

**Farmers and Public Plant Breeding
Programs:
Opportunities for Partnership
April 2016 SAAESD/ASRED Meeting**

Roland McReynolds, Esq.
CFSA Executive Director



carolina farm stewardship association

**CFSA is a membership-based
non-profit representing farmers and food
businesses serving the rapidly expanding
markets for local and organic foods.**

USDA's Fruit & Vegetable Industry Advisory Committee Priority

- Insufficient availability of regionally-adapted public plant varieties
- Availability of regionally-adapted fruit and vegetable varieties and public plant breeding programs essential to the success of fruit and vegetable growers in all regions of the U.S
- Magnified by climate variability and novel pest threats

Factors working against greater availability of regionally-adapted fruit and vegetable cultivars

- Fruit and vegetable seed market has become increasingly consolidated
- Discontinuation of many fruit and vegetable lines as those larger companies seek economies of scale
- Small size of regional specialty crop markets makes them less attractive sectors for significant private breeding programs by these now larger seed companies

The Role of Public Plant Breeding Programs

- Public breeding programs are an essential means for countering this imbalance
- Public plant breeding programs have a track record of successfully producing useful plant varieties and have proven their value as the germplasm “backbone” of private breeding efforts

Challenges at Land Grants

- State funding for public plant breeding efforts has declined sharply over recent decades
- Decline in the number of plant physiologists, plant breeders and public breeding programs
- Very few universities have even one plant physiologist who has the resources to interact with breeders in germplasm identification and enhancement
- What royalties universities are collecting from fruit and vegetable breeding efforts are often being steered to those institution's general funds instead of being reinvested in the breeding programs

USDA Fruit & Vegetable Industry Advisory Council Priority

- Restoration of public plant breeding programs identified by the Committee as a crucial strategy for improving the availability of regionally-adapted produce cultivars
- Recommended USDA lead the development and implementation of a comprehensive national plan to restore funding and institutional capacity for the development of public plant varieties

USDA Fruit & Vegetable Industry Advisory Council Goals

- Increase the number of public cultivar developers in each of the 7 climatic regions
- Address negative impacts of consolidation and concentration in ownership of seeds
- Encourage more independent regional seed companies
- Increase farmer and researcher access to innovation in the development of elite cultivars

USDA Fruit & Vegetable Industry Advisory Council Goals

- Minimize negative impacts of utility patents and restrictive licenses
- Development of new, innovative partnerships and models to address regionalized and participatory to public cultivar development
- Strengthen and democratize public germplasm collection systems
- Building greater public awareness of importance of public cultivar development

Meeting the Challenge

- How and can Land Grant Universities and industry work together to reinvigorate public plant breeding programs?
- How can the next Farm Bill incorporate funding for public plant breeding programs?

USDA Response So Far

Oct. 2015 Letter from Senate Agriculture Appropriations Committee:

“Section 7406 of the Food, Conservation, and Energy Act of 2008 specifies priority areas with AFRI, including an emphasis on conventional (classical) plant and animal breeding. The Committee strongly concurs with the intent of this section, and notes the importance of having publicly available cultivars and breeds that are specifically bred to be adapted to the soils, climates, and farming systems of farmers of all regions... [The Committee] strongly urges [AFRI] to make public cultivar and breed development an increased priority for funding within the AFRI program by creating a separate Request for Applications in this area.”

USDA Response So Far

USDA response:

“Because the applicant community in the classical plant and animal breeding is accustomed to the separate priority areas in the existing RFAs, NIFA believes that the intent of the Senate report language and your letter can be met without confusing the applicants by creating a separate RFA.”

USDA Response So Far

FY 2015: Plant Production/Growth & Development combined awarded \$6 million across 19 grants

- 9 grants devoted to plant breeding research projects that aim to develop new and improved varieties, \$3.6 million of total
- 3 specialty crops (blueberries, carrots, tomatoes)

USDA Response So Far

- FY 2016:
 - \$4 million in Plant Production grants, 1% of total AFRI funds
 - \$8 million for Plant Growth & Development, 2% of total AFRI Funds
- 25% of grants relate to specialty crops
- 2 grants for cultivar development (taro, alfalfa)
- Overwhelmingly methodological/technological proposals that will not directly result in actual cultivar development

USDA Response So Far

Recent NIFA Funding History for Plant Breeding:

- Awards are small (<\$500,000)
- Cultivar development difficult on such small budgets

Questions?

Roland McReynolds, Esq.

Executive Director

roland@carolinafarmstewards.org

919.542.2402

