



## **Improving Research And Extension**

### ***Better Research, More Competitive Agriculture***

By redesigning the 150-year old USDA–university partnership and re-investing in agricultural research, we can help farms produce the renewable raw materials, energy sources, environmental goods and services and nutritional foods that will both enhance our competitiveness in global markets and create new domestic markets. The Creating Research, Extension and Teaching Excellence for the 21<sup>st</sup> Century (CREATE-21) task force has proposed a significant reorganization that is supported by the majority of our state universities and land grant colleges and:

- Truly integrates the research, teaching, and outreach conducted by universities and the U.S. Department of Agriculture;
- Is more responsive, accountable and focus on solving problems;
- Gives stakeholders a louder voice in setting national, regional and local priorities;
- Makes sure research is delivered into the hands of farmers;
- Helps educate and train the next generation of researchers and farmers;

### ***How it Works:***

The CREATE-21 proposal redesigns our current system, doubles the funding for agricultural research over the next seven years and distributes 70 percent of that new funding competitively. At present, four separate agencies within the U.S. Department of Agriculture, working with land grant universities, produce our public sector agricultural research. These agencies are the Agricultural Research Service, the Cooperative State Research, Education and Extension Service, the Economic Research Service and the U.S. Forest Service’s Research and Development. About 90 percent of the \$2.676 billion in funding supports either intramural USDA research capacity or the research, teaching, extension and international programs run by USDA’s land grant and related university partners. The remaining 9 percent is distributed through competitive grants.

In the new system, most of the functions of ARS, CSREES, ERS and FS R& D would be combined into an independent research institute that oversees agricultural research and its delivery and reports to the Secretary of Agriculture. An eminent scientist, nominated by the President and confirmed by the Senate for a single 6-year term, will direct this new Institute. The Institute will be organized around six strategic priority areas: enhance economic opportunities for agriculture and natural resources; enhance the protection and safety of agriculture and the food supply; ensure family, youth and community services; improve nutrition and health; protect and enhance the natural resource base and environment; and support rural and urban community development. However, either the Director or Congress can adjust these priorities to meet future needs. The Director can also add or amend strategic priorities and develop area of focus (e.g. obesity; bioenergy;

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food safety; bird flu; etc.). A National Stakeholder Board will provide oversight and direction for the Director and help process information from stakeholders at the local, state and tribal levels. Deputy Directors for each area of focus will coordinate integrated funding portfolios with robust intramural and extramural research, extension, education and international programs and a variety of peer-reviewed competitive grants programs.

Over seven years, funds invested in research would double to \$5,352 billion and the ratio of capacity to competitive funding would evolve from a 90/10 split to a more equitable 42/58 percent split. At least 45 percent of the competitive funds will go to programs that integrate research, education and outreach efforts. In addition, 20 percent of the new competitive funds are reserved for minority serving land-grant institutions (1890s, 1994s, Insulars) and small 1862 land-grant institutions currently receiving less than 1 percent of the annual CSREES budget. To “jumpstart” the funding enhancement program, \$200 million per year in mandatory USDA funding would flow immediately to the Institute from the statutory authority for the Initiative for Future Agricultural and Food Systems (IFAFS) program.

### ***Aggregate Impacts:***

- If CREATE-21 is enacted and fully funded, after seven years the competitive/capacity ratio would be 42/58. Currently, the competitive/capacity ratio is approximately 10/90).
- Over a seven-year period, CREATE-21 would lead to a doubling of funding invested in research (\$5.352 billion).
- At least 45 percent of the competitive funds would be directed to programs that integrate research, education and outreach efforts with the remaining 55 percent of the total invested in fundamental research.
- Full indirect cost recovery would be implemented as new funds become available, allowing universities to use some of these funds to maintain their infrastructure.
- Traditionally disadvantaged universities and colleges (the 1890s, 1994s, small 1862 land-grant universities and the American Association of State Colleges of Agriculture and Renewable Resources (AASCARR) institutions) would have access to a reserved pool of \$425 million/year to increase their research and related programs.

### ***Example:***

U.S. farmland and forestland could play a key role in helping the U.S. address global warming by 1) sequestering carbon and mitigating up to 20 percent of the global greenhouse gases currently released by our industrial activities and reliance on petroleum products; and 2) providing the biomass to replace up to 30 percent of the petroleum fuels we currently use by 2030. To achieve these goals, however, a significant portion of the research, extension and education community will need to be fully focused and working together to come up with the necessary research breakthroughs and work with all of agriculture to fully implement the solutions: increasing the yields of corn, wheat and

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other small grains by 50 percent; doubling residue-to-grain ratios for soybeans; developing much more efficient residue harvesting equipment; managing active cropland with no-till cultivation; growing perennial crops whose output is primarily dedicated to produce biofuels on 55 million acres of cropland, idle cropland and cropland pasture; improving environmental quality while making these shifts in production; and using excess animal manure and a larger fraction of other excess residues for additional bioenergy production.

With our current agricultural research system, such integration would be challenging to achieve and haphazard at best. With the new independent institute in place, we could rapidly enact the 2005 recommendation from the U.S. Department of Energy and the U.S. Department of Agriculture to replace 30 percent of our petroleum use with biofuels by 2030. Either Congress or the Institute Director could make one of the Institute's top priorities the goal of producing more than 1.3 billion dry tons from agricultural land and forest lands every year. The Institute would then award funding to the teams of researchers, educators and outreach specialists best suited to achieve the necessary breakthroughs and provide the coordination and integration necessary to make energy independence a reality.

### ***Benefits:***

The CREATE-21 proposal revamps the existing USDA-land grant partnership by incorporating the best features of the existing structures at USDA into a new independent agency. This approach:

- Features a funding approach that identifies problems and invests in the basic research, applied research, education and outreach needed to deliver solutions -- similar to the way the National Institutes of Health responds to major diseases.
- Ensures greater accountability by setting performance measures.
- Greatly boosts stakeholder involvement by encouraging active, broad-based stakeholder engagement.
- Responds to stakeholder priorities through flexible application of resources.
- Enhances the relevancy, adequacy, responsiveness, and sustainability of the USDA-land grant university partnership.
- Better integrates the partnership's programmatic activities.
- Improves the partnership's ability to attract appropriate resources to meet goals expressed by Congress and addressed by USDA.
- Recognizes and meets the special needs of traditionally disadvantaged colleges and universities.
- Addresses the perception that formula or capacity funds are long-term entitlements by using competitive grants as the preferred distribution method.
- Incorporates all of the key elements of the National Institute for Food and Agriculture (Danforth) proposal, including the creation of a National Institute providing \$1 billion per year in new funding for fundamental research in food, agriculture and natural resources through competitively-awarded peer-reviewed grants.