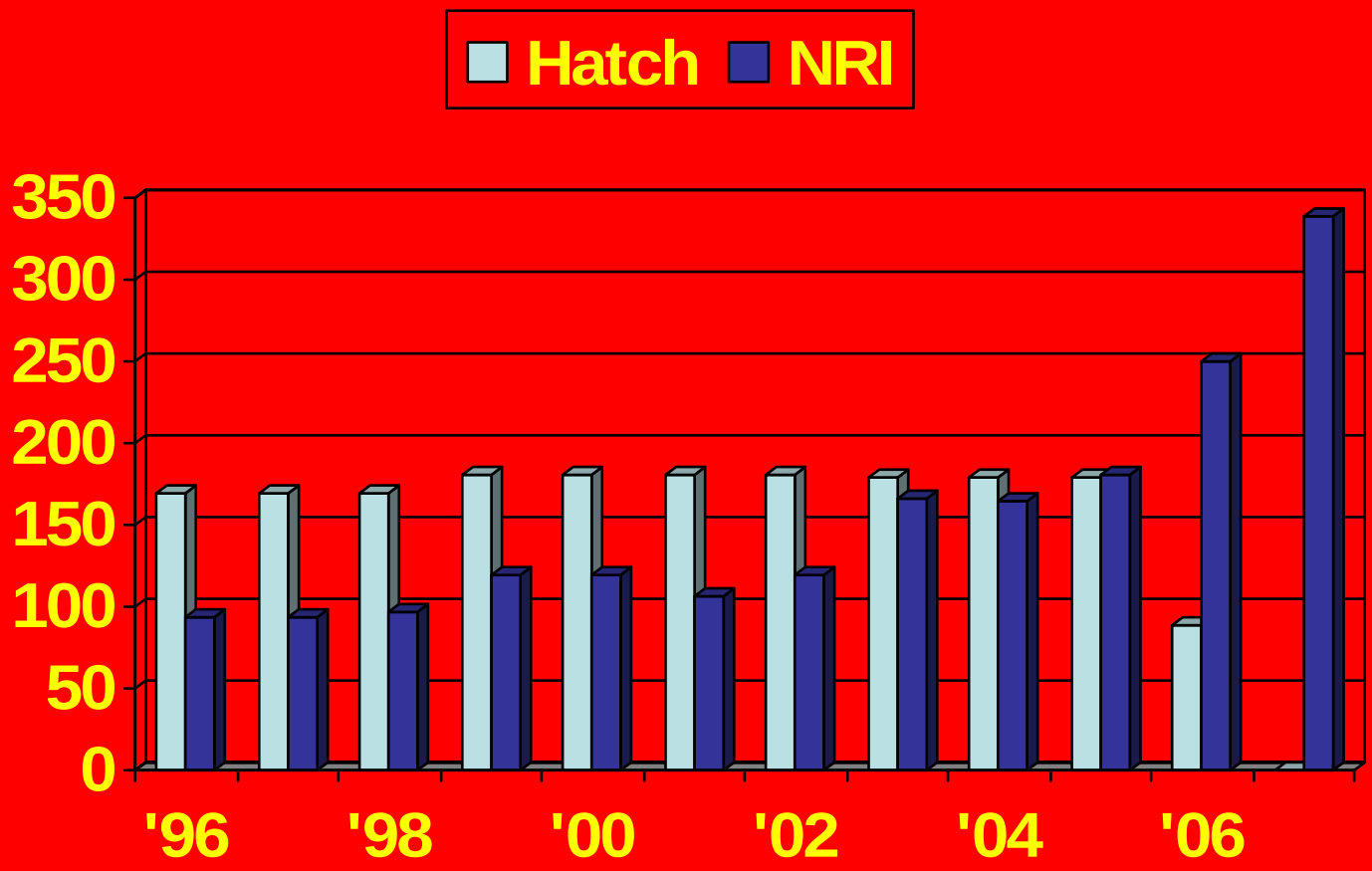
Current Trends in Federal Funding for Plant Sciences as they Relate to Plant Breeding

J.G. Coors
Department of Agronomy
UW - Madison

CSREES Fiscal History (Mil $)

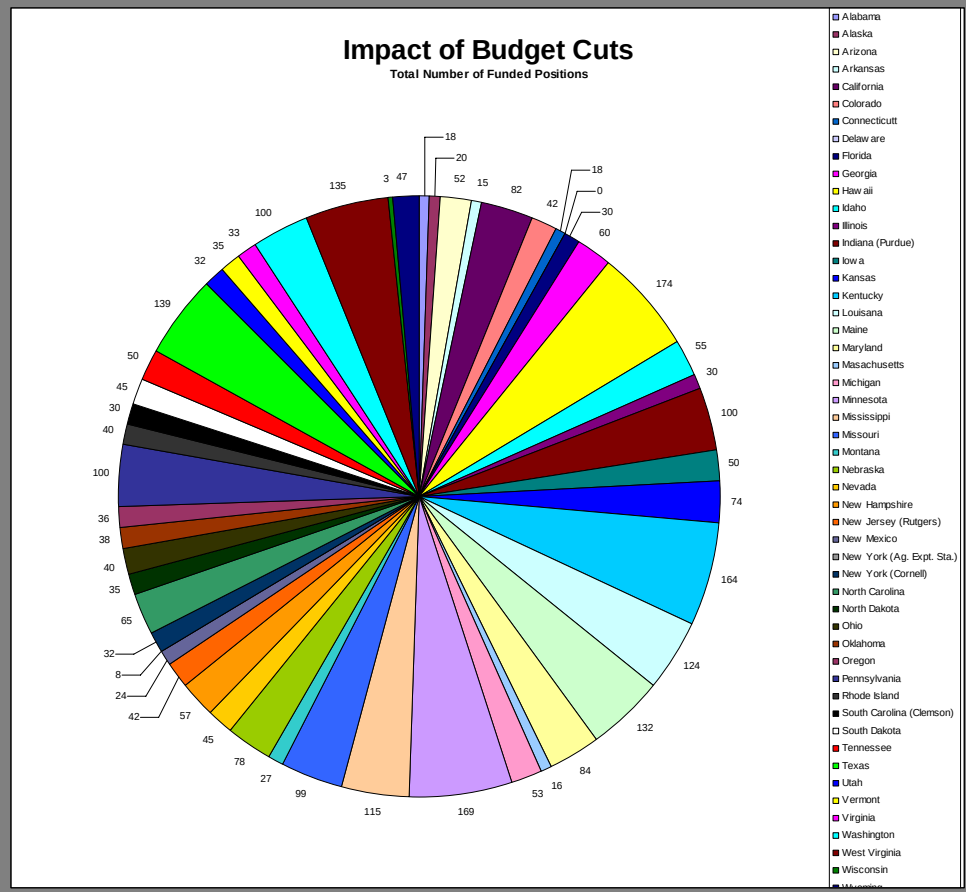


Source: Fribourgh

Positions Currently Funded from Hatch, McIntire-Stennis, and Animal Health & Disease

Faculty	Staff	Other *	Total *
1027	1233	732	3092

* Note: numbers under Other and Total may or may not count graduate students depending on the state.



From NASULGC (www.nasulgc-bac.com/budget_cuts.htm)

Federal Funding Patterns and Priorities in Agricultural Plant Science by CSREES

Phase II Project; ESCOP/ACOP Class 14

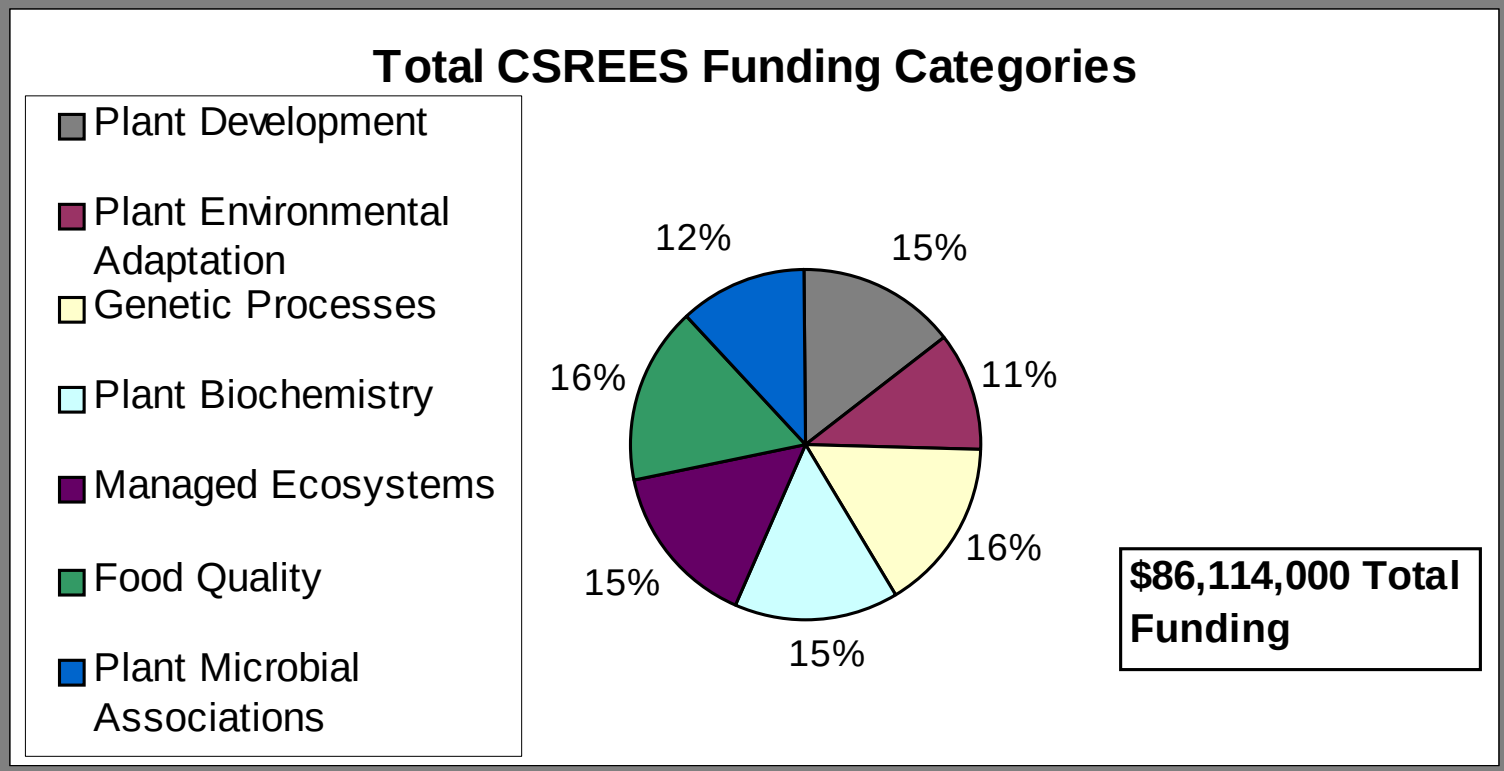
Bill Randle, University of Georgia, Athens

Objectives:

1. **Determine the success rate of ag. depts.**
2. **Determine the expertise need to compete effectively**
3. **Determine mechanism for setting priorities**

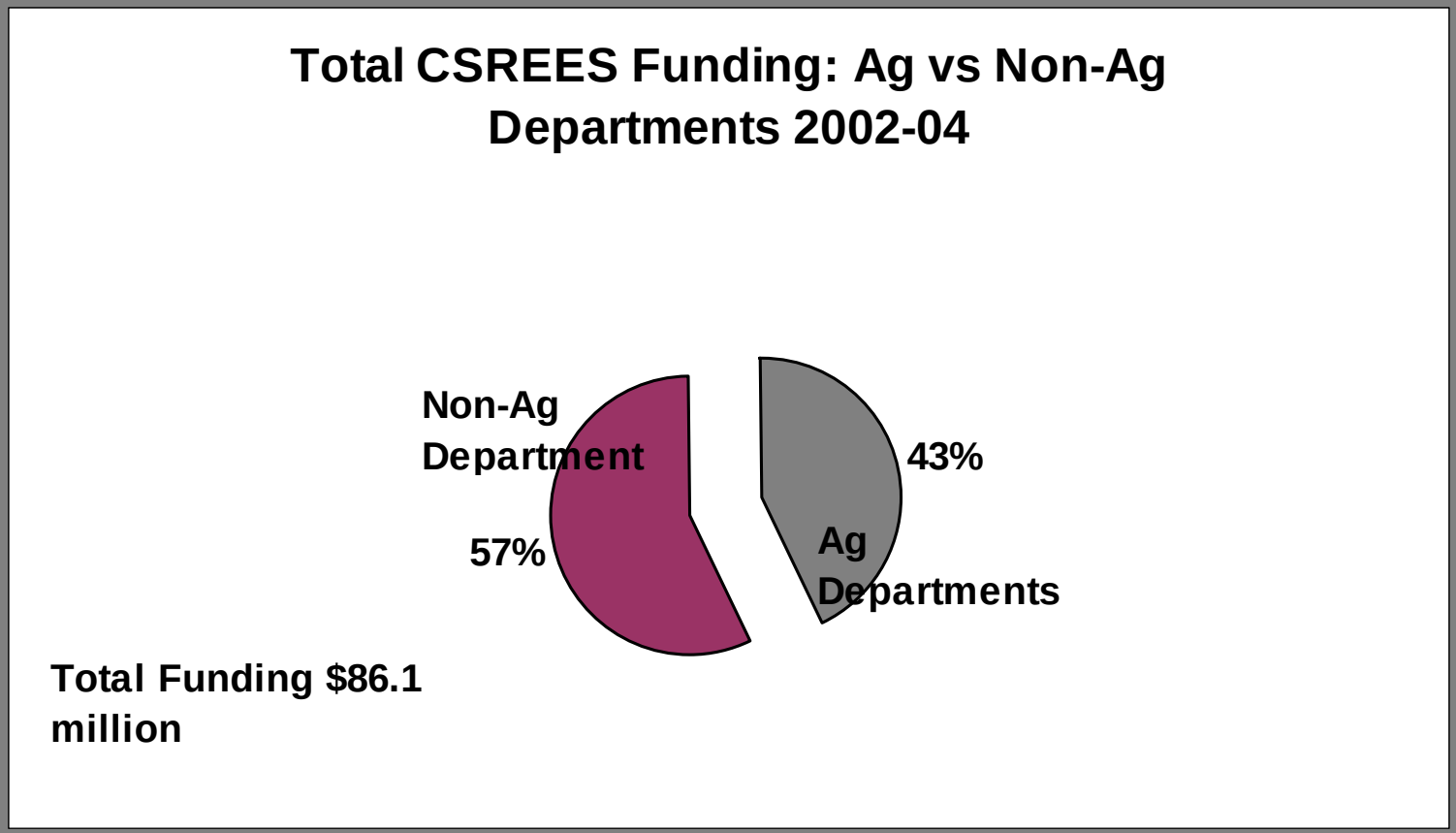
Source: Randle, 2005

Funding for Plant Science Research by CSREES for 2002-2004



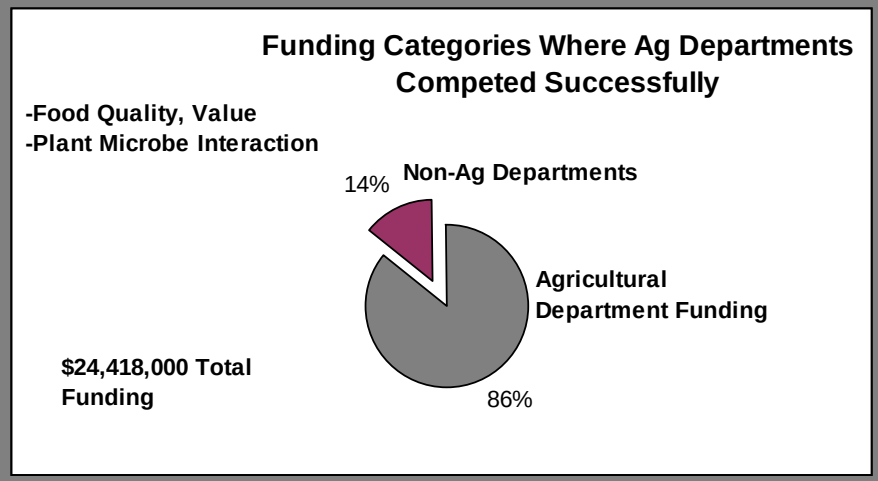
Source: Randle, 2005

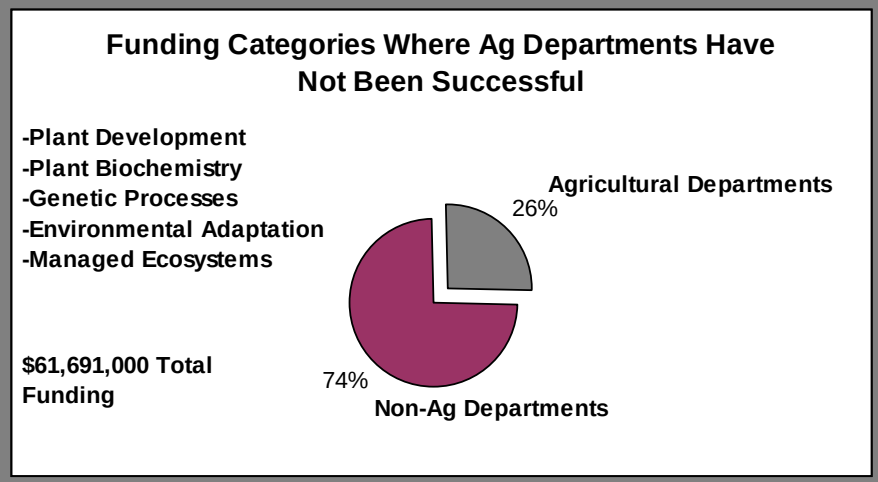
Distribution of 2002-04 CSREES funding: Ag versus non-Ag



Source: Randle, 2005

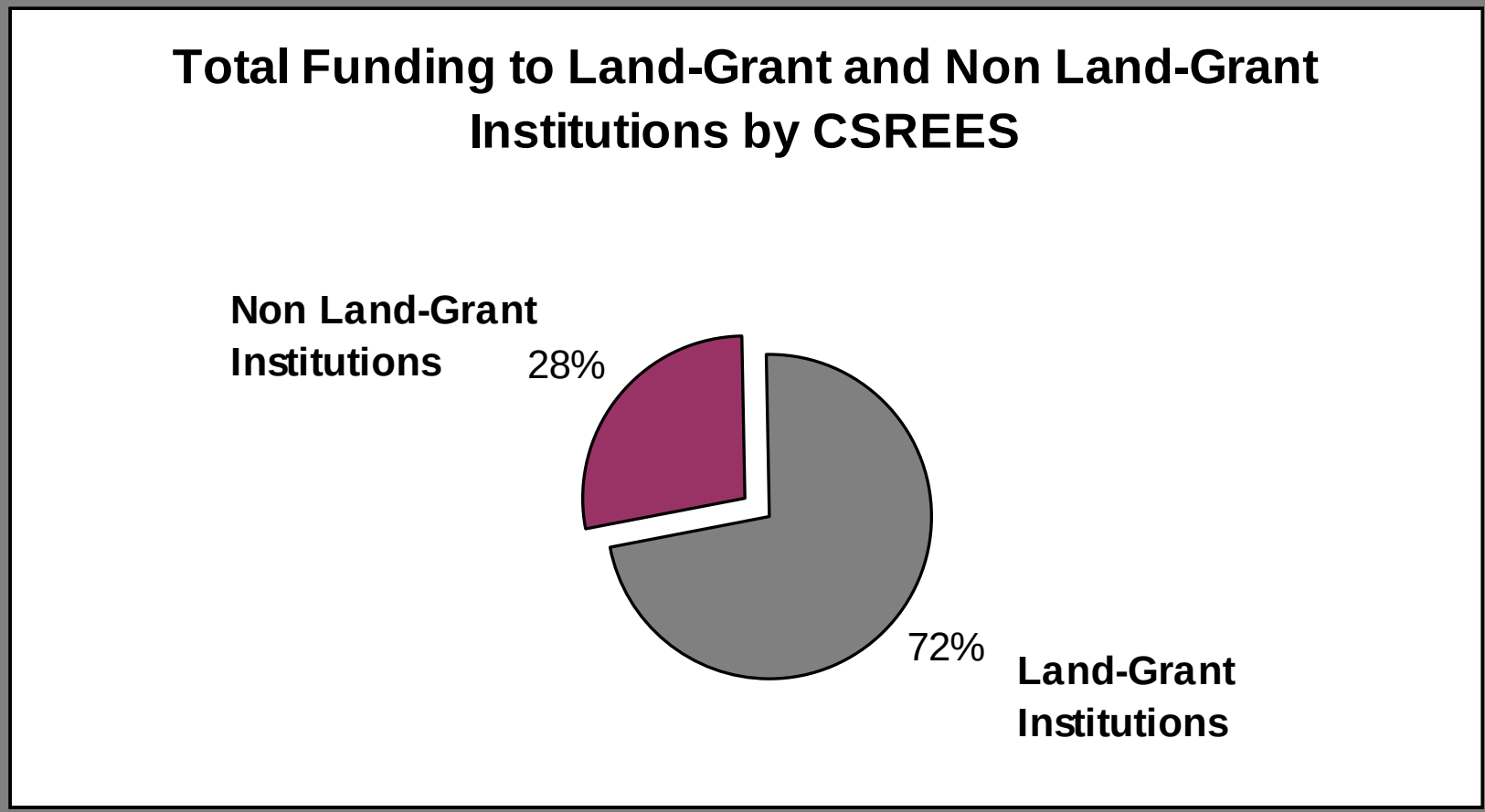
CSREES Funding Success by Category





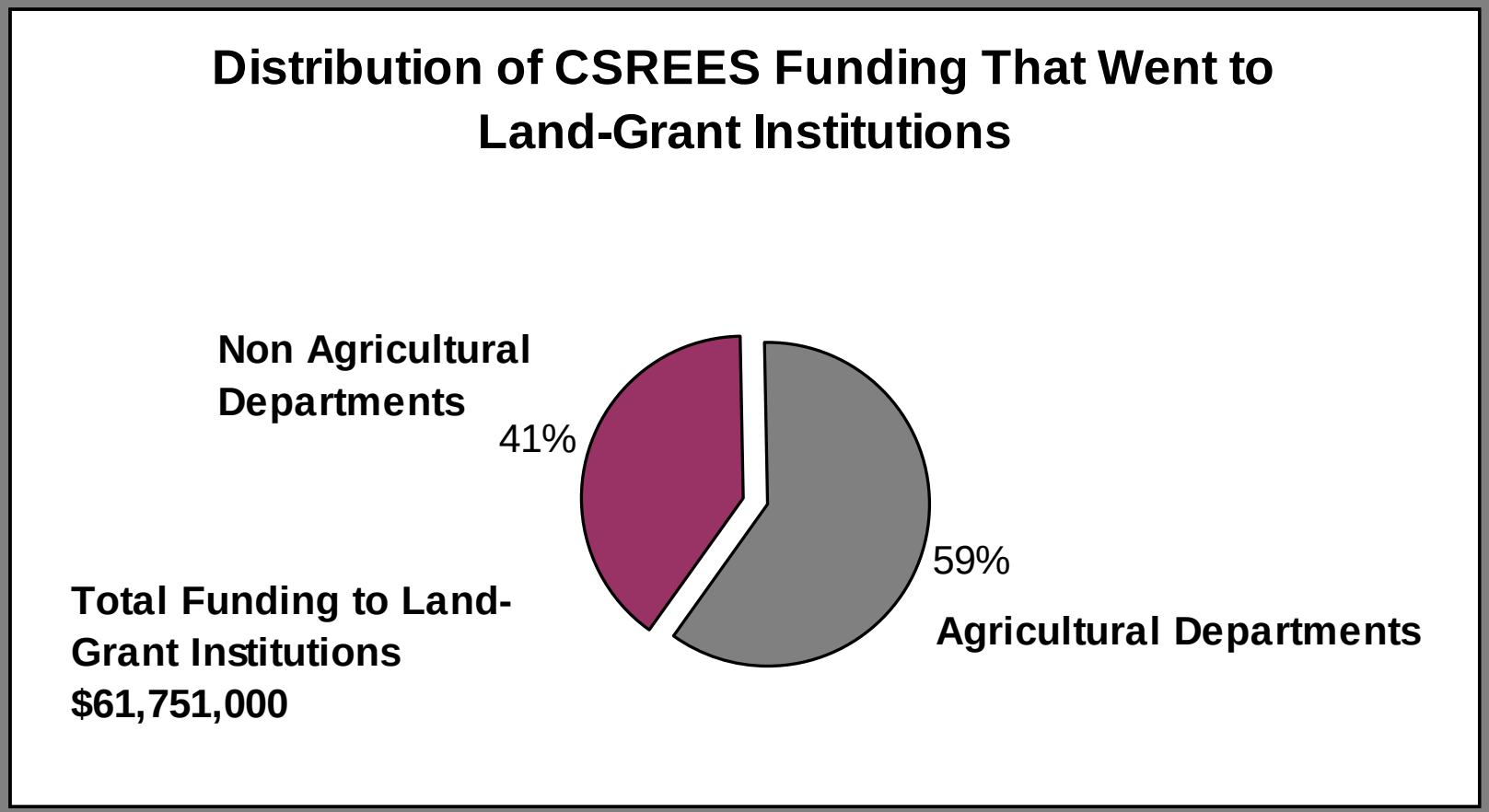
Source: Randle, 2005

Funding to Land-Grant Institutions Compared to Other Institutions by CSREES



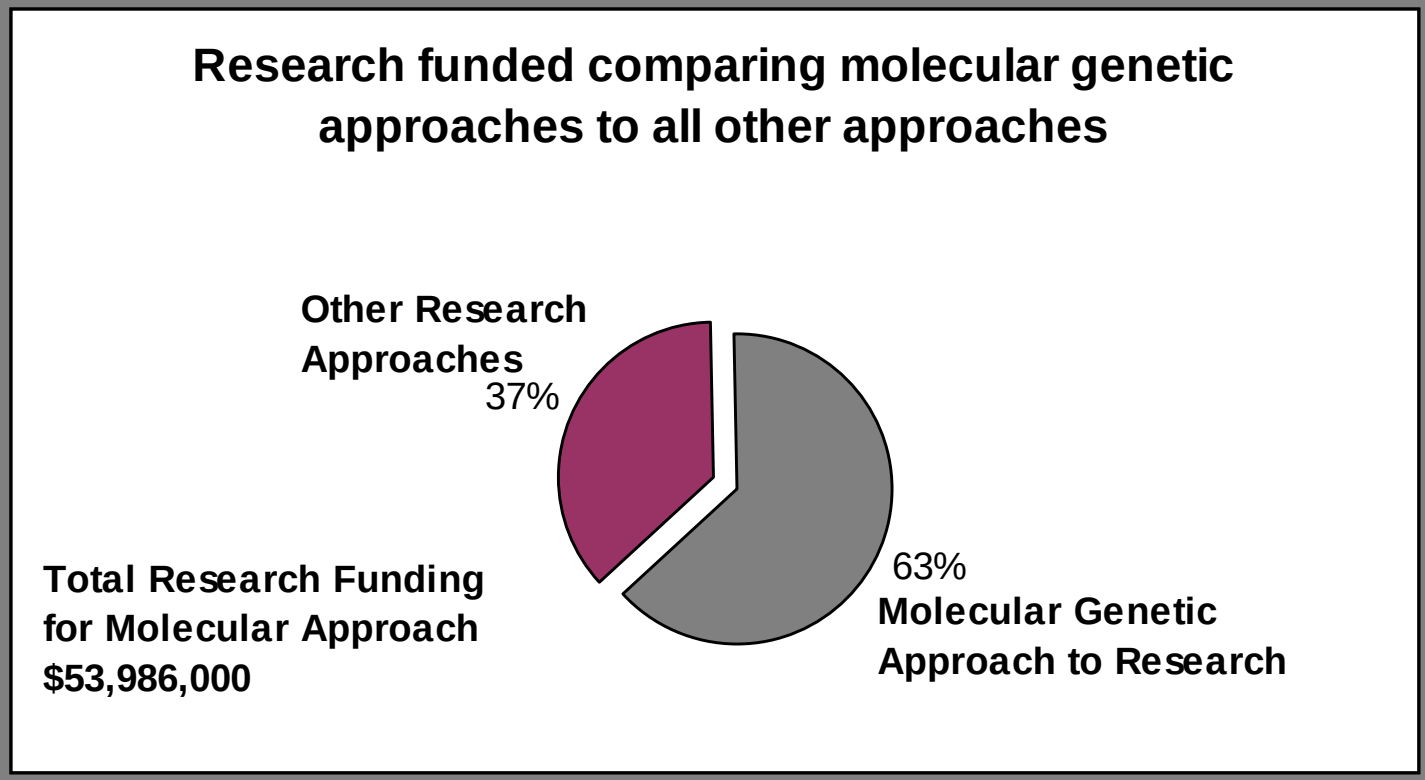
Source: Randle, 2005

CSREES Funding Distribution Within Land-Grant Institutions for Plant Science Research



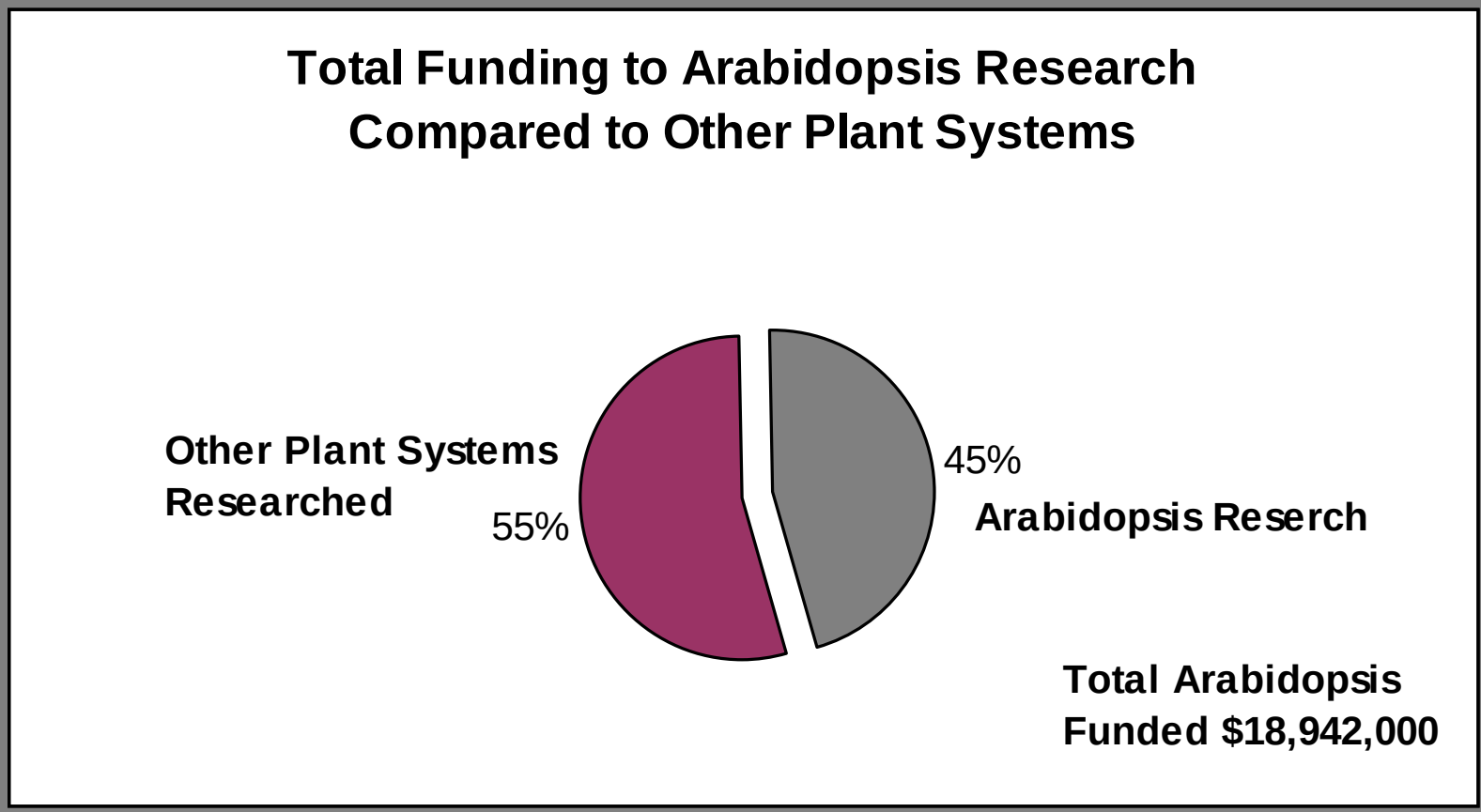
Source: Randle, 2005

Total 2002-04 CSREES Funding for Different Research Approaches



Source: Randle, 2005

Total 2002-04 CSREES Funding for Different Research Approaches



Source: Randle, 2005

Summary: Funding Patterns by CSREES 2002-04

1. Agricultural Departments are Not Competitive in most of the Plant Science Categories
2. Research with a molecular genetic approach receives 63% of the funding overall and 91% of the funding in 5 of 7 categories
3. Faculty structure needs to reflect the strong emphasis placed on molecular genetics to compete for most CSREES funding
4. Land-grant institutions need to better communicate their state research needs

Source: Randle, 2005

“Randall Report” Conclusions

“It is difficult to believe that U.S. agricultural concerns are being addressed when 57% of the overall funding went to non-agricultural departments, and 74% in 5 of the 7 categories.”

“There appears to be a strong disconnect between the land-grant institutions and the people setting the research priorities, funding categories and merit review.”

“Further investigation needs to determine how greater input can be made from land-grant institutions to improve the funding success to agricultural departments.”

Source: Randle, 2005

National Research Initiative:

Applied Plant Genomics Coordinated Agricultural Projects

The goal of the Applied Plant Genomics CAP is to engage the applied plant-sciences, both public and private, and involve them in the application of basic discoveries to U.S. crop or forestry improvement.

The first RFA for this program was published in FY 2004 to support a CAP focused on large-scale rice translational genomics for U.S. agriculture.

In Fiscal Year 2005 the program (~$5 million) is not plant species specific.

Release of the FY 2006 NRI RFA is expected by late September 2005.

National Research Initiative:

Applied Plant Genomics Coordinated Agricultural Projects

- A plan to develop or improve high-throughput mapping and marker development, establish mapping populations, and identify genomic intervals carrying traits of agronomic interest directly useful to breeders and to other biologists for fundamental plant science research.

- A plan to develop or improve web accessible informatics-based tools that enable efficient access to genetic, trait, physical and expression data.

- A plan to develop or improve molecular markers and apply marker-assisted breeding/selection to characterize germplasm critical to U.S. plant breeding objectives or which will create new products or new markets for the U.S. agricultural industry.

- *Support will be provided for investigators to utilize new genome technologies to address problems not readily solved by conventional breeding methods.*

SoyCAP
APPLIED SOYBEAN GENOMICS

Planning Conference, St. Louis, MO from December 16-17, 2004

- Develop transgenic approaches to increase resistance to priority pathogens and pests.
- Develop breeder-friendly molecular markers for seed target traits in order to increase seed protein quality and quantity.
- Develop markers to allow breeders to engineer soybean with optimal oil composition.
- Broaden the soybean genetic base and foster technological innovations for sustainable yield improvements.
- Abiotic stress: Increased drought tolerance was chosen as the top priority for soybean improvement through translational genomics.
- Development of a novel, Web-based “Soybean Breeder’s Toolbox”.
- Develop breeder-friendly molecular markers to identify QTL regions encoding resistance to a variety of soybean diseases and pests, especially Asian soybean rust.

Plant Breeding Coordinating Committee

Cooperative State Research, Education and Extension Service

"Starting in FY 2006, a new multi-state coordinating committee for plant breeding should create increased visibility for the nation's plant breeding effort. The ability to find the committee through various web search engines, such as the National Information and Management Support System, will begin to help communicate the centrality of plant breeding to national goals. In addition, the committee will serve as a venue and contact point to link plant breeders who seek to identify and address problems and opportunities of national importance for plant breeding".

Plant Breeding Coordinating Committee

Cooperative State Research, Education and Extension Service

“Plant breeding has been, and by any scenario will remain, a major contributor to U.S. agriculture. It impacts all five strategic goals of the USDA Research, Education, and Economics (REE) 2003-2008 Strategic Plan. Nonetheless, plant breeding is often unmentioned in the many road maps, white papers, and plans written to guide our national approach to strategic goals for agriculture and food. Given the scope of plant breeding’s impact, why is it not better known?”

Plant Breeding Coordinating Committee

Cooperative State Research, Education and Extension Service

The Plant Breeding Coordinating Committee will be:

1. A channel of communication between plant breeders in different societies.

2. A forum for leadership regarding issues, problems and opportunities of long-term strategic importance to the US national plant breeding effort.

3. Inclusive of all crops.

Plant Breeding Coordinating Committee

Cooperative State Research, Education and Extension Service

“General objectives for the plant breeding coordinating committee will include exchanging information within and about the U.S. plant breeding effort, describing the benefits from plant breeding, and identifying research and education priorities. The meeting schedule will be opportunistic and coincide with professional meetings such as the Crop Science Society of America, American Society for Horticultural Science, or other meetings that bring plant breeders to one location.”

Plant Breeding Coordinating Committee

Cooperative State Research, Education and Extension Service

Plant Breeding CC will be announced at CSSA annual meeting on Nov. 10 (8-9am) and PAG meeting on Jan. 18 (4:30-6:30pm).

Administrative Advisor is Mark Hussey, Texas A&M

Ann Marie Thro is CSREES liaison.

Setting CSREES Research Priorities

The Secretary of Agriculture ultimately sets research priorities funded by the CSREES.

> "Secretary shall solicit and consider input and recommendations from persons who conduct or use agricultural research, extension, or education".
>
> It is the responsibility of the 1862, 1890, and 1994 institutions to "establish and implement a process for obtaining input from persons who conduct or use agricultural research, extension, or education concerning the use of the funds".

Source: Randle, 2005

Setting CSREES Research Priorities

Managing principles:

1. Agricultural research, extension, and educations functions are integrated to better link research to technology transfer and information dissemination.

2. Regional and multistate programs are encouraged to address relevant issues of common concern and to better leverage scarce resources.

3. Agricultural research, extension, and education objectives are achieved through multi-institutional and multifunctional approaches at “facilities and institutions best equipped to achieve those objectives.”

Source: Randle, 2005

Setting CSREES Research Priorities

CSREES requests comments regarding all RFA from any interested party which are in turn considered in the development of the next RFA for the program, as applicable.

(www.csrees.usda.gov/business/reporting/stakeholder.html).

CSREES “Advisory Board”

31 members, 3-year staggered terms

Reviews relevance of the priorities established for funding, and adequancy of funding.

(http://www.nareeeab.com/members/member_list.asp)