.

But one problem we are running into is the classic “chicken or egg” issue of whether to focus on developing new technology for automobiles and then fueling stations, or vice versa. In terms of developing relationships with educational institutions, university business schools may be able to help us through the development of case studies of other technology introductions that faced similar complementary resource problems, such as cell phones and towers, telephones and lines, gasoline and service stations, etc.

As hydrogen and other emerging EERE technologies become more advanced in their development, land-grant universities may also be able to aid us in the deployment process. One example of an innovative government/university partnership in this area is the Washington State University Extension which is currently implementing an “industrial technology clearinghouse” for EERE to provide technical assistance in energy efficiency and renewable energy. This “electronic extension” program helps to keep the Extension Service in the forefront of both dealing with cutting edge issues and expanding the Extension Service’s reach by providing new avenues for services to business and industry. Like the Florida example I mentioned earlier in terms of deploying building technologies, this is another model of a potential partnership arrangement between land-grant universities and EERE that might be able to help us in the future.

- Another area where there may be valuable synergies between the two organizations is in the **education of our youth**, particularly in gaining competence in math and science. Science and technology have generated about half of the productivity growth that the U.S. has enjoyed over the past 50

years. However, due to the approaching retirements of scientists, the Department of Labor is predicting that within the next 10 years that the American workplace will be 5 million short of the 18 million needed to replace our scientists.

We must prepare youth for a world vastly different from the one in which we were brought up. In the next century, this country will need citizens with more training in science and technology than in past generations. Even children who don't want to be scientists, engineers, or computer technicians will need to understand science to cope with the rapidly changing environment.

In terms of a partnership, we are currently examining working with the **4-H Youth Development Program**, which has had direct access to technology advances in agriculture and life sciences, family and consumer resource management, human development, nutrition and related areas, that result from land-grant university research. Their particular emphasis is "hands-on learning" or "learning by doing." By incorporating these interests into our energy programs, they can apply physics, mathematics, and other disciplines in the extension and dissemination of photovoltaic and other technology, where these scientific skills are critical.

- Our **Congressional Mandated Advisory Committees** is another area where we can build valuable synergies between the two communities. At EERE, we are required by Congress under the Federal Advisory Committee Act (FACA) to have advisory committees made up of a cross section of talented individuals who can provide the best advice for our programs. We currently have a total of three FACA committees including: The Biomass R&D Technical Advisory Committee, the State Energy Advisory Board (STEAB), and the Federal Energy Management Advisory Committee (FEMAC). A 4th Board on Hydrogen is pending in the current energy bill.

While we do have a number of university members currently serving on our Advisory Boards, under the new partnership arrangement that I am envisioning, if NASULGC would submit a

recommended individual to represent its organization, then we could capture the broader input of the agricultural and land-grant community. You, in turn, by working with us, will be able to better understand our mission and goals, and then transfer this knowledge and input to the NAGULGC organization, so it is a process that is mutually beneficial.

You have just heard several possible ideas for future collaboration, including the Building America program, the Hydrogen Program, working through the 4-H to build math and science skills by transferring energy technologies, and working to advance mutual interests through the participation of university staff in our Advisory Boards.

I also believe that working together will result in the students in your universities becoming aware of EERE's programs which will result in increasing the number of individuals that we hire from Land-Grant Universities. In addition, I believe that working together to empower individuals who have an interest in education and extension could greatly help to increase public awareness concerning the need for EERE technology development and deployment. And...creating the environment to pull a technology to the marketplace is 10 times more effective when introducing a new technology than pushing the technology to the market.

So WHAT do we need to do to start moving on these ideas?

I have begun the process of communicating some of these thoughts to the NASULGC Policy Board of Directors in a presentation that I made in mid-September entitled, "*Building a Partnership: Land-Grant Universities and the Office of Energy Efficiency and Renewable Energy.*" At that meeting, I discussed what I consider to be important elements of any partnership between NAGULC and EERE which include:

- The need to learn more about each other in terms of our respective organizational structures, purposes and priorities, programs and capabilities.

- The need to develop a shared partnership vision. This is something that is much broader and grander than isolated efforts here and there or a university professor applying for a typical grant from a government agency. We are interested in developing and pursuing a new model of cooperation as a larger vision of working together with land-grant and other colleges and universities.
- Lastly, we need to get started, but make it simple to begin with. We have begun by disseminating solicitation announcements and other information on upcoming EERE activities such as peer review and program planning at committee meetings through the listserv that Eddie Gouge in NASULGC manages. We also need to identify three or four items that we can work on and identify accomplishable goals with measured outcomes. I have suggested some but look forward to talking with you to discover innovative approaches that you may have.

I started my talk today by referring to Albert Einstein and his perceptive observation on the how it can sometimes be more important to ask the “*right questions*” rather than focusing on identifying the “*wrong answers*.” Throughout my presentation, I posed a number of questions to help us in our thinking process about the best way that we can work together in developing a novel long-term partnership among EERE, the land-grant universities and others to assist in accelerating both the development and dissemination of energy efficiency and renewable energy technologies.

We have already begun this process. Your elected officials in NASULGC and I have met and begun to start thinking about ways we can work together. At the request of Mort Neufville, I also recently submitted an article to your newsletter presenting some of the ideas that I have discussed today, and I invite you to look that over.

However, the “thinking” can’t only be done by me and your elected officials. We need each of you to think with us if we are to have a prosperous and productive partnership.

I like it when people think together. This has been a part of my culture since I was a kid on the family farm back in Missouri. It is a part of who I am because my Dad made it a part of me.

Dad always engaged us kids in the challenges of managing a family farm. I can remember the walk from the lunch table to the farmstead lot, where the equipment was lined up for the afternoon work. As we walked Dad would ask each son if they had prepared their task for the afternoon work – baler greased, tractors gassed, etc? If there was a “no” answer to one of his questions he would stop, turn around and address the four sons with, ***“Boys, if this farm is to be what can be, you will have to do some of the thinking around here. I can’t do all the thinking.”***

Neither I nor your elected officials can do ALL the thinking if we desire to have a great partnership.

In conclusion, I need your help and participation as we embark upon this shared path in the future. A partnership that I envision between our two organizations, and indeed with the LGU community, will take time in terms of working out a long-term partnership. Such a partnership will take time to develop and mature because it has to be founded on mutually agreed, yet-to-be developed principles.

But all good things are worth the time invested into “growing” them. When I reflect on this enhanced partnership, I see a future where the capacities of universities and DOE can be matched in critical areas, which will provide this country a future where all citizens, including farmers and rural Americans, can be assured the energy they need is clean, affordable, and bountiful. This future will not build itself. We must work together to enhance our partnership that can build this future.

From "Ronald Brown" <brown@ext.msstate.edu> on Wed, 29 Sep 2004 14:31:22 -0500 -----

To: ellen.lutz@ee.doe.gov, jeff.baker@go.doe.gov

Subject: Deployment Follow-up

Ellen and Jeff,

I had a good meeting recently with southern region DOE personnel working on Energy Star programs, which reminded me of the meeting with you regarding deployment and the potential for DOE/EERE – Extension partnering activities.

I would like to convey three key points to you for you to think about during your deployment task force deliberations:

1.) Research shows that people move through five stages in deciding to adopt a new technology. The first two – awareness and interest – are addressed in a marketing approach with a little information provided to a lot of people. DOE does this well and about 15-20% of customers who are in the innovator and early adopter categories do adopt. However, the remaining 80-85% of customers (most of the early majority, the late majority, etc) require sustained educational interventions to move on through the stages of trial, evaluation and adoption. This intervention must be more personal, more hands-on, and more sustained. This is what Extension has the infrastructure to do with local educators in every county in the US and subject matter specialists at the state level to backstop them.

2) Extension has developed and funded a system that layers its locally-based educator infrastructure with an electronic support system, e-Extension. This electronic educational program differs from just having good web pages in that it is a comprehensive system that is totally oriented from the user. Most of what Extension (and DOE) now has on the web is actually designed from the perspective of the provider of information rather than the seeker of information. Some of the other characteristics/principles of this system include: information is aggregated rather than duplicated because users want “an” answer, not a multitude of answers; information will be available in multiple formats from FAQ and Ask the Experts to interactive modules; information will be customizable to zip code to account for climatic or other variables; it will be offered in different languages; and it will be made available in handicap accessible formats. Of course, a key strength is that it will, again, be tied to a local resource in each county – one that is known, believed to be objective and credible. We think that this system can make Extension an even better potential partner.

3) Extension is changing its program scope and direction. Extension originated as a part of the Land-grant educational system with leadership from USDA, which provided funding with smaller amounts of funding coming from state and local governments – thus the term Cooperative Extension. Today, the USDA share of the state Extension budget in most states is the smallest of the three. Today, Extension programs are largely defined and determined by local and state input from customers. As a result, most universities have or are thinking about elevating the administrator of the state Extension Service to a higher level university administrative position, such as Vice President/Chancellor for Extension. This move provides Extension access to every college and discipline at the university and makes Extension a worthy potential partner for all DOE deployment activities.

As I indicated when we met, if I can be helpful in any way as you build your deployment strategy, please let me know. I enjoyed meeting you and appreciate the opportunity you provided to interact.

Ronald A. Brown, Executive Director
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PARTNERING WITH EXTENSION: THE WHOLE BECOMES GREATER THAN THE SUM OF ITS PARTS

Marilyn J. Bruin, Ph.D.
Associate Professor and Housing Specialist
University of Minnesota Extension Service

“CSREES’ (Cooperative State Research, Education, and Extension Service) unique mission is to advance knowledge for agriculture, the environment, human health and well-being, and communities by supporting research, education, extension programs in the Land-Grant University System and other partner organizations.”
(<http://www.csrees.usda.gov/about/background.html>).

As an organization that supports research and outreach endeavors ranging from agriculture, food biosecurity, economics and commerce, families, youth, and communities, natural resources and environment, pest management, horticulture, and technology and engineering, the Cooperative Extension Service is unique. With a presence in every county, Extension provides information and programming in areas related to the security and well being for residents in rural, suburban, and urban America. In other words, few agencies — governmental, nonprofit, or faith-based — are as inclusive and far-reaching as Extension. And, because Extension Service programs are inclusive, supported by the public, and based on research, they maintain a credibility that is valued by the public.

Land-Grant universities and colleges are the homes of Extension services. Faculty members with extension appointments collaborate with each other and with resident researchers to develop research questions that address gaps in the knowledge base. University faculty with extension appointments review research findings and develop educational outreach materials and programs for the community. Extension faculty with combined expertise in research, subject matter, and pedagogy add value to research findings by developing and delivering critical, research-based information that is relevant to the public. Community partnerships improve the quality of university research; new knowledge is not fully disseminated to those who can apply it in the community without the extension delivery system.

Reciprocity between Land-Grant Universities and the Community

Extension services provide a primary link between communities and University resources, including new knowledge. Faculty with Extension service appointments have unique opportunities to integrate teaching and research that is engaged with citizens, government, non-profit organizations, and businesses. Community-based teaching and engagement with community stakeholders keep faculty informed of the need for applied discovery and to collaborate on research that will generate findings to inform the development of effective policies and solutions to a broad range of issues. Community partners continually influence the research process through their collaboration in generating relevant research questions, providing critical insights into the interpretation of findings and identifying implications for applications in practice.

New Partnering Opportunity

The collaboration between NASULGC, the Department of Energy, and CSREES is an excellent example of a community partnership that benefits each partner as well as disseminating information to businesses and consumers. NASULGC and CSREES have charged Extension faculty to review the research findings from the Department of Energy's Building America program. The purpose of Extension's involvement is to design and deliver relevant outreach programs to the home construction industry and homebuyers. Extension faculty are developing activities and presentations to effectively explain the risk assessment protocol developed in the Building America program. The risk assessment protocol is a tool that documents procedures and components of the construction process to reduce liability and produce a high quality product. To ensure utilization of the protocol architects and construction managers need to understand its purpose and how to incorporate the protocol into their business practices. Consumers need to understand that the protocol documents residential construction. Through Extension's national delivery system architects and construction managers will learn to apply the protocol and consumers will learn use to better understand building science and to recognize the protocol as an indicator of quality home construction. Furthermore, feedback from architects, construction managers, and consumers can be gathered by Extension faculty and shared with partners to continue the research in building science informs the risk assessment protocol.

Considering the broad range of expertise within Extension, a variety of projects do or can benefit from the Extension partnership model to deliver critical, research-based information to the public.

PARTNERING WITH EXTENSION: HIGH-PERFORMANCE HOUSING

Joseph Laquatra, Ph.D.
Professor, Department of Design and Environmental Analysis
Cornell University

Building America is a housing industry-led, cost-shared partnership program of the U.S. Department of Energy that has the following goals:

- Reduce whole-house energy use by 40-70% and reduce construction time and waste;
- Improve indoor air quality and comfort;
- Integrate clean onsite power systems;
- Encourage a systems engineering approach for design and construction of new homes;
- Accelerate the development and adoption of high-performance residential energy systems.

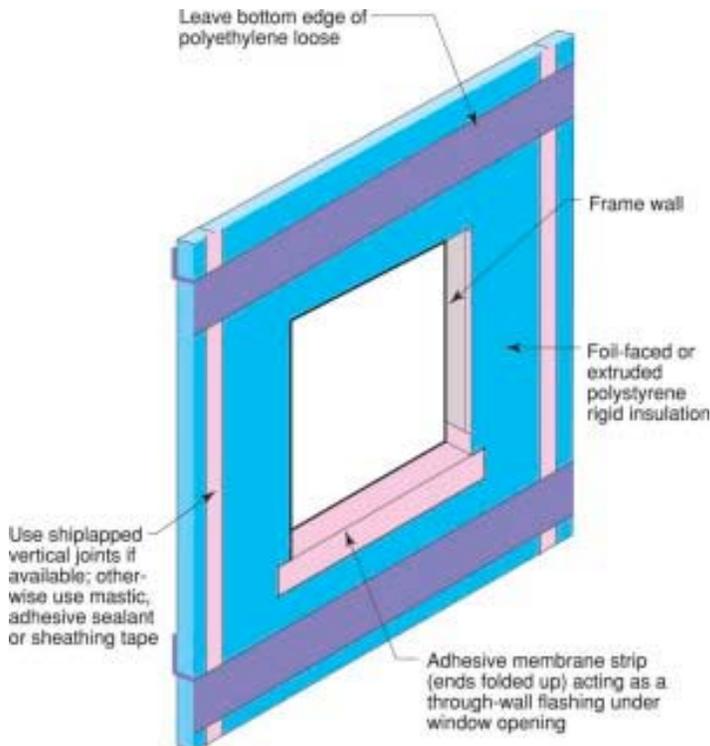
The Building America Building Science Consortium (BSC) has developed a Web-based, climate-specific technical resource for designing and building high-performance homes that use at least 30% less energy for space conditioning and hot water than homes built for compliance with the 1995 Model Energy Code. This resource is entitled *Houses That Work II (HTWII)* and is based on insights and experience gained from five years of building over 8,000 production homes across the country. It is available at www.buildingscience.com/housesthatwork. HTWII is an updated version of *Houses That Work*, which was published in 2001. HTWII includes a hygro-thermal regions map of new energy climate zones that are proposed for the International Energy Conservation Code; climate-specific best practices for high-performance homes; three building profiles per climate; and a Building Materials Property Table. HTWII also features numerous electronic references for readers who want additional information on building science, a field that has grown exponentially thanks in part to the Building America program.

The entire state of New York is within the Cold Climate Hygro-Thermal Region. Building profiles for houses with three foundation types are featured for this region: full basement, crawl space, and slab-on-grade. These profiles recognize that homes in cold climates face significant moisture drive from the building interior and into the building envelope during the heating season, as well as ground water and moisture issues common in homes with full basements or crawl spaces. Best practices for these homes result in energy performance for space conditioning and hot water that is 40% better than the 1995 Model Energy Code, which is 10% better than ENERGY STAR[®] performance requirements. Also addressed in the best practices are system engineering details that utilize advanced framing methods, efficient duct distribution, and design details that address durability with regard to wall and roof assembly drying potential, a continuous drainage plane, and a continuous thermal barrier.

HTWII is a valuable resource for builders interested in increasing their profit margins through high-performance house construction. Construction details are clear, and practical guidance is offered that addresses common difficulties builders face in today's market. For example, the five-page Building Materials Property Table covers vapor permeability, flammability, and other relevant issues of sheathings, claddings, interior wallboards, insulation, flooring, building papers, and coatings. A Web link is provided to help with resistance to advanced framing methods from local code officials. And highly understandable discussions are provided about the importance of continuous drainage planes, air barriers, and thermal barriers.

The authors of HTWII recognize that this resource cannot be considered as anything but guidance. It is not intended to replace professional engineering, expert design, good judgment, or common sense. But it is a valuable addition to the growing number of resources in the area of building science. Companion publications will also help builders advance their understanding of constructing high-performance houses that are energy efficient, affordable and comfortable for buyers, free of moisture-related problems, and unattractive to pests. The Energy & Environmental Building Association's (EEBA) *Builder's Guide for Cold Climates* and the EEBA *Water Management Guide* are chief among these.

Builder's Guide for Cold Climates is a concise, highly-detailed book. It contains over 150 illustrations that include details for houses that are efficient in their use of energy and resources, are durable, and are comfortable. It is distributed by the Energy and Environmental Building Association (EEBA) and is \$35 for EEBA members; \$45 for non-members. It can be ordered on-line at: https://www.eeba.org/mall/builder_guides.asp.



Design detail from *Houses That Work II*.

The EEBA *Water Management Guide* is a 51-page excellently illustrated booklet that provides details to ensure that walls, roofs, and foundations are built so that they shed water to the exterior through continuous drainage planes. The control of rain and ground water is a key factor in keeping houses durable and mold-free. The step-by-step illustrations in this booklet make it easy to understand how to achieve this. Contact the EEBA Book Store Web site for availability information.

PARTNERING WITH EXTENSION:
DEMONSTRATION HOUSE

Dr. Claudette Reichel
LaHouse Project Chair
Louisiana State University

Building on its past housing, energy and consumer education programs, the LSU AgCenter's Louisiana Extension Service is leading a partnership project to create and operate **Louisiana House – Home and Landscape Resource Center** (LaHouse). It will be a permanent, yet evolving, **showcase and hub of regional Extension educational outreach**.

LaHouse seeks to **stimulate adoption** of cost-effective solutions that address multiple national and local challenges, including **residential energy conservation**. It will encourage and teach housing consumers, builders and designers to take personal responsibility for preserving natural resources and protecting our environment. Most home construction and improvements in Louisiana and the southern region lack sustainability features.

LaHouse has secured and continues to seek multi-faceted partnership support and opportunities to capitalize upon the Louisiana House showcase and initiative with its broad appeal and outreach capacity **to generate audiences for residential energy education** and to produce visual media of installation steps of a wide range of residential resource-efficient solutions suitable to regional conditions. Result demonstration coupled with ongoing educational outreach, materials and media has long been utilized by Extension as the most effective educational method to overcome barriers to change and speed the voluntary adoption process. *A Building Your Louisiana House: Homeowners' Guide* manual

LaHouse will appeal to a broad audience since it will combine housing and landscape environmental stewardship and resource conservation with hazard-resistance and health issues to mutually benefit households, industries and communities – now and in the future. As an ongoing, state-level Extension education program, LaHouse is expected to have a high visitation rate, media coverage and impact. As an LSU AgCenter project involving university faculty and nationally recognized scientists of Building Science Consortia and Dept. of Energy Building America program, LaHouse will uphold the highest standards of credibility.

The master site plan includes an educational showcase house with a distance education classroom, space for changing exhibits and acres of environmental landscape exhibits with trails – all with explanatory signage. Each will display a variety of advantageous products, systems and technologies to achieve and integrate the five LaHouse criteria – **resource-efficient, durable, healthy, practical and convenient**.

The 7-acre site has been provided by LSU. The facilities are funded by private gifts and in-kind donations. Construction is now underway and LaHouse will be operated by the LSU AgCenter's Extension Service.

For More Information: Visit the www.LouisianaHouse.org Web site to learn more about the project plans and history. For questions about the initiative or house, contact Dr. Claudette Reichel, LaHouse Project Chair (225-578-4440 or lahouse@agcenter.lsu.edu).

EERE-NASULGC Partnership Executive Steering Committee Meeting

1307 New York Avenue, Suite 400
Washington, DC
January 25, 2005
10:00am – 12:00pm

Time	Agenda Item	Lead
10:00	I. Welcome <ul style="list-style-type: none"> a. Introductions b. Additions/Corrections to Meeting Agenda 	Neufville/Faulkner
10:15	II. FY04 Partnership Activities <ul style="list-style-type: none"> a. Final Project Reports b. Additional Partnership Accomplishments <ul style="list-style-type: none"> • See Meeting notebook for full report 	Johnson/Fischer Leadership Team Members
10:35	III. 3-Year Partnership Plan <ul style="list-style-type: none"> a. Presentation and Discussion of 3-year Partnership Proposed Plan b. Discussion 	Johnson/Fischer Neufville/Faulkner
11:05	IV. FY05 Partnership Activities <ul style="list-style-type: none"> a. Partnership Proposed Workplan b. Timeline for Partnership Activities c. Discussion d. Identification of Leadership Team Members 	Johnson/Fischer Mills Neufville/Faulkner Neufville/Faulkner
11:45	V. Next Steps <ul style="list-style-type: none"> a. NASULGC/Program Managers Meeting b. Mr. Garman participation in NASULGC Annual Meeting c. Next Steering Committee Meeting <ul style="list-style-type: none"> • Proposed Date: July 14, 2005 @ DOE 	Moorer/Johnson Neufville Mills

Minutes

EERE-NASULGC Partnership Executive Steering Committee Meeting

1307 New York Avenue, Suite 400
Washington, DC
January 25, 2005
10:00am – 12:00pm

- I. The meeting was opened with introductions by the participants:
 - a. NASULGC: Mort Neufville, Stan Johnson, Rhonda Christianson, Tom Fretz, Eddie Gouge, Mike Harrington, Ian Maw, Jill Long Thompson, Dick Wotton;
 - b. DOE: Doug Faulkner, James Fischer, Tobin Harvey, Richard Moorer, Michael Mills and David Rodgers.

- II. FY04 Partnership Activities
 - a. Stan Johnson and Jim Fischer lead a discussion of the FY04 partnership accomplishments.
 - b. ACTION: Mort Neufville and Doug Faulkner will send a formal letter to the project leadership teams to recognize their work on the pilot projects in FY04.
 - c. The participants discussed the need for increased communication with regional and state groups associated with DOE and NASULGC.
 - i. The meeting participants agreed to target state energy offices and regional organizations on an individual basis because of the wide range of activity level throughout the country.
 - d. ACTION: The websites for the partnership and the DOE advisory boards will be hot linked to each other.

- III. 3-Year Partnership Plan
 - a. Jim Fischer and Stan Johnson provided an overview of the draft 3-Year Partnership Plan
 - b. Doug Faulkner emphasized one important aspect of the partnership is to open all of the DOE to the NASULGC organization.
 - c. Richard Moorer emphasized the need to articulate the partnership activities, goals and outcomes to the EERE Program Managers to ensure they fully understand the partnership.
 - d. The participants agreed to move forward with the principles expressed in the 3-Year Plan.

- IV. FY05 Partnership Activities
 - a. Stan Johnson and Jim Fischer provided an overview of the draft FY05 partnership projects.

DRAFT

- b. The participants decided to target those regions that can add value to the partnership activities.
 - i. ACTION: A meeting will be convened to discuss a strategic approach for state energy offices in the partnership. Participants will include: Tobin Harvey, Jim Fischer, and Jeff Giglio.
 - c. The participants agreed on the need to leverage DOE project funds strategically in order to expand project funding by other interested entities.
 - i. Stan Johnson informed the participants that in Iowa the 4-H, ASERTTI, and some public utilities have expressed an interest in the partnership activities and could potentially provide funding.
 - d. The participants agreed to follow-up the workshops conducted under the partnership with “listening sessions” that bring together a broad group of scientists from universities to review different approaches to EERE technologies.
 - i. Doug Faulkner suggested coordination with the DOE Advisory Committees.
 - e. ACTION: DOE and NASULGC will identify the participants for the leadership teams of the five FY05 projects.
 - f. ACTION: DOE will develop a means for EERE program manager involvement with partnership projects.
 - g. ACTION: A goal statement will be developed for each project and included in the project summary.
- V. Next Steps
- a. The participants agreed to a strategic approach to NASULGC meeting and conference participation by DOE that will help increase partnership awareness and interest within NASULGC.
 - i. ACTION: NASULGC will provide DOE with a list of upcoming NASULGC events and DOE will identify potential speakers.
 - b. ACTION: A letter will be developed for David Garman and Peter McGrath to inform them of the progress and status of the partnership.
 - c. The next Steering Committee meeting will occur in the first half on June 2005.

To: NASULGC Research Vice Presidents, Deans, and Directors
Subject: Opportunity for your faculty to serve on DOE Boards and Review Panels

This is an opportunity for your faculty to become involved with the Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE). EERE Program Managers are interested in learning of your faculty with expertise as identified below who would be interested in serving on DOE/EERE Panels for:

- ✓ Peer Review, to advise on the ongoing performance of R&D and other program and project activities.
- ✓ Merit Review, to advise on the selection of new technology development contracts
- ✓ Stage Gate Review, to advise on the continuation, graduation, or termination of particular technology R&D efforts.

For faculty interested in serving on such Panels, we ask that you have them submit their resume to an established, secure, searchable resume repository managed by the EERE Information Technology Team. EERE Program Managers will search this database for potential faculty to appoint to Panels. Faculty who are selected will be contacted directly, using the contact information on their resume. EERE programs involve research, development, demonstration, and deployment activities. Therefore, Program Managers are interested in faculty with research, Extension/Outreach, and teaching experience. Serving on these Panels will also help your faculty become knowledgeable of U.S. programs in energy efficiency and renewable energy.

Faculty members can submit their resumes by sending an email with resume attached to the address below. In the subject line of the email we are asking the faculty to identify the program(s) they are most interested in serving on a panel or board by listing the name of the program or programs in the subject line of their return email.

To: Resumes@ee.doe.gov
Subject: "Name of Program(s)"

Faculty members will receive a return email indicating that their resume has been received and is being considered.

If you have any questions contact:

Jim Fischer ---phone - 202-586-1394 -----email - James.fischer@ee.doe.gov

Thank You.

DEPARTMENT OF ENERGY'S ENERGY EFFICIENCY AND RENEWABLE ENERGY PROGRAMS

- **Biomass Technologies:** This program develops technologies for the conversion of biomass (plant-derived material) to valuable fuels, chemicals, materials, and power, so as to reduce dependence on foreign oil and foster growth of biorefineries. <http://www.eere.energy.gov/biomass/>
- **Building Technologies:** The Building Technology Program works to improve the energy efficiency of our nation's buildings through innovative new technologies and better building practices. Research activities advance the next generation of energy-efficient components, equipment, and materials, plus a whole-building approach that optimizes building performance and savings. <http://www.eere.energy.gov/buildings/>
- **Distributed Energy Technology:** The Distributed Energy Technologies program supports research and development on a variety of small, modular energy generation devices including reciprocating engines, industrial turbines, microturbines, and thermally activated equipment. <http://www.eere.energy.gov/de/>
- **Federal Energy Management:** This Program promotes energy efficiency and the use of renewable energy resources at federal sites, and thus helps agencies save energy, save taxpayer dollars, and demonstrate leadership with responsible, cleaner energy choices. <http://www.eere.energy.gov/femp/>
- **FreedomCAR and Vehicle Technologies (FCVT):** This program is developing "leap frog" technologies that will provide Americans with greater freedom of mobility and energy security, while lowering costs and reducing impacts on the environment. <http://www.eere.energy.gov/vehiclesandfuels/>
- **Geothermal Technologies:** This Program works in partnership with U.S. industry to develop advanced geothermal energy technologies and to establish geothermal energy as an economically competitive contributor to the U.S. energy supply. <http://www.eere.energy.gov/geothermal/>
- **Hydrogen, Fuel Cells and Infrastructure Technologies:** Hydrogen and fuel cells have the potential to solve several major challenges facing America today: dependence on petroleum imports, poor air quality, and greenhouse gas emissions. This Program is working with partners to accelerate the development and successful market introduction of these technologies. <http://www.eere.energy.gov/hydrogenandfuelcells/>
- **Industrial Technologies:** This program partners with U.S. industry to improve industrial energy efficiency and environmental performance. The

program's primary role is to invest in high-value research and development that will reduce industrial energy requirements while stimulating economic productivity and growth. <http://www.eere.energy.gov/industry/>

- **Solar Technologies:** This program focuses on developing solar energy technologies to power our world. Solar energy science and technology can deliver new energy resources that are clean, reliable, and secure. Solar energy is clean, abundant, widespread, and renewable. Various technologies capture this solar energy, concentrate it, store it, and convert it into other useful forms of energy. <http://www.eere.energy.gov/solar/>
- **Weatherization and Intergovernmental Program:** This program works with communities, businesses, manufacturers, and consumers to facilitate the adoption of energy-efficient technologies and policies. It offers a wide range of tools, information resources, and hands-on technical assistance in addition to a nationwide network of community and industry partners. Working through regional and state energy offices to deliver programs and services, the Weatherization and Intergovernmental Program has partnered with state and local energy organizations such as the National Association of State Energy Officials (NASEO), the National Conference of State Legislatures, the National Association of Counties (NACo), the Council of Mayors, and others. <http://www.eere.energy.gov/wip/>
- **Wind Technologies:** This program manages efforts to improve wind energy technology so that it can generate competitive electricity in areas with lower wind resources. Through program-sponsored research and development activities, this Program enables greater use of abundant domestic wind energy resources for electric power generation, helping stabilize energy costs, enhancing energy security, and improving our environment. Competitively selected, cost-shared research and development projects performed in partnership with federal, state, industry, and other stakeholder groups, are the primary mechanisms for program execution. <http://www.eere.energy.gov/windandhydro/>