

# **National Program 302**

## **Plant Biological and Molecular Processes**

### **The Previous Five Years**

#### **External Assessment Team**

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# Strengths of NP302

- The Problem Areas covered by NP302 are scientifically sound and exciting
- There is more emphasis on the ARS national agenda than in the past
- There are many outstanding programs and ARS scientists involved in NP302
- The structure of NP302 allows ARS scientists to move quickly into new research areas as they arise
- Strong focus on plant genetic systems and transformation technologies

# Positive Impacts of NP302 on National Agriculture

- Focus on reduced inputs, higher yields and product quality
- Emphasis on biological control in pest management
- Significant publications on plant function useful in new crop development
- New focus on biotechnology risk assessment

# Scientific Advances that Could Increase NP302 Impact

- Improved transformation efficiency in many crops
- Increased ease and specificity of site-specific transformation

[Both the above would make crop species more accessible to the wider plant biology community]

- Development of environmentally benign, sustainable agricultural methods
- Better understanding of fundamental plant biology

# Issues to Consider

- NP302 program balance requires comprehensive strategic planning to align NP302 problem areas with national needs (e.g., plant genetic systems vs. response to environmental stresses)
- Need to develop national resources at ARS laboratories (e.g., comprehensive bioinformatics)
- Occasional disconnect between identified national needs and Project Area (holdovers?)
- Apparent inverse correlation between how applied a project is and the number of peer-reviewed publications

# Issues to Consider, Cont

- How to enhance interactions between basic and applied ARS scientists
- How to facilitate coordination between NP302 projects and those in other national programs
- Are the number of unfilled positions a concern for ARS?

# Organizational Features that Would Increase Impact

- Continued development of national needs planning using input from a broad clientele
- Promote the physical proximity of ARS scientists across different disciplines
- Facilitate access to high-end instrumentation
- Designate NP302 as the ARS program for technology development

# Organizational Features that Would Increase Impact, Cont.

- Ensure linkage of project evaluation and performance outcomes to funding (currently unclear)
- Relate budget planning to national needs
- Encourage longer appropriations cycle to maximize efficiency of fund deployment

# Organizational Barriers to Increasing Impact

- **Laboratories are isolated in some cases**
- **Physical separation of workers in different disciplines**
- **Limited opportunities for involvement in graduate education**

# Odds and Ends

## 1. Desired synergies are difficult to evaluate

- Development a metric for identifying synergies in annual reports

## 2. NSF Genome Project has led to the development of community-wide resources

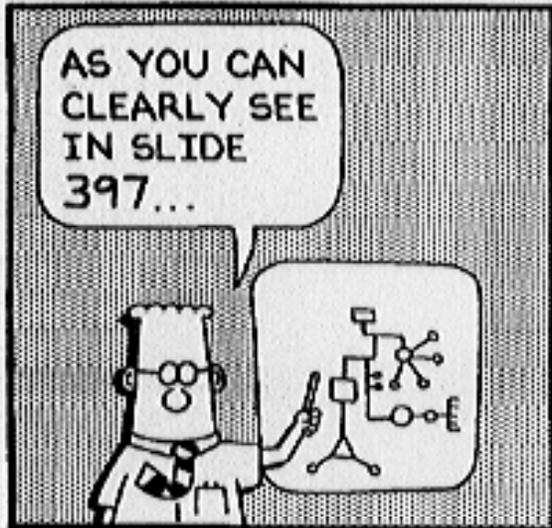
- Could ARS emulate this approach by dedicating groups of ARS researchers to tackle identified “big” issues in plant science?

# Odds and Ends, Cont.

## 3. Need to further enhance multi-disciplinary research

- Require truly collaborative proposals
- Develop external advisory boards for each Component or possibly even Problem Areas

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