USDA Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

Welcome

to the

BRS Stakeholder Meeting

AGENDA

RESOURCES
ONE-PAGER

BIOTECHNOLOGY REGULATORY SERVICES

Welcome!

Amanda Kenney, Ph.D.
Senior Biological Scientist

Opening Remarks

Dudley Hoskins, J.D., USDA MRP Under Secretary

Kelly Moore, M.A., USDA APHIS Acting Administrator

FY 25 Program Highlights

Donna Lalli, Ph.D.
BRS Deputy Administrator

USDA Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

A Tale of Two Rules in FY 25

BIOTECHNOLOGY REGULATORY SERVICES

USDA Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

Quick Service Restoration under the Original Rule

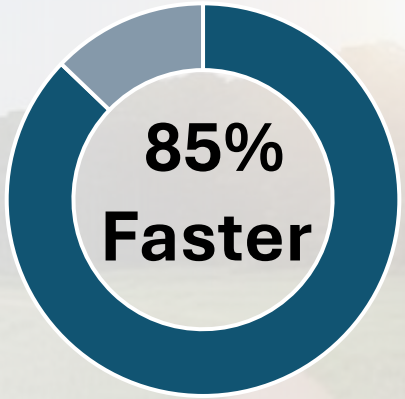
BIOTECHNOLOGY REGULATORY SERVICES

Am I Regulated (AIR) Inquiries

- Restarted AIR process in **17 days**
- **Target:** Respond to Am I Regulated (AIR) inquiries **35% faster**
- Issued 69 AIR responses – A **360% increase in responses**

AIR Accomplishment

FY 25 Average:
28 Days



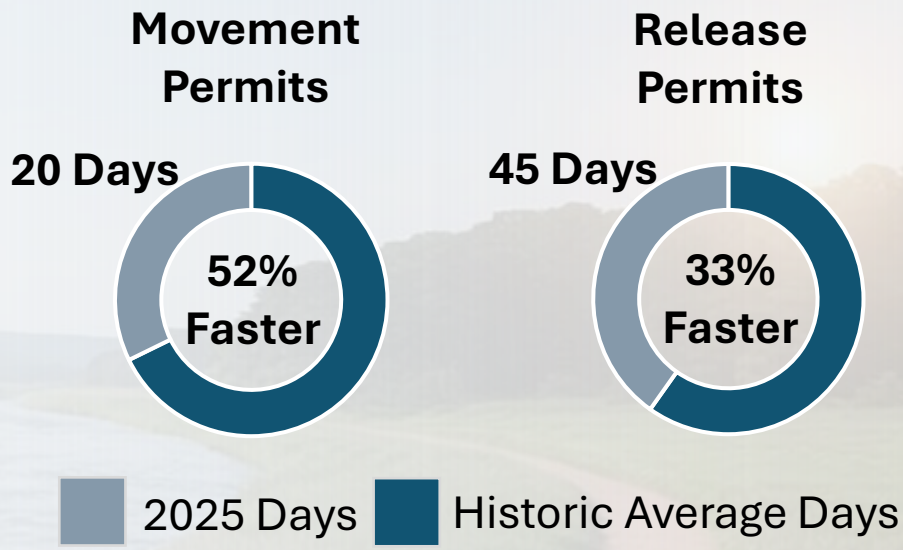
Historic Average:
190 days

2025 Days

Historic Average Days

Authorizations for Regulated Activities

- Restarted **permit process in 17 days** and **notifications** process in **52 days**
- **Target:** Issue **95% within regulatory timeframe**
- **Target exceeded** with roughly **42% faster service**
- **Trend** – FY 21 – FY 25: Permit applications for **modified microbes** increased **greater than two-fold**

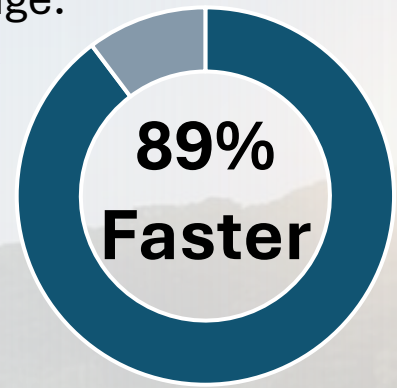


Compliance Oversight

Target: Issue noncompliance notices within 14 days

Issued 93% of noncompliance notices within 14 days

FY 25 Average:
11 Days



2025 Days

Historic Average Days

Regulatory Operations

Petitions

- Restarted **accepting petitions** in **87 days**
- Issued our first **petition** (orchid) within the 180-day regulatory timeframe

Product Response Trends

Biotechnology Regulations 1992-2020

Responses Confirming Nonregulated Status:
168 in an average of 190 days
Product Reviews:
139 reviews involving 19 crops in an average of 534 days

SECURE Rule 2020-2024

Responses Confirming Exempt Status:
99 in an average of 52 days
Product Reviews:
84 reviews involving 17 *new* crops in an average of 236 days

Biotechnology Regulations 2024-Current

Responses Confirming Nonregulated Status:
69 in an average of 28 days
Product Reviews:
1 in 180 days

Looking Forward: The Proposed Efficiency Rule

Current State

- Petition for every new transformation event
- Duplicative regulation for products regulated by EPA and USDA
- Prescriptive shipping requirements
- Limited duration movement permits

Efficiency Rule Impact

Regulatory Streamlining

- ✓ Movement exclusions for low risk/common lab organisms
- ✓ Reduces rigid shipping requirements
- ✓ Multiyear movement permits

Regulatory Relief

- Deregulation applies to future transformation events eliminating re-review of the same product.
- USDA regulatory relief when a product is registered or permitted by EPA.

For More Information

Contact Us:

https://www.aphis.usda.gov/contact/biotechnology

BRS Website:

https://www.aphis.usda.gov/biotechnology

Subscribe:

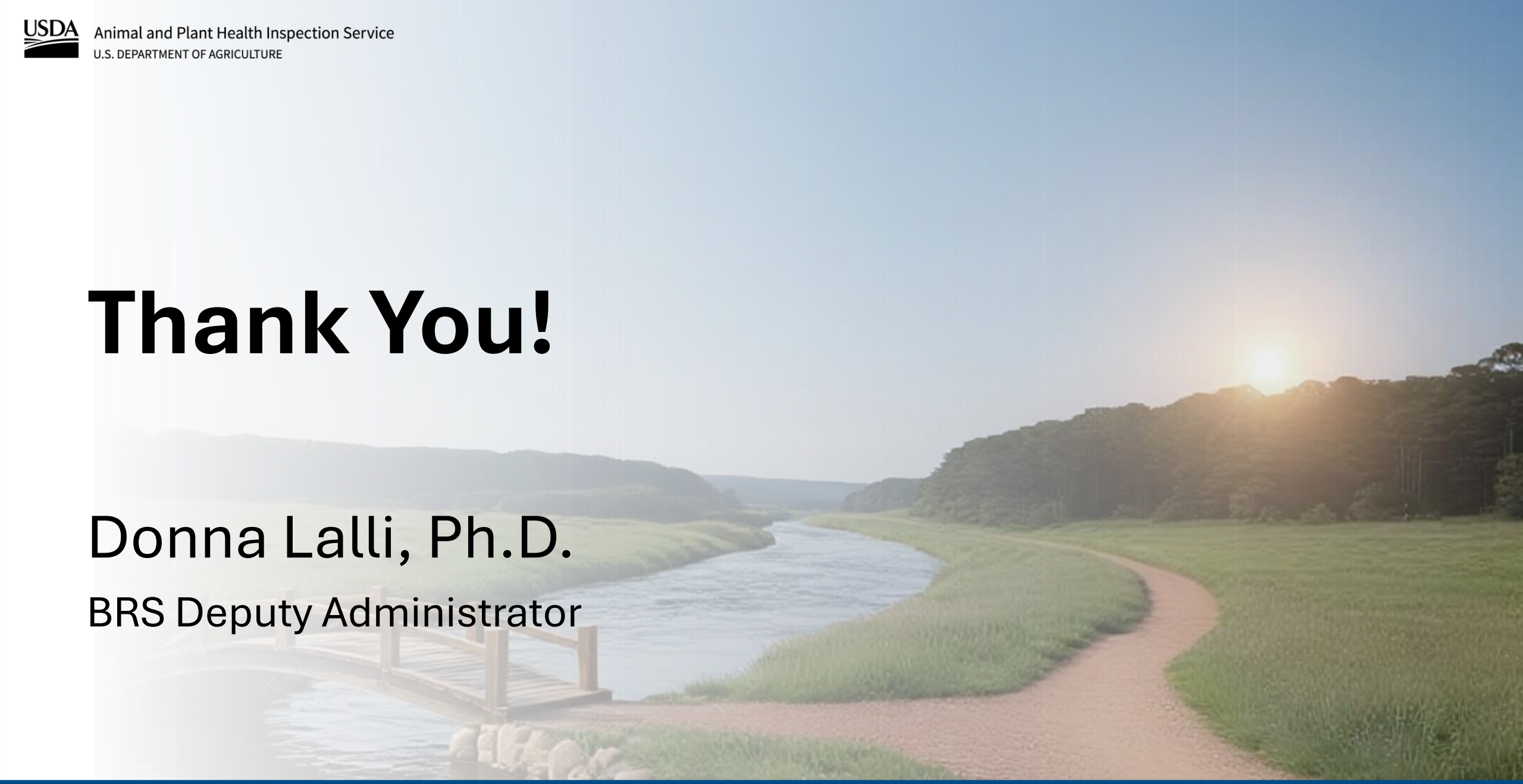
https://public.govdelivery.com/accounts/USDAAPHIS/subscriber/new

Coming Up


Regulatory Operations
Microbe Efforts
International Engagement
Permits/ Notifications
Petitions
Organizational Updates
Am I Regulated?

Thank You!

Donna Lalli, Ph.D.
BRS Deputy Administrator



Organizational Updates

Michael Stulberg, Ph.D.
BRS Associate Deputy Administrator

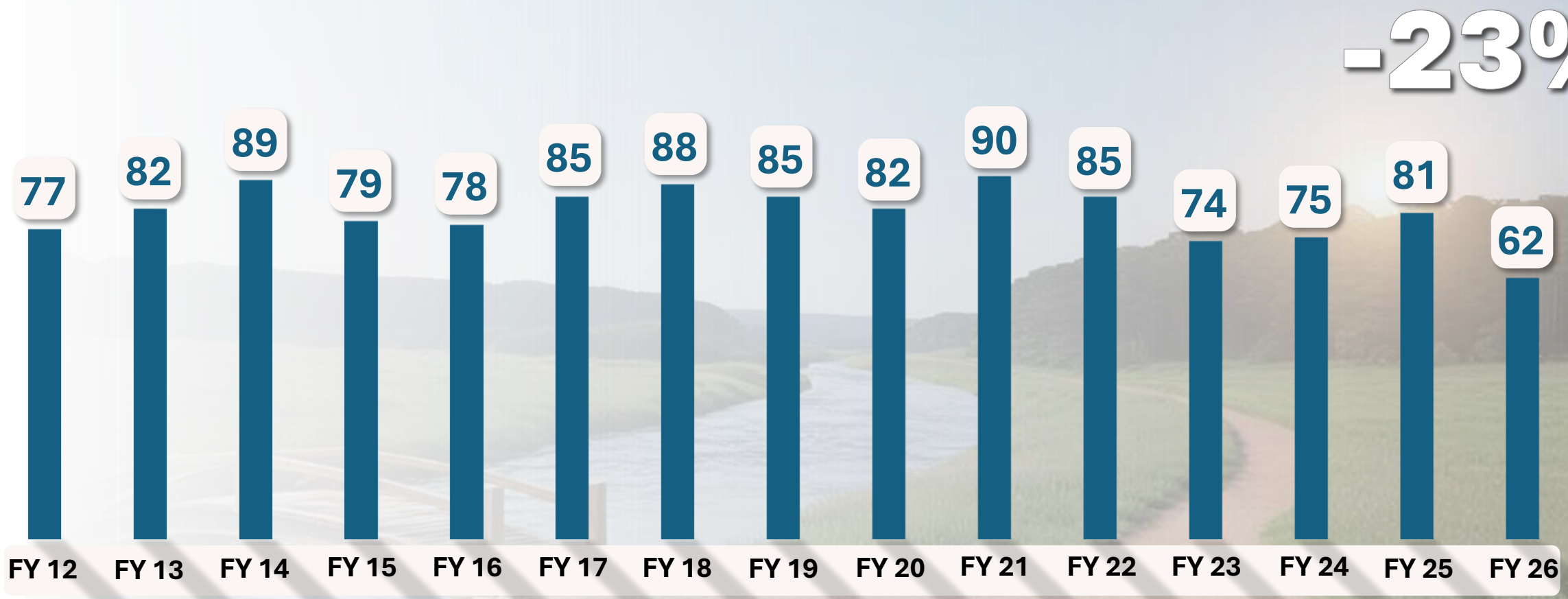
FY 25 New Staff Members

Jennifer Nelson
Branch Chief
Resource Management Services

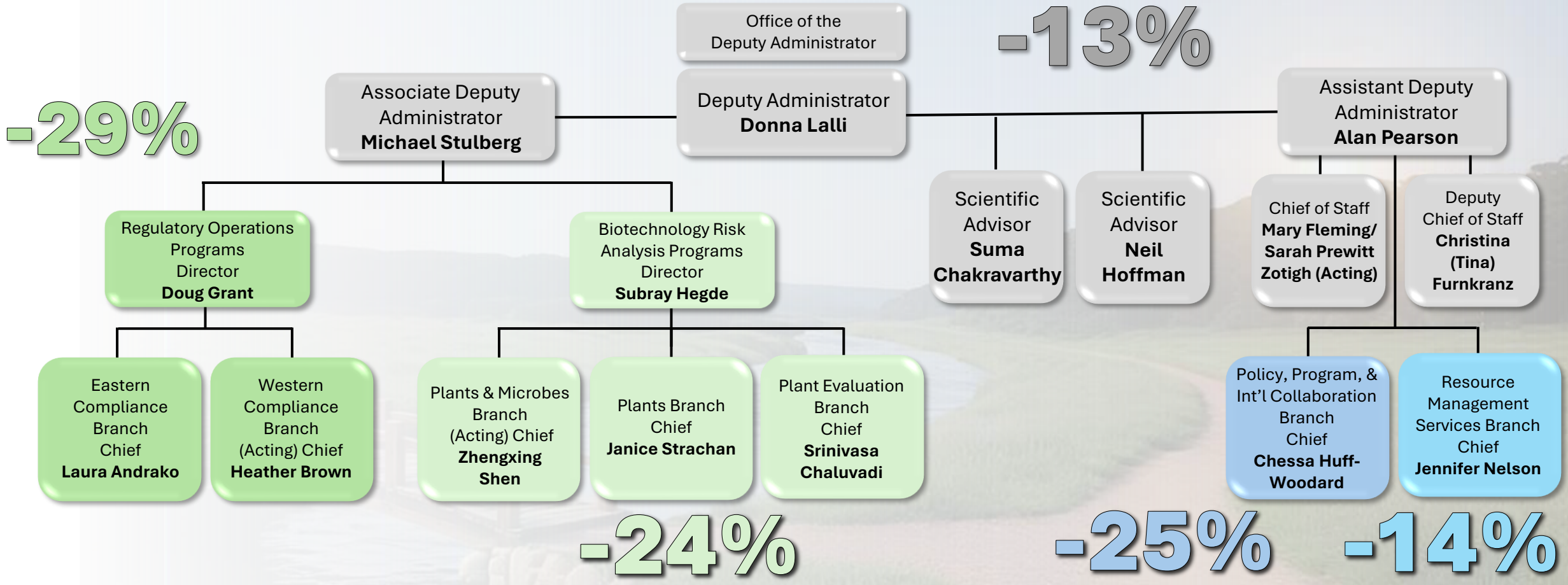
Donna Lalli, Ph.D.
Deputy Administrator
Office of the Deputy Administrator

Christina (Tina) Furnkranz
Deputy Chief of Staff
Office of the Deputy Administrator

Staffing Levels since FY 12



BRS Organization



APHIS Headquarters Move

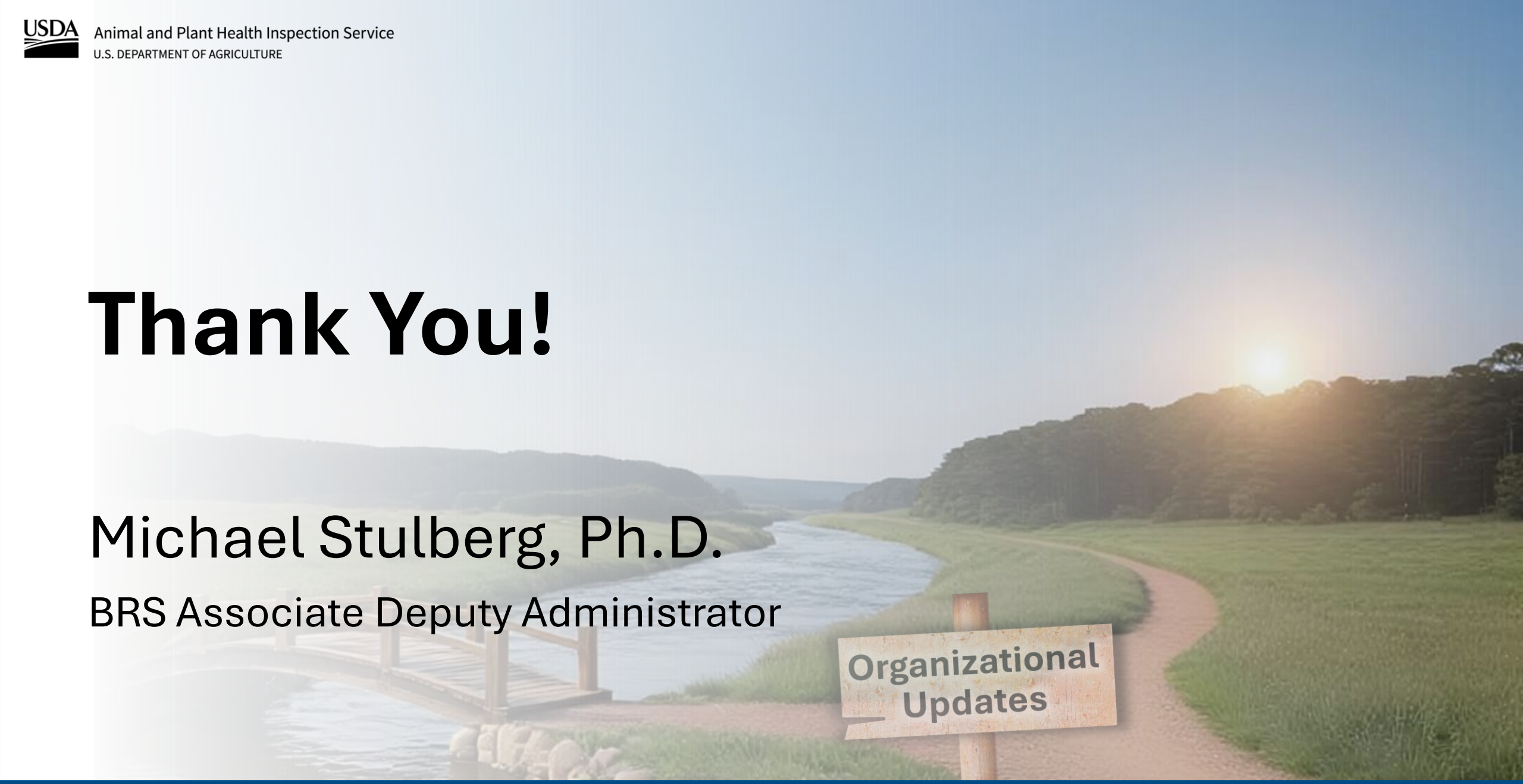
Riverdale, MD

Spring 2025

Beltsville, MD

Thank You!

Michael Stulberg, Ph.D.
BRS Associate Deputy Administrator

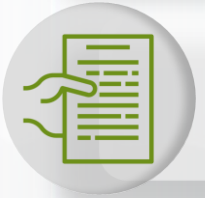


Am I Regulated (AIR)?

Rebecca Fletcher, Ph.D.
Senior Biological Scientist
Biotechnology Risk
Analysis Programs (BRAP)

What is the AIR process?

Voluntary and nonregulatory process



Developers submit a letter of inquiry describing their modified organism

BRS issues a response letter confirming that the organism does not meet, or meets, the definition of “regulated article”

Not a risk assessment

What is a Regulated Article?

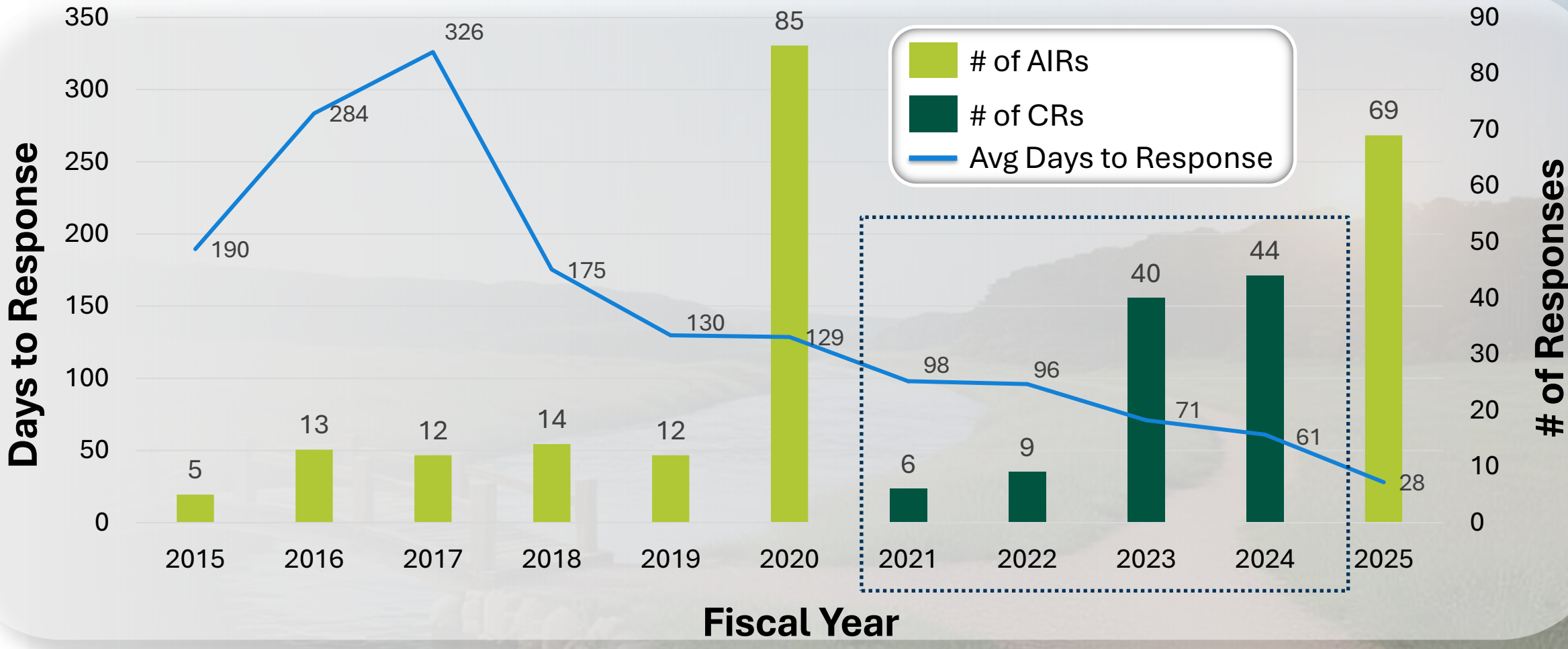
A regulated article is an organism that has been altered or produced using genetic engineering and that:

has one or more of its components derived from a plant pest or an unclassified or unknown organism;

or

that APHIS determines is a plant pest or has reason to believe is a plant pest

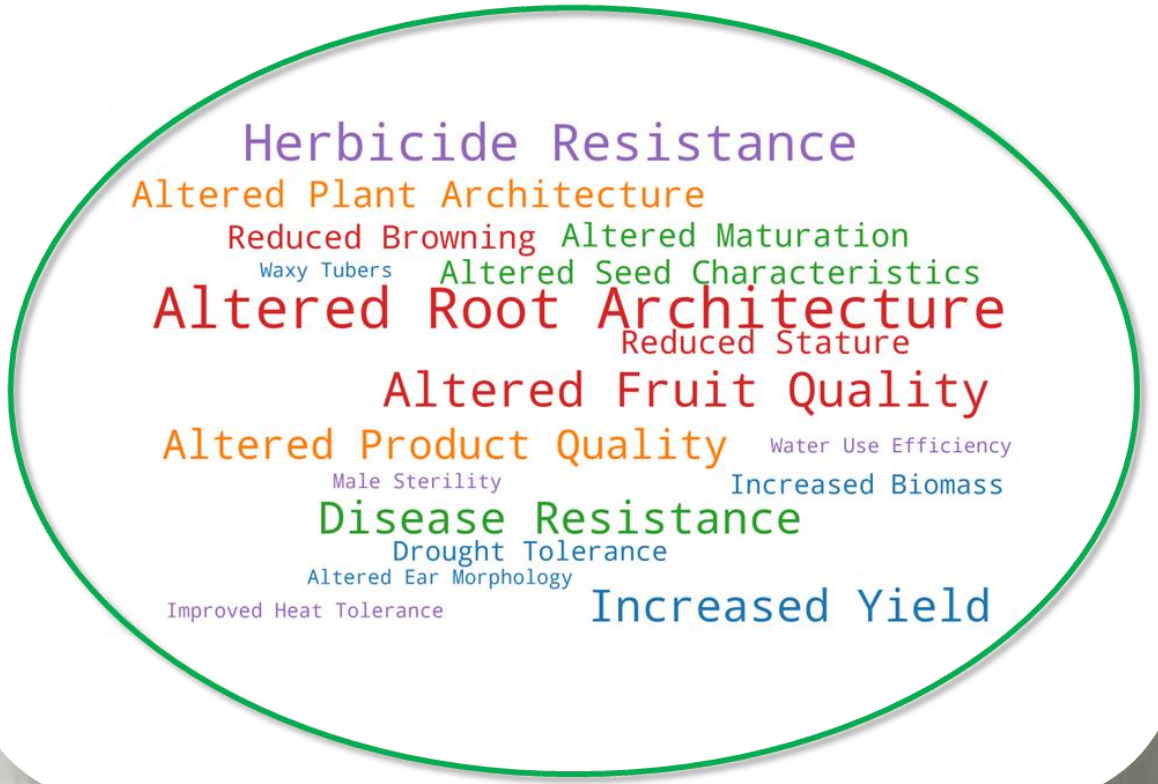
AIR Trends: Process Efficiency



FY 25: Varieties of Organisms and Traits

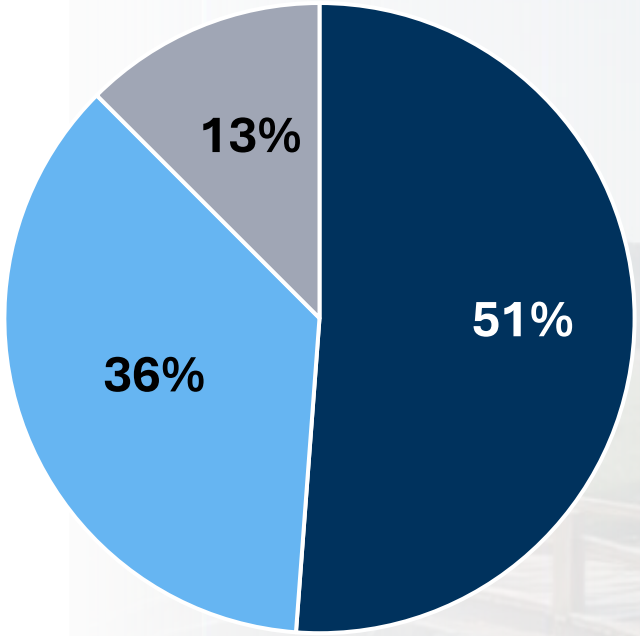
20 plant species & 9 microbes

Example traits and phenotypes

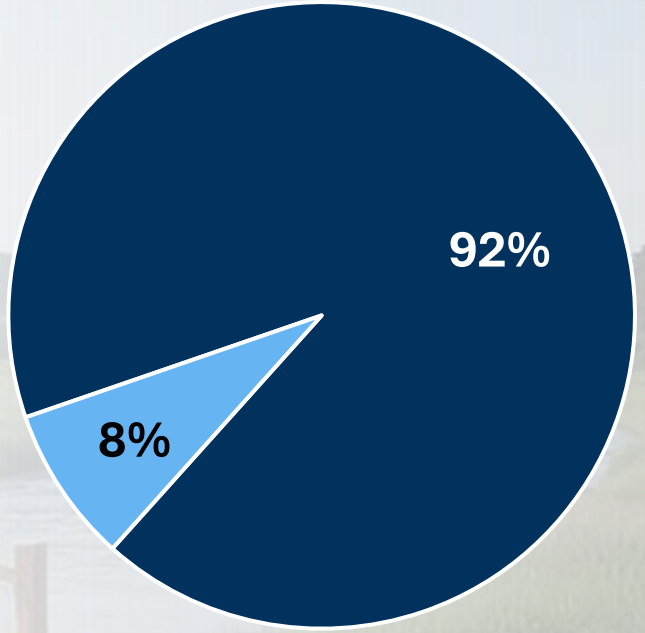


Modification Category

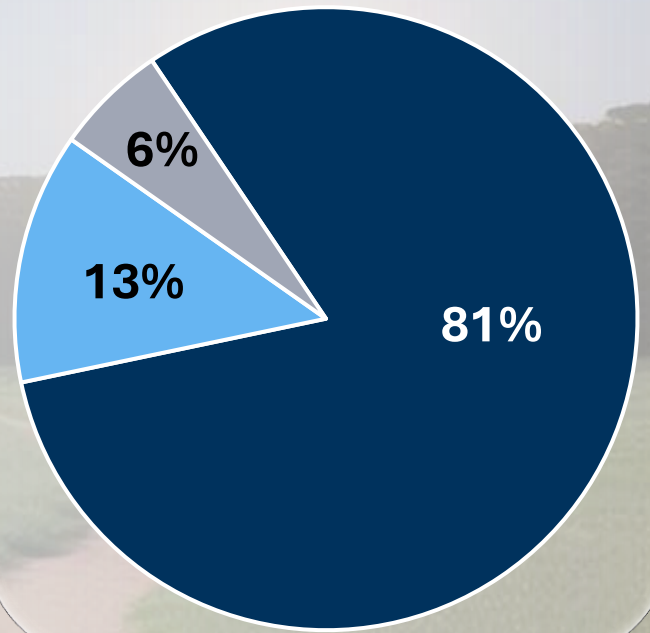
AIRs FY 11-FY 20
(N=168)



CRs FY 21-FY 24
(N=99)



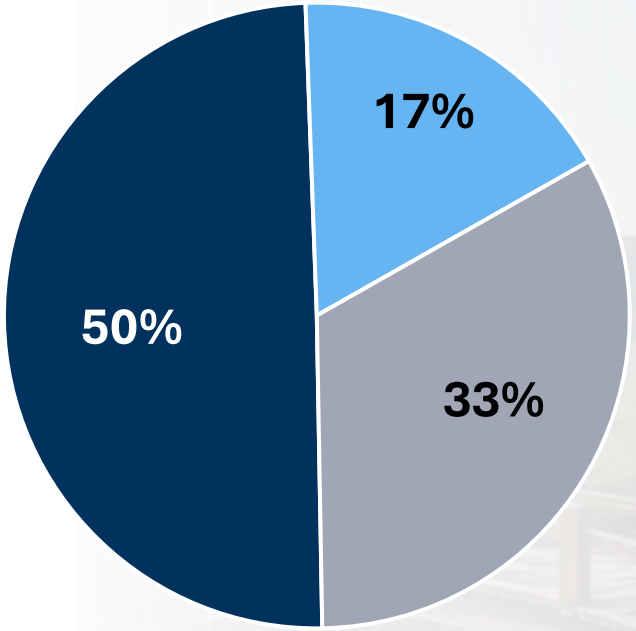
AIR FY 25
(N=69)



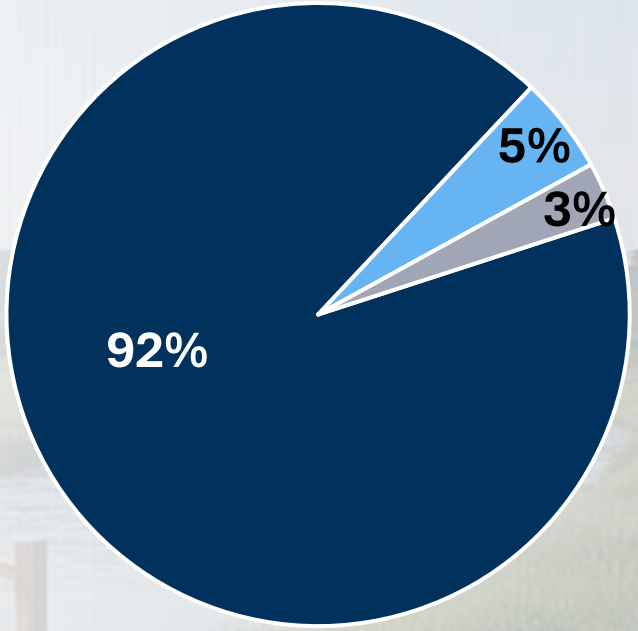
Genome Edited Transgenic Other

Types of Organizations

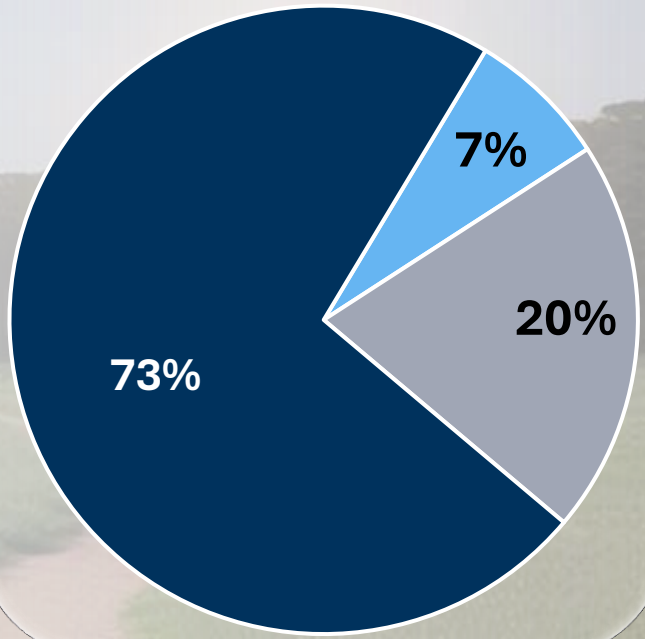
AIRs FY 11-FY 20
(N=168)



CRs FY 21-FY 24
(N=99)



AIR FY 25
(N=69)



Small to Medium Enterprises | Public | Major Biotech

Updates to the AIR Guide

- Clarification on information requirements
- Clarification that BRS does not conduct risk assessment through the AIR process
- Administrative updates

Resources

AIR Guide:

https://www.usda.gov/guidance-documents/biotechnology/aphis/am-i-regulated-air-process-guide-submission-air-inquiries

Public Table:

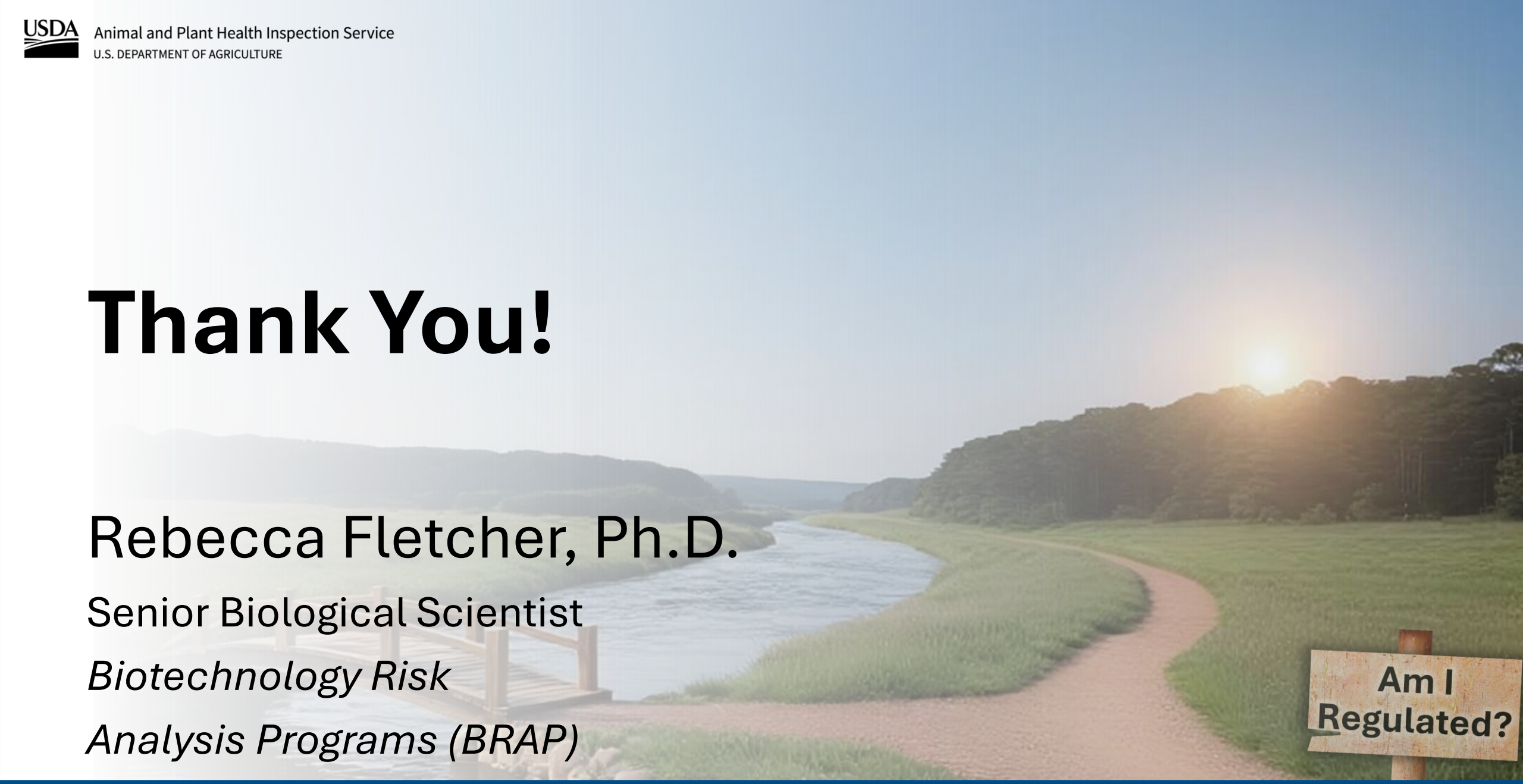
https://www.aphis.usda.gov/biotechnology/regulated-article-inquiry

AIR Email Address:

AIRinquiry@usda.gov

Thank You!

Rebecca Fletcher, Ph.D.
Senior Biological Scientist
Biotechnology Risk
Analysis Programs (BRAP)



Petitions

Amanda Kenney, Ph.D.
Senior Biological Scientist
Subray Hegde, Ph.D.
Director
Biotechnology Risk Analysis Programs (BRAP)

What is the Petition Process for Modified Plants under § 340.6?

Regulatory process to seek deregulation of a genetically engineered (modified) plant

1. Developers **submit** a written petition
2. APHIS **conducts** a plant pest risk assessment (PPRA)
3. APHIS **publishes** the petition and PPRA for public comment
4. APHIS **issues** a determination

If deregulated, the modified plant may be moved and planted without BRS regulatory oversight*

** Modified plants may be subject to regulatory review by other U.S. agencies*

Petition Process Updates

- Revised Petition User Guide
- Better aligned petition process with the regulations
- Shorter review time

Required Information for a Petition

Our risk assessment is comparative

- Biology of the nonmodified plant
- Genotypic differences & mechanism of action (MOA)
- Known and plausible phenotypic differences
- Relevant experimental data and publications
- List of authorizations

Characteristics Relevant to 7 CFR 340

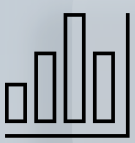
- ✓ Expression of the gene product, ne… …nes, or changes to plant metabolism
- ✓ Plant pest risk cha…
- ✓ Disease and pest…
- ✓ Indirect plant pes…
- ✓ Effects of the regu…
- ✓ Weediness of the…
- ✓ Impact on weedi… …nterbreed
- ✓ Agricultural or cu…
- ✓ Transfer of geneti… …cannot interbreed
- ✓ Any other informa… …be relevant

APHIS uses this information to conduct a **plant pest risk assessment (PPRA)** to evaluate whether a modified plant is unlikely to pose a **greater plant pest risk** than the nonmodified plant from which it was derived

Types of Data and Information

Amount and type of **information needed depends** on the **plant** and the **trait**

Observational information



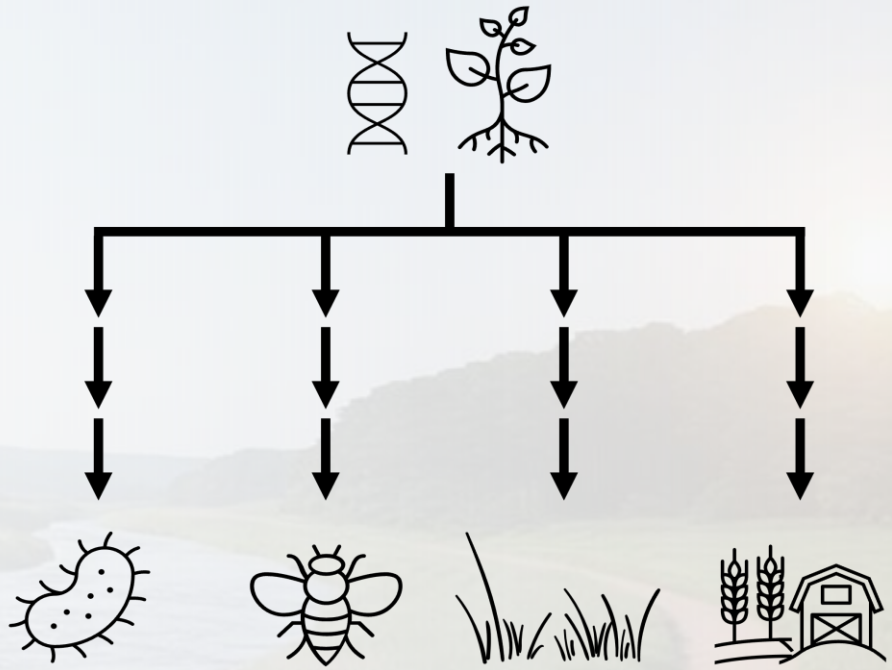
Experimental results

Existing literature or public reports

Logical reasoning or synthesis

Problem Formulation

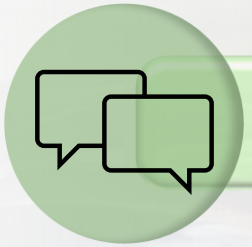
Problem Formulation helps determine what **information is needed** to **assess plausible plant pest risk** for a **particular plant + genetic modification (trait)** combination



Could the plausible ***phenotypic changes*** in ***this plant*** result in ***greater plant pest risk***?

Petitioner Tips

- ❑ For plants without a prior petition, provide thorough information about the nonmodified plant
- ❑ Provide thorough explanation of mechanism of action (MOA)
- ❑ Provide thorough description of known and plausible phenotypic changes and if/how they affect plant pest risk



We encourage pre-submission consultation

Updated Petition Process

If technically incomplete, options are:

1) Respond within 7 days choosing one of the options;
   - ❑ submit a revised petition addressing review comments, or
   - ❑ pause the petition

- No NEPA analysis
- Reduced 3 FR Notices to 2
- Reduced regulatory timeline from 15 to 6 months for Determination

FY 25 Petition Metrics

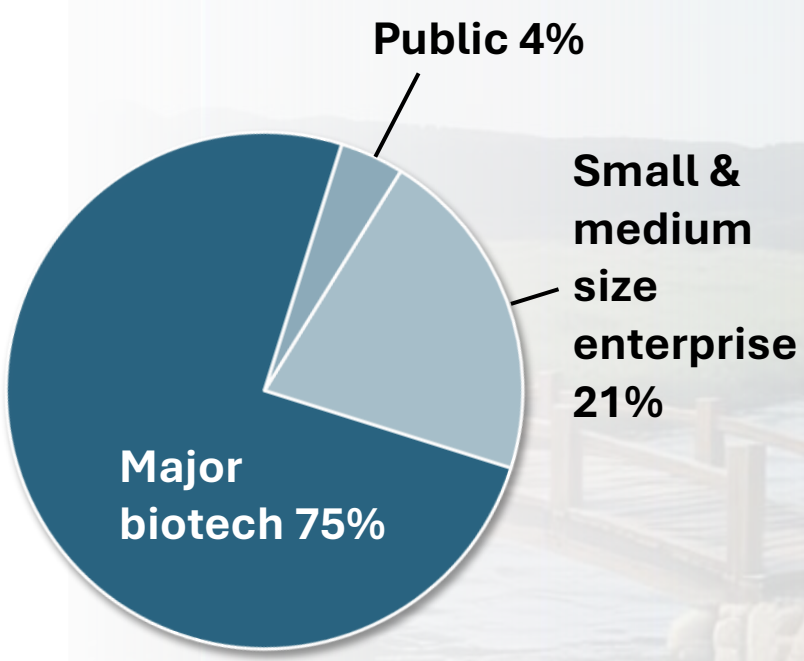
- FY 25 petitions and extensions received: 11
- FY 25 petitions completed: 1
- FY 25 petitions posted for public comment: 7
- FY 25 petitions or extensions pending in various stages of review: 2
- FY 25 petitions withdrawn: 1

FY 25 Petition Submissions

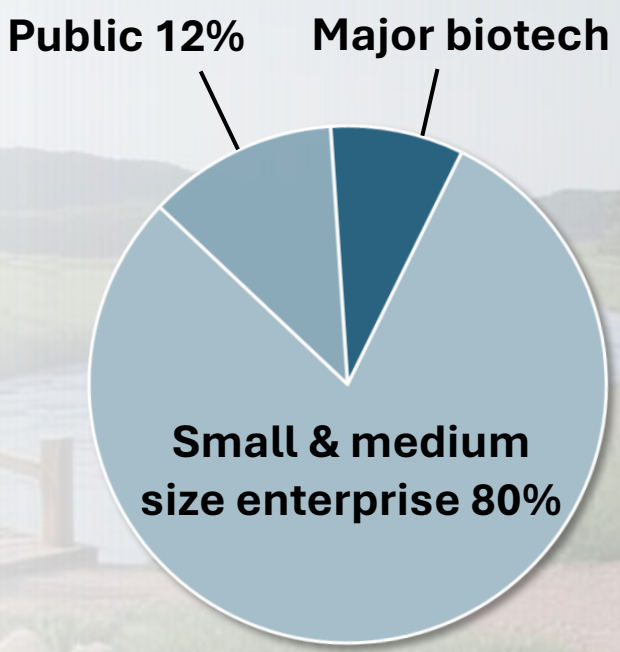
Total	Total petitions and extensions received: 11
Species	Number of species received: 6
New Species	Number of new species received: 4

Applicant Makeup

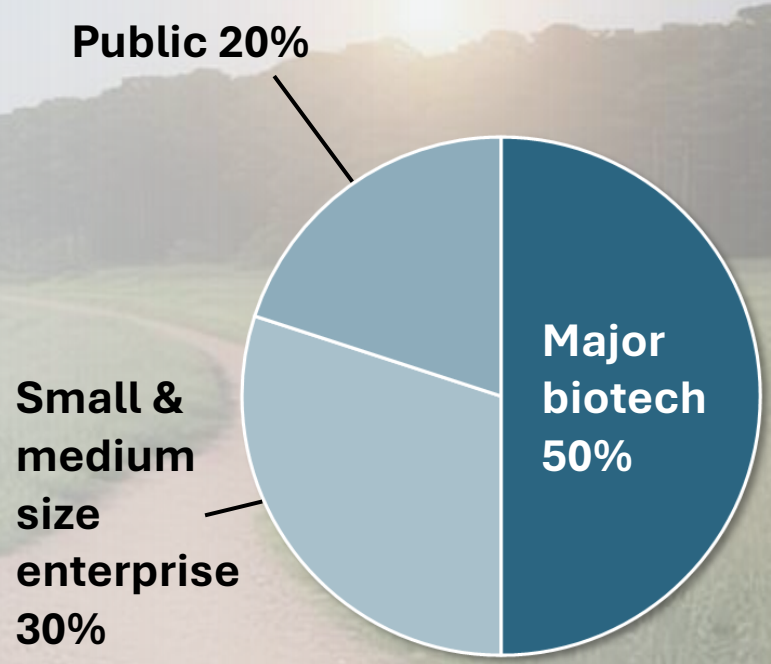
Petitions 1992 to 2020



RSRs under Secure 2021 to 2024



FY 25 Petitions (out of 10)



Focus for FY 26

Identify	Identify internal petition review steps where efficiency can be gained to consistently achieve regulatory timeline of 180 days.
Clarify	Clarify information needed from petitioners based on crop-trait combinations.

Resources

Petitions Website:

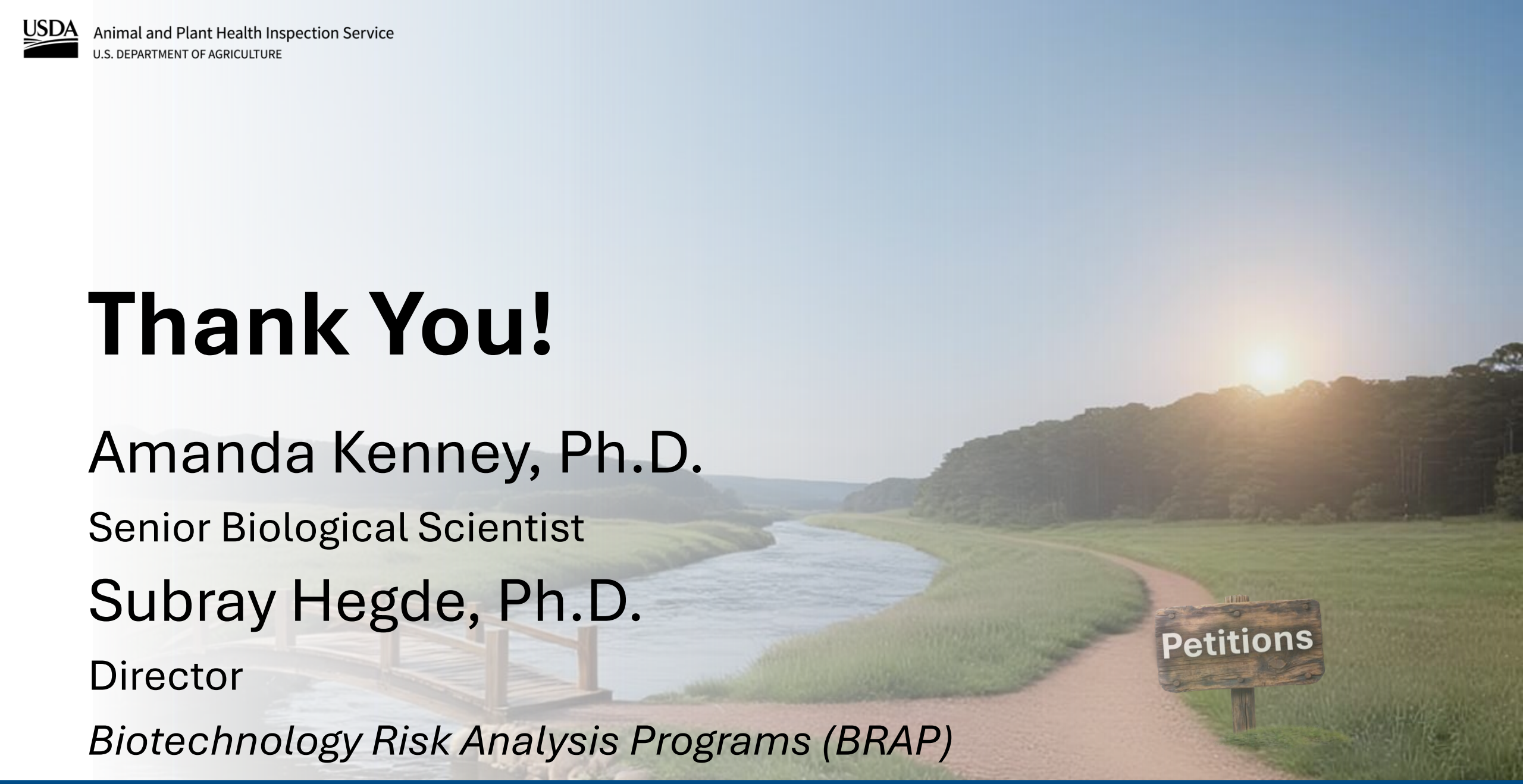
https://www.aphis.usda.gov/petitions

Petitions Email Address:

BRS.Petitions@usda.gov

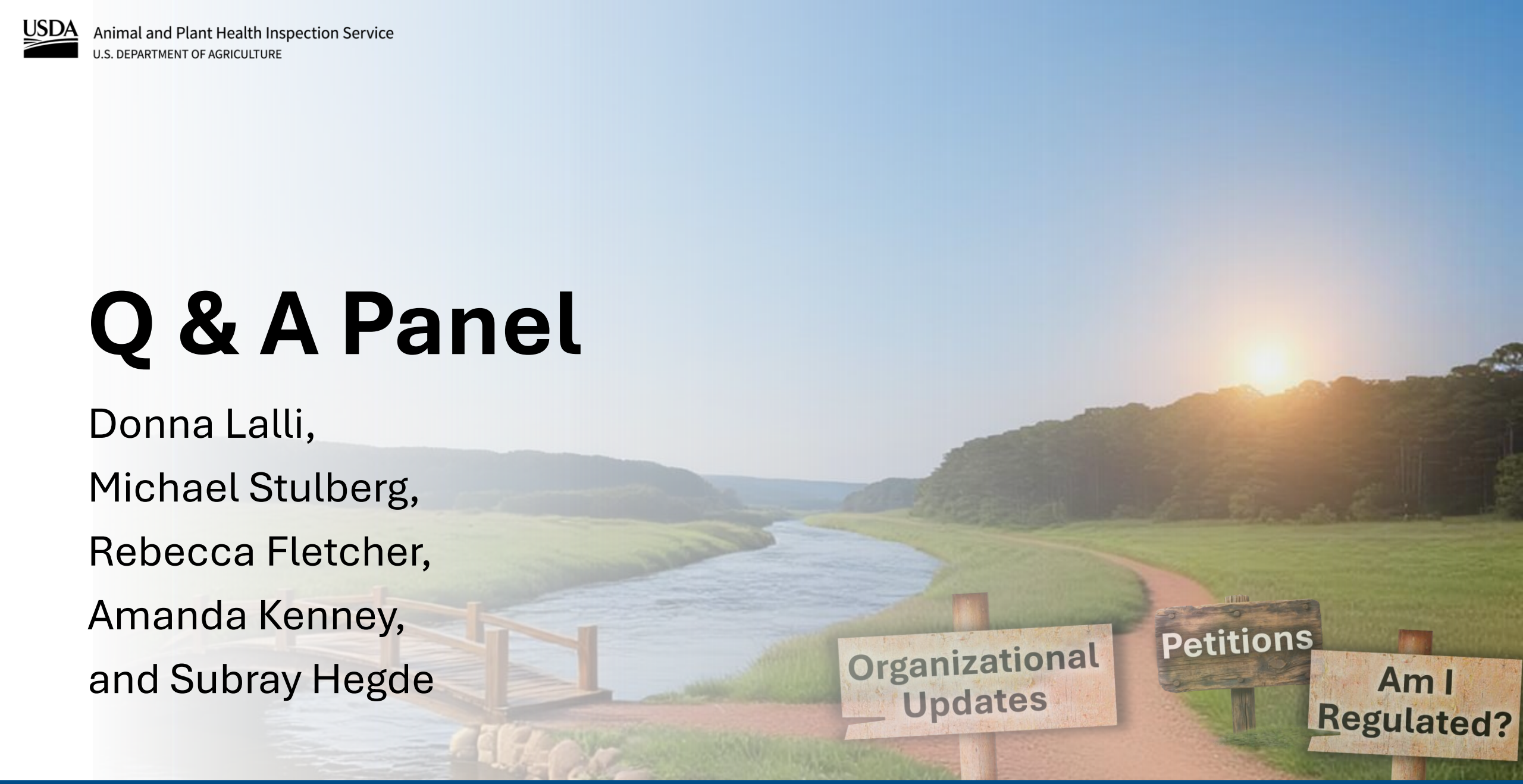
Thank You!

Amanda Kenney, Ph.D.
Senior Biological Scientist
Subray Hegde, Ph.D.
Director
Biotechnology Risk Analysis Programs (BRAP)



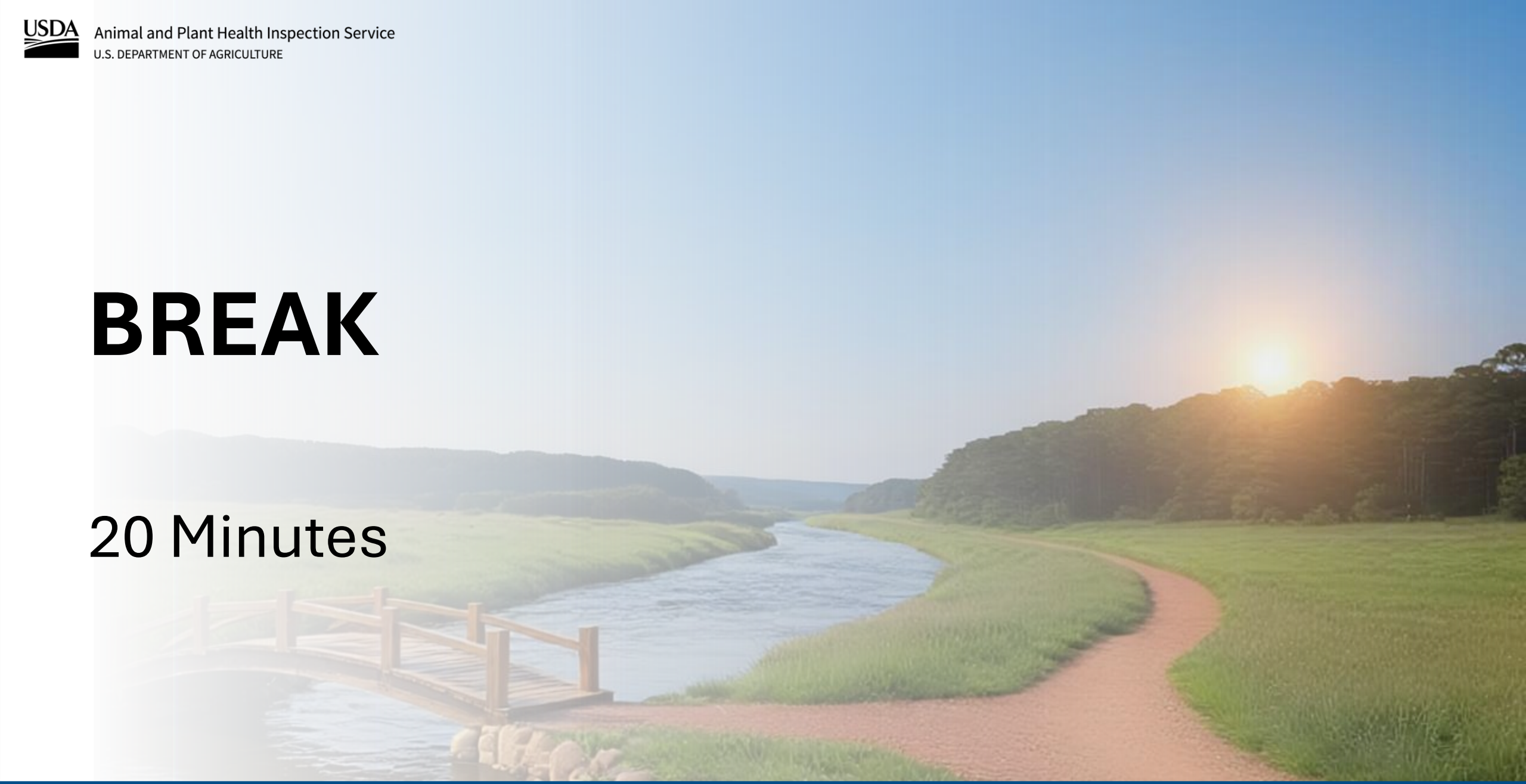
Q & A Panel

Donna Lalli,
Michael Stulberg,
Rebecca Fletcher,
Amanda Kenney,
and Subray Hegde



BREAK

20 Minutes



Permits and Notifications

Katharine Swoboda Bhattarai, Ph.D.
Biological Scientist
Janice Strachan, M.A.
Branch Chief
Biotechnology Risk Analysis Programs (BRAP)

Permitting Business Process Improvement (BPI) Project

OBJECTIVE

Re-establish a risk-based and familiarity-based approach for reviewing crop-trait-genotype combinations in permit applications

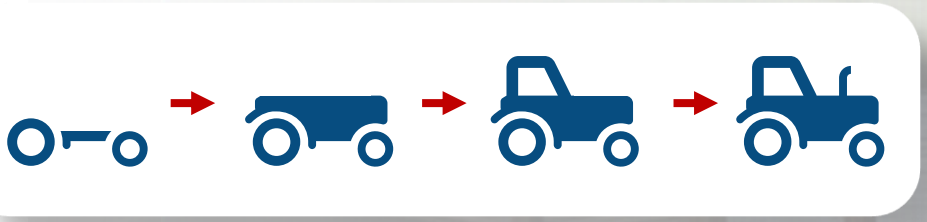
GOAL

Restore track record of predictable and timely issuance of permits and confidence in BRS' permitting process

MEASURABLE TARGETS

- Meet regulatory targets for average days to issue permits
- Issue 95% of BRS permits within the regulatory timeframe

FY 24 BPI Process Improvements



- Streamlined APHIS eFile permit review workflow
- Implemented permitting flexibilities for import permits
- Increased consistency of permit reviews and communication with applicants
- Increased consistency of permit conditions

FY 24 BPI Outcomes

Exceeded BPI goal of issuing 95% of permit applications within regulatory timeframes

Permit Review Timeline

Reduced 3 hand-offs and eliminated 5.5 days

Average Days to Issuance

Reduced by 9 days for movements and held steady for releases

Permits Issued on Time

Increased by 9% for movements and 1% for releases

Challenge – Vacatur of Revised Regulations

Realign BRS permit and notification authorizations with original regulations

1

Walk back some BPI process improvements from FY 24

2

Resume accepting permit applications in APHIS eFile as soon as possible

3

Re-establish the notification process for crops and traits that BRS has extensive experience with

Challenge Met – Permits

- Realigned APHIS eFile permit workflow with original regulations
- Realigned permit conditions with original regulations
- Published revised permitting guidance documents on our website
- Accepted permit applications in APHIS eFile starting on Dec 19, 2024

Challenge Met – Notifications

- Created temporary notification application pathway in APHIS eFile
- Published revised notification guidance documents on our website
- Accepted notification applications in APHIS eFile starting on Feb 7, 2025
- Established notification review team & framework for documenting decisions

Notifications Overview

Type	Notifications	Permits
Interstate Movement	10	60
Import	30	60
IMR/Release	30	120

- Codified at 7 CFR § 340.3
- Plants must meet 6 eligibility criteria and align with 6 performance standards
- Reduced regulatory timeframes (days) compared to permits

Notifications Overview

Notification application was established in APHIS eFile on June 13, 2025

Do you import, transport, or release into the environment genetically engineered organisms?

Check out our Biotechnology Regulatory Services (BRS) Pre-Application Questionnaire.

Notification Workflow

Authorization Progress

Application Review → State Review → Issue Acknowledgement

BRS can convert notification applications that do not meet qualifications into permit applications

Permit Workflow

Authorization Progress

Application Review → Conditions Collaboration → State Review → Permit Package

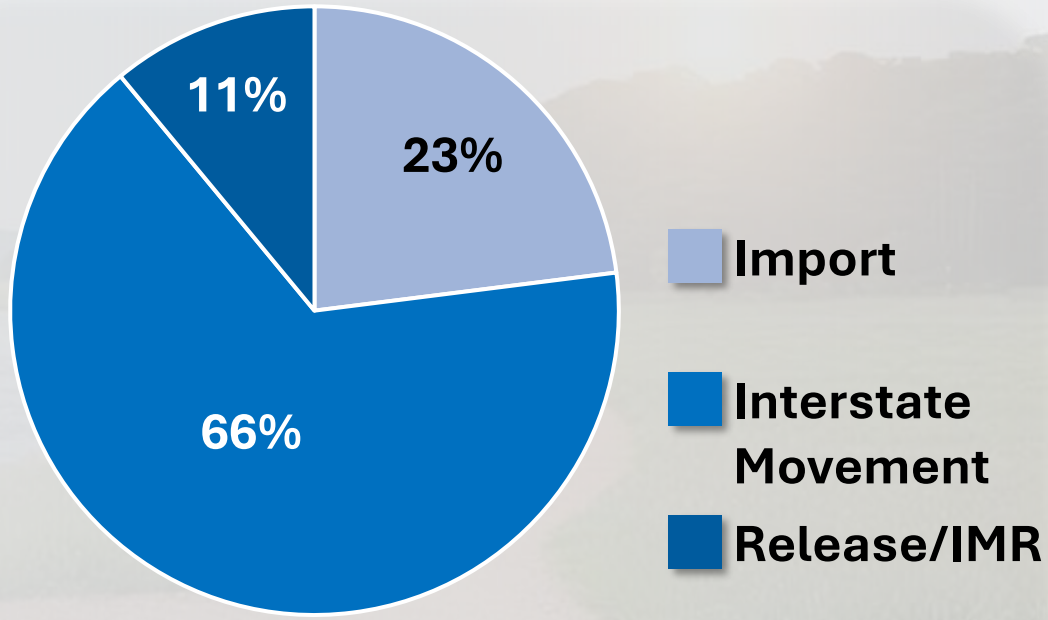
Additional BPI Accomplishments

- Aligned authorization review processes with original regulations
- Developed standardized permit conditions for cotton and tomato
- Examined PMPI and invertebrate permit review processes for potential efficiency gains

Microbe Permits

Supplemental Permit Conditions

- Standardized conditions for import and interstate movement permits
  - ❑ All greenhouse use requests require an APHIS inspection → BRS inspection or PPQ inspection (within the last 3 years)
  - ❑ Inspection must apply to the organism
- Worked to standardize conditions for release permits



Microbe Permits

Kingdom-Level High-Throughput Permits

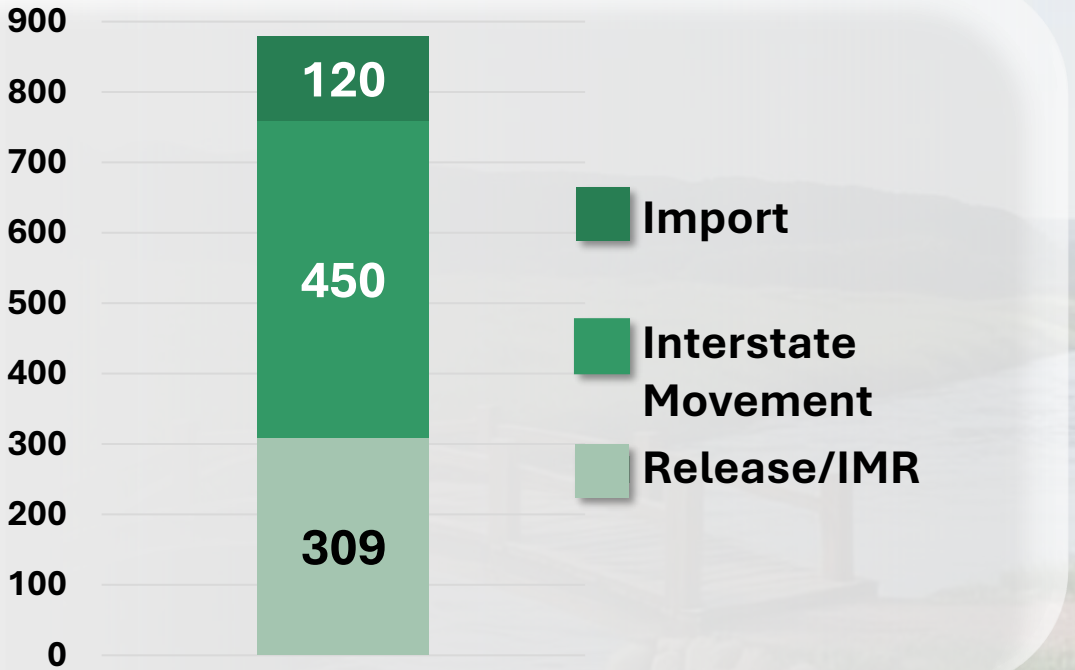
- Authorize interstate movement only
- Do not authorize greenhouse use
- Require applicants to list each microorganism (genus and species)
- Require applicants to list at least one construct
- Have specific reporting requirements

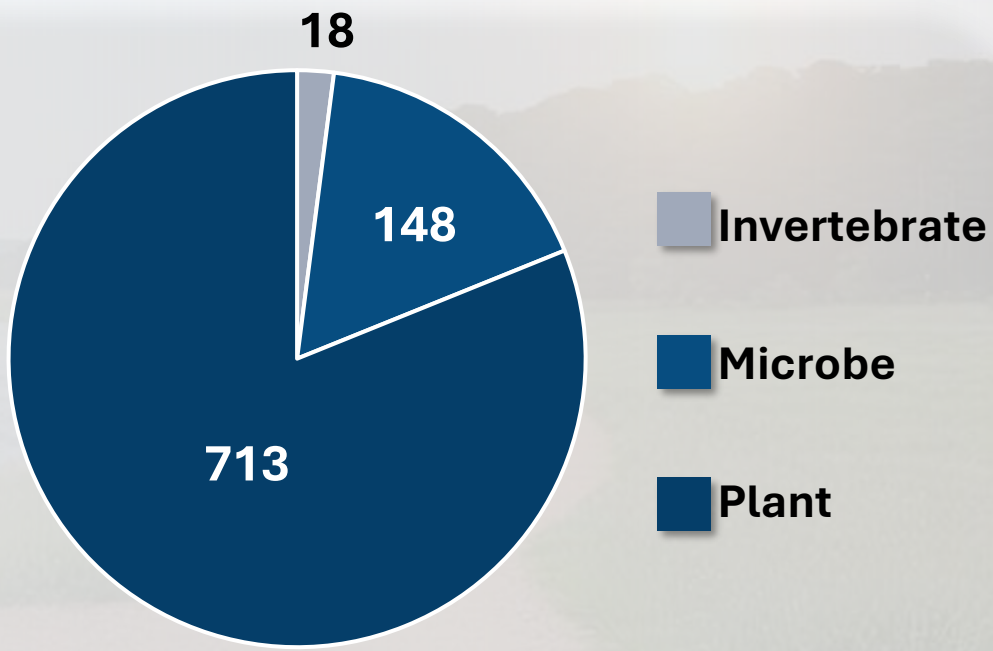
Updated Permit User Guide:

https://www.aphis.usda.gov/sites/default/files/permit-guidance.pdf

FY 25 Results – Permits

Issued 879 permits in FY 25

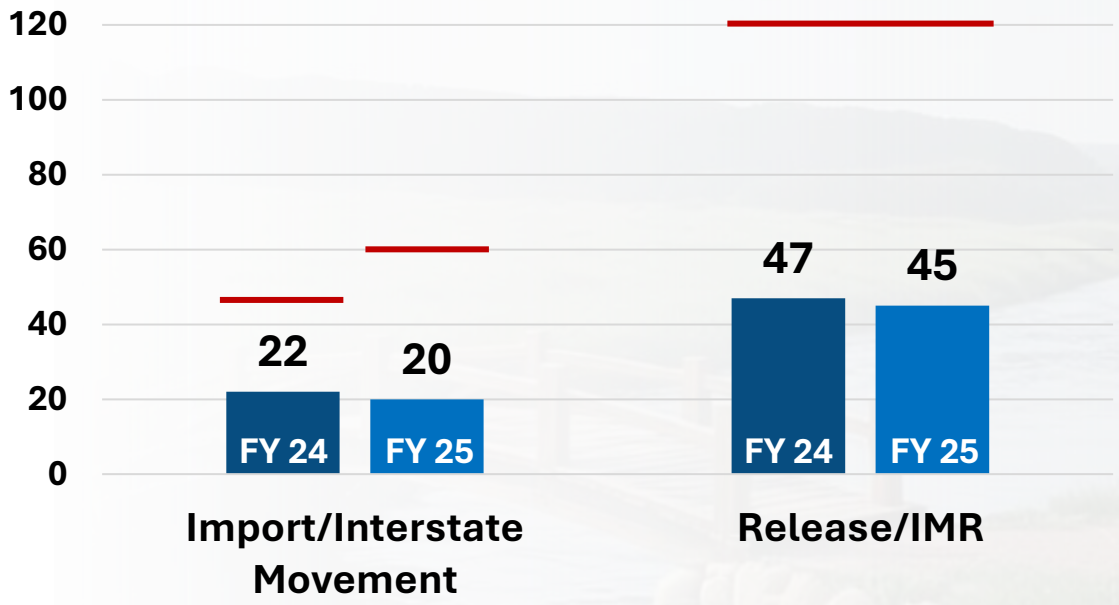




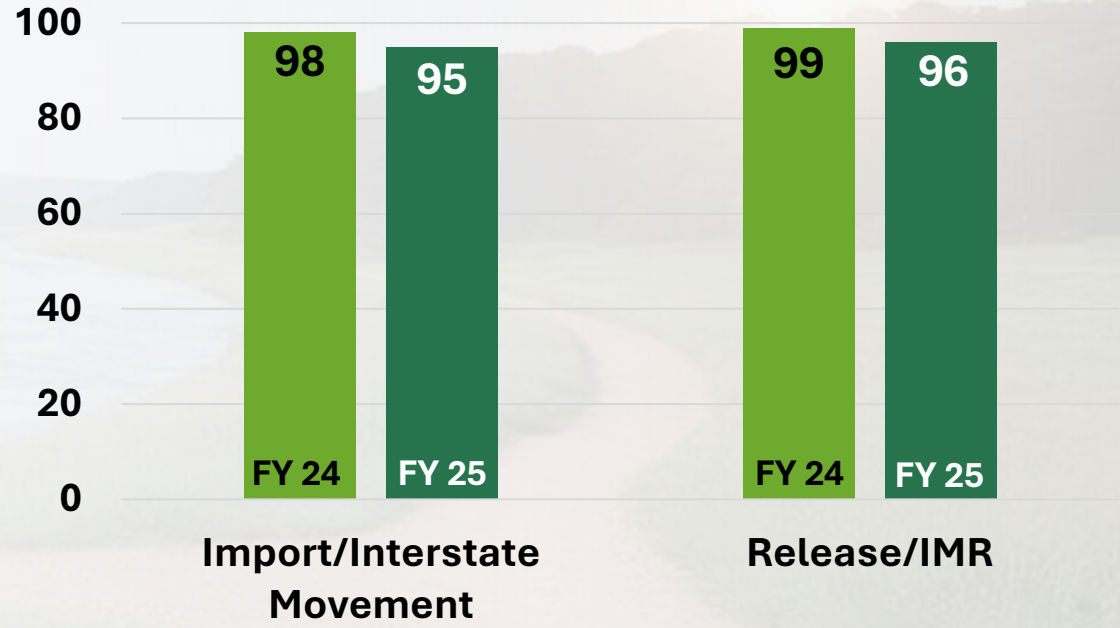
FY 25 Results – Permits

Exceeded BPI goal of issuing 95% of permit applications within regulatory timeframes

Average Number of Days to Process Permits Technical Completeness to Issuance

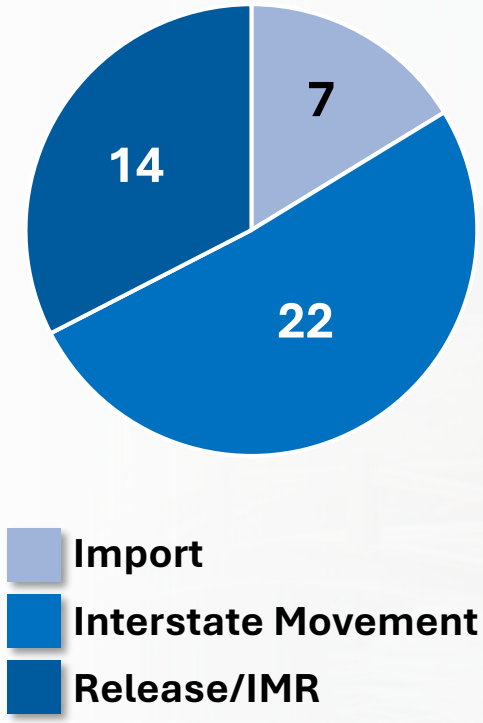


Percentage of Permits Issued within Regulatory Timeframes

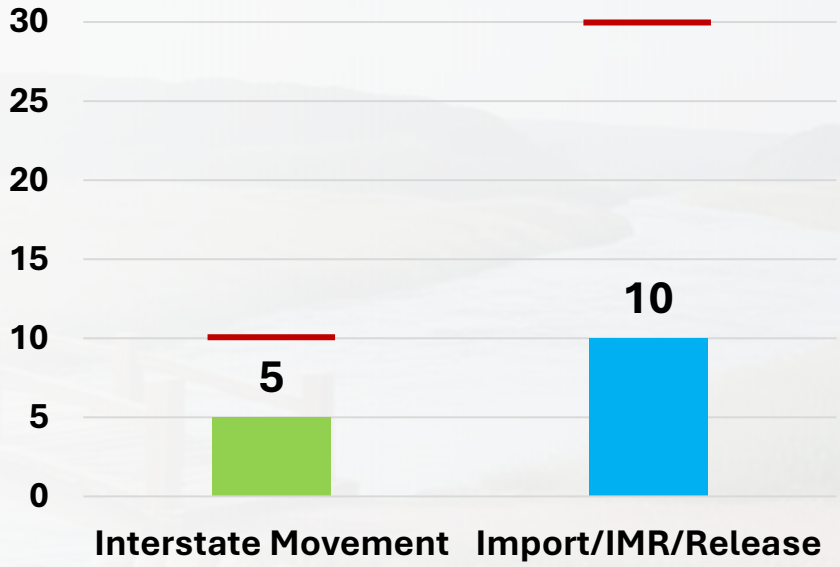


FY 25 Results – Notifications

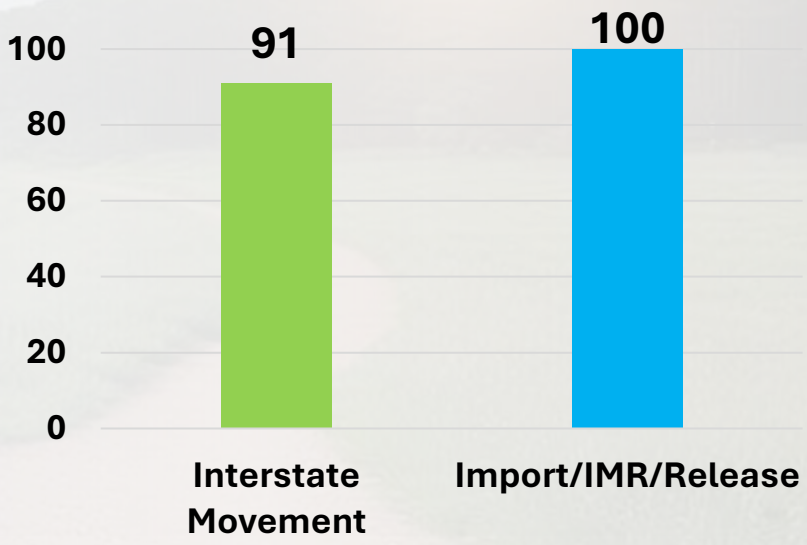
Acknowledged 43 notifications in FY 25



Average Number of Days to Process Notifications Technical Completeness to Issuance



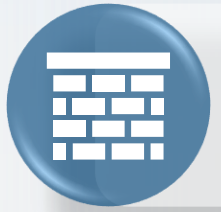
Percentage of Notifications Acknowledged within Regulatory Timeframes



Next Steps

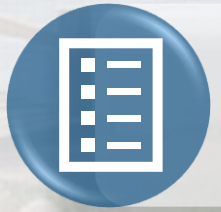
Use the BPI Project as a foundation for continued success

Finish documenting BPI project process improvements and accomplishments



Build on efficiency gains going forward

Measure and monitor impacts of implemented initiatives and course correct as needed



Continue to implement process improvements that increase efficiency and consistency

FY 26 Objectives

Increase the consistency and timeliness of authorization reviews

Ensure more interstate movement notification applications are acknowledged on time

Streamline review processes for PMPI and invertebrate authorizations

Update PMPI and invertebrate information in external guidance documents

Continue to improve communication with applicants and stakeholders

For More Information

BRS Website:

https://www.aphis.usda.gov/biotechnology

APHIS eFile:

https://efile.aphis.usda.gov/s/

Permits Email Address:

BRSPermits@usda.gov

Orig. Regulations (2025):

https://www.ecfr.gov/current/title-7/subtitle-B/chapter-III/part-340

Permit User Guide:

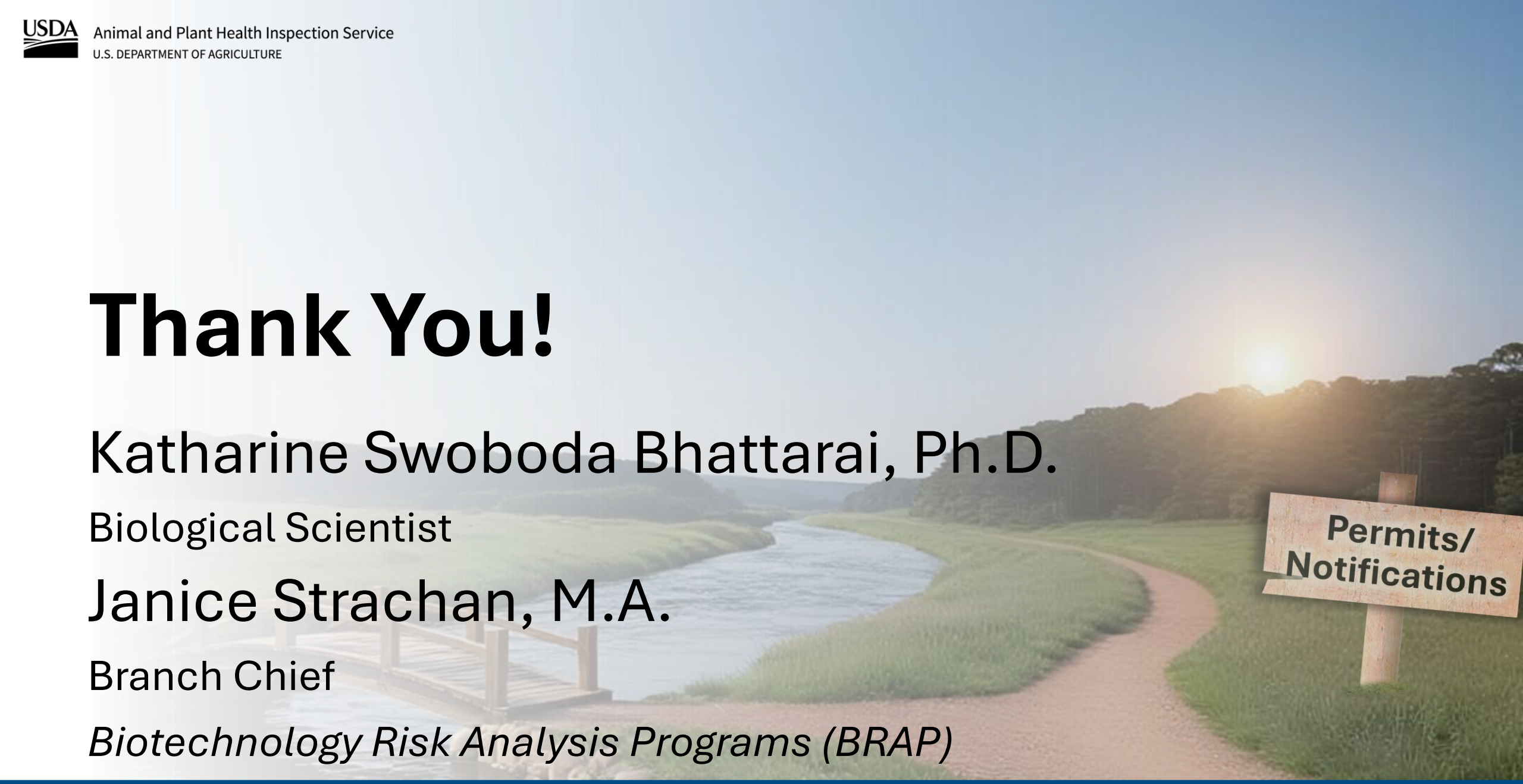
https://www.aphis.usda.gov/sites/default/files/permit-guidance.pdf

Notification User Guide:

https://www.aphis.usda.gov/sites/default/files/notification-guidance.pdf

Thank You!

Katharine Swoboda Bhattarai, Ph.D.
Biological Scientist
Janice Strachan, M.A.
Branch Chief
Biotechnology Risk Analysis Programs (BRAP)



Microbe Efforts

Alan Pearson, Ph.D.

BRS Assistant Deputy Administrator

John Sagle

PPQ PEIP Assistant Deputy Administrator

Plant Exclusion & Import Programs (PEIP)


John Sagle, PPQ

New Microbial Biotechnologies

- **Drivers:** Genomics, genome editing, automation, AI – driven discovery and development; biotechnology as a national priority.
- **Uses:** Plant health and nutrition (pesticides, fertilizers, biostimulants), food, fuels, chemicals, materials, etc.
- **Impact:** Increase in APHIS permit applications

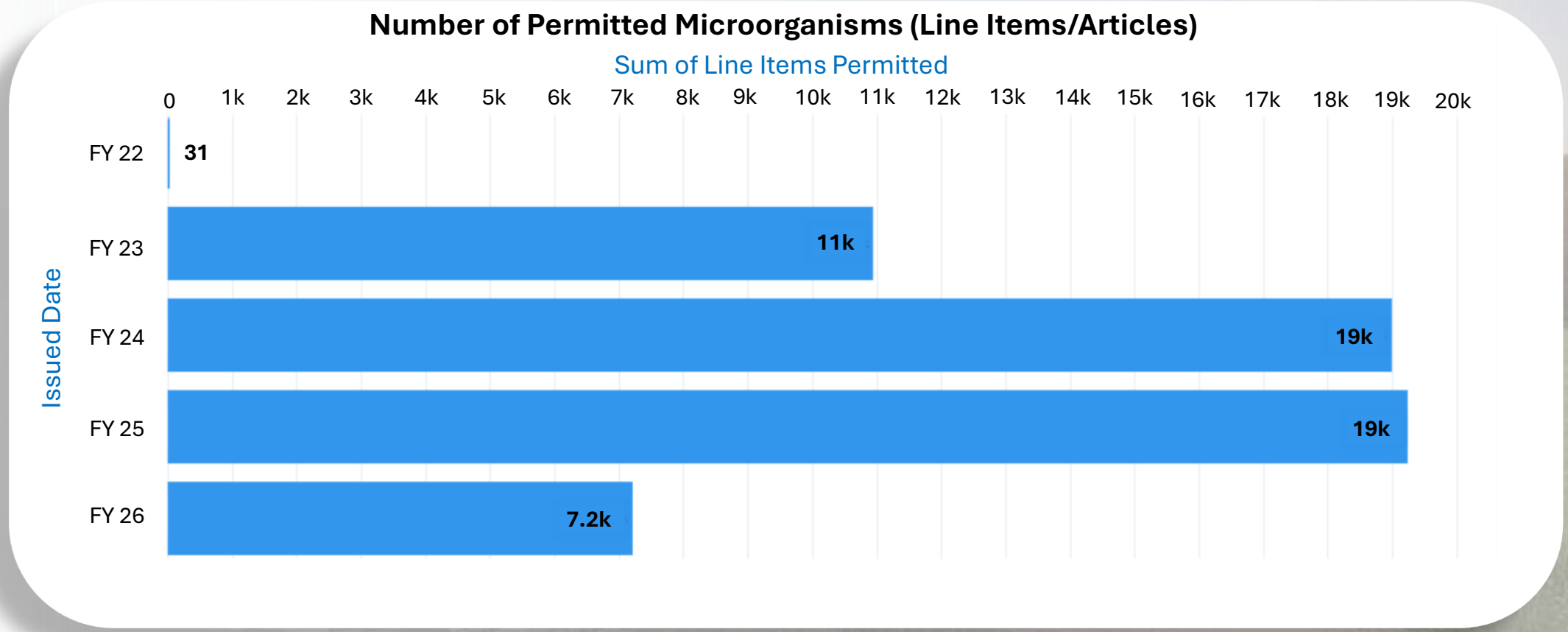
BRS Permitted Microorganisms

Over 4,600 unique modified microorganisms permitted

	FY 21	FY 22	FY 23	FY 24	FY 25
Movement	65	446	1551	2654	2151
Release		14	38	67	283
Total	65	460	1589	2721	2434

PPQ Permitted Microorganisms

Over 7,300 unique microorganisms evaluated and permitted



Concerns We've Heard

BRS and PPQ lack a harmonized approach to microbe regulation for plant health

There are no clear, predictable pathways for *commercialization* of modified microbes regulated by BRS

BRS permit conditions for field releases of modified microbes are not risk-based and fit-for-purpose

Developing a Harmonized APHIS Framework for Microbe Regulation

Established the core principle for the framework.

Established the foundation of APHIS's harmonized framework.

Jointly defined scientific criteria to assess microbes under a harmonized framework.

Core Principle

For an organism to be regulated as a plant pest, there must be demonstrated evidence or a plausible hypothesis that the organism can cause direct or indirect harm to plants.

Examples of Microbes Regulated by APHIS

The foundation of the harmonized framework and some of the key scientific criteria

Plant Pathogens

- A microbe is regulated if there is evidence demonstrating the microbe's ability to infect and cause disease in a plant; even a single credible report indicating pathogenic potential could meet the threshold.

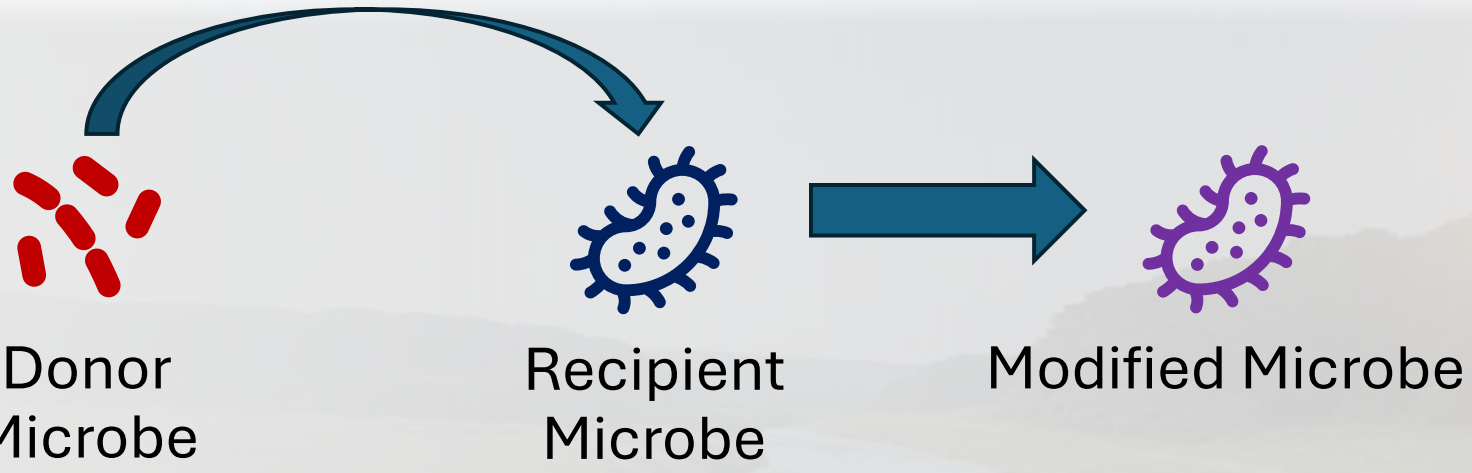
Insecticidal Microbes

- A microbe is regulated if there is evidence that it harms or could plausibly harm a beneficial insect and could lead to plant harm.

Anti-microbial Microbes

- A microbe is regulated when evidence indicates its antimicrobial properties could plausibly lead to indirect plant harm; the mere production of antimicrobial compounds does not meet that threshold.

How Will This Framework Apply to Modified Microbes?



If either the donor microbe or the recipient microbe are known to or could plausibly harm plants, then the modified microbe would be subject to regulation.

Advancing the Microbial Harmonization Framework: Future Directions and Implementation

Finalize scientific criteria

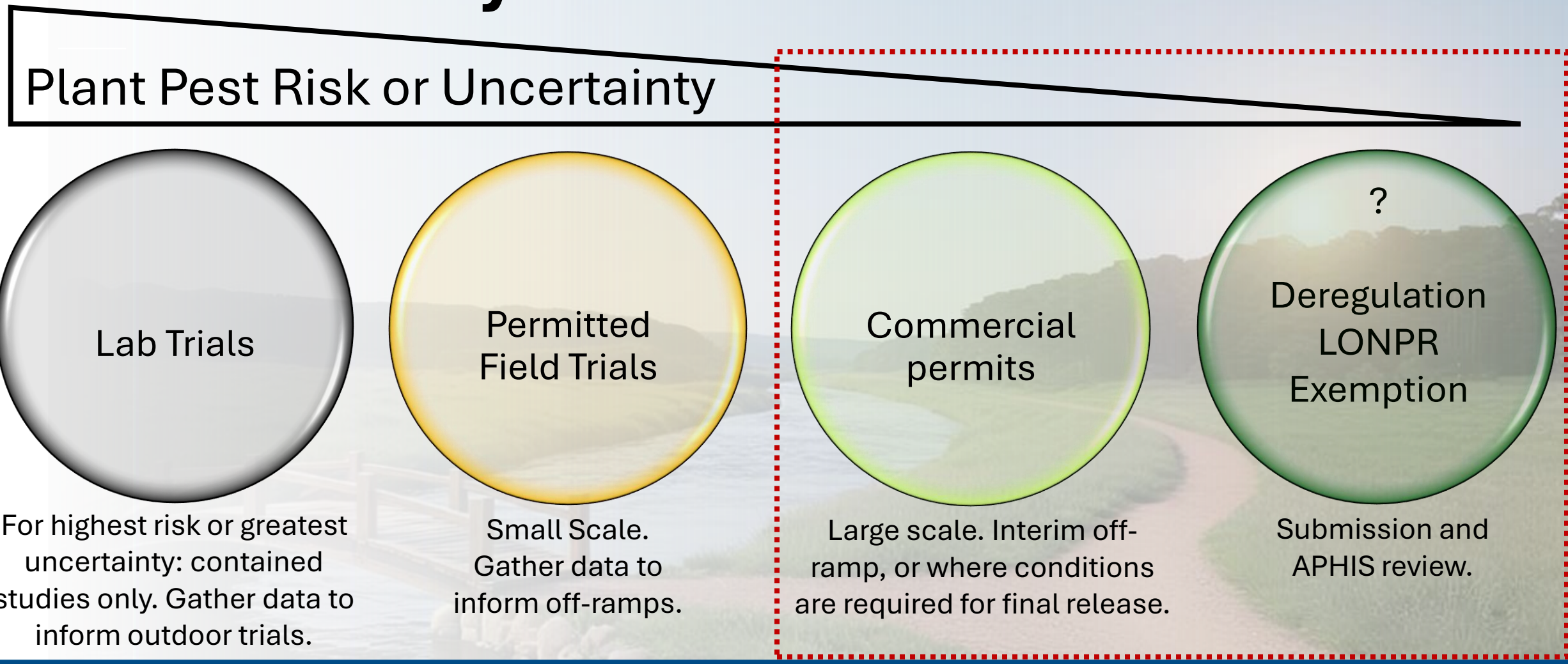
Implement harmonized framework

Stakeholder engagement and guidance

Regulated Microbes: Plant Pest Risk Spectrum

BRS is currently discussing different criteria for categorizing microbes based on levels of plant pest risk

Pathways to Commercialization



For highest risk or greatest uncertainty: contained studies only. Gather data to inform outdoor trials.

Small Scale. Gather data to inform off-ramps.

Large scale. Interim off-ramp, or where conditions are required for final release.

Submission and APHIS review.

Risk and Performance Based Permitting Conditions for Microbe Releases

- FY 26 priority: Establish a set of standardized but customizable performance-based conditions for environmental releases
- More stringent → less stringent based on data and experience
- Examples:
  - Eliminate isolation zone and/or reduce perimeter zone when appropriate
  - Change approach to post-trial monitoring
  - Change approach to devitalization

Permitting Next Steps

- ❑ Update microbe permit authorization workflows
- ❑ Update pre-authorization facility inspection worksheets
- ❑ Train additional inspectors
- ❑ Update the Permit User Guide
- ❑ Develop approach and conditions for commercial permits

Thank You!

Alan Pearson, Ph.D.

BRS Assistant Deputy Administrator

John Sagle

PPQ PEIP Assistant Deputy Administrator

Plant Exclusion & Import Programs (PEIP)

Regulatory Operations Update

Doug Grant, Ph.D.

Director

Regulatory Operations Programs (ROP)

Outline

- Staffing Changes
- Inspection Data
- Compliance Outcomes
- Overview of Noncompliance

ROP Staffing Updates

FY 25 and FY 26 changes:

- Dr. Phillip Mason (WCAB BC) retired in April
- Mr. Nathaniel Yates (CEEB BC) retired in January
- Ms. Heather Brown acting WCB BC (as of Feb. 2, 2026)

Regulatory Operations Programs (ROP)

FY 25 Restructuring

FY 24 - three branches

Now we have two branches

Compliance Inspection Goals

Compliance Oversight

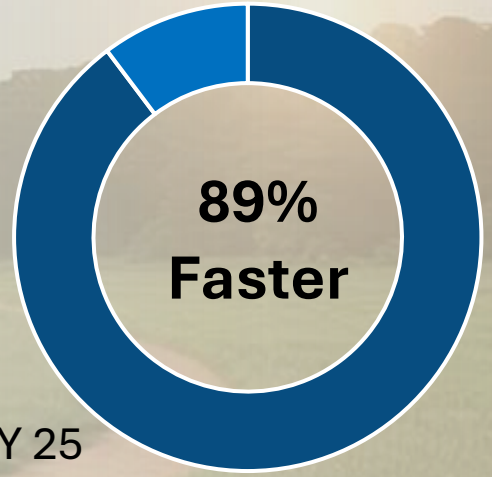
Target: **Complete 500 compliance inspections** and **issue 90% of noncompliance notices within 14 days** of completing an inspection.

Target Exceeded

- Completed 505 inspections. Above target by 5 inspections of the 500.
- **Issued** 93% of noncompliance notices within 14 days of inspection.

Improved Service Delivery

Notices of Noncompliance



FY 25 Average: 11 Days

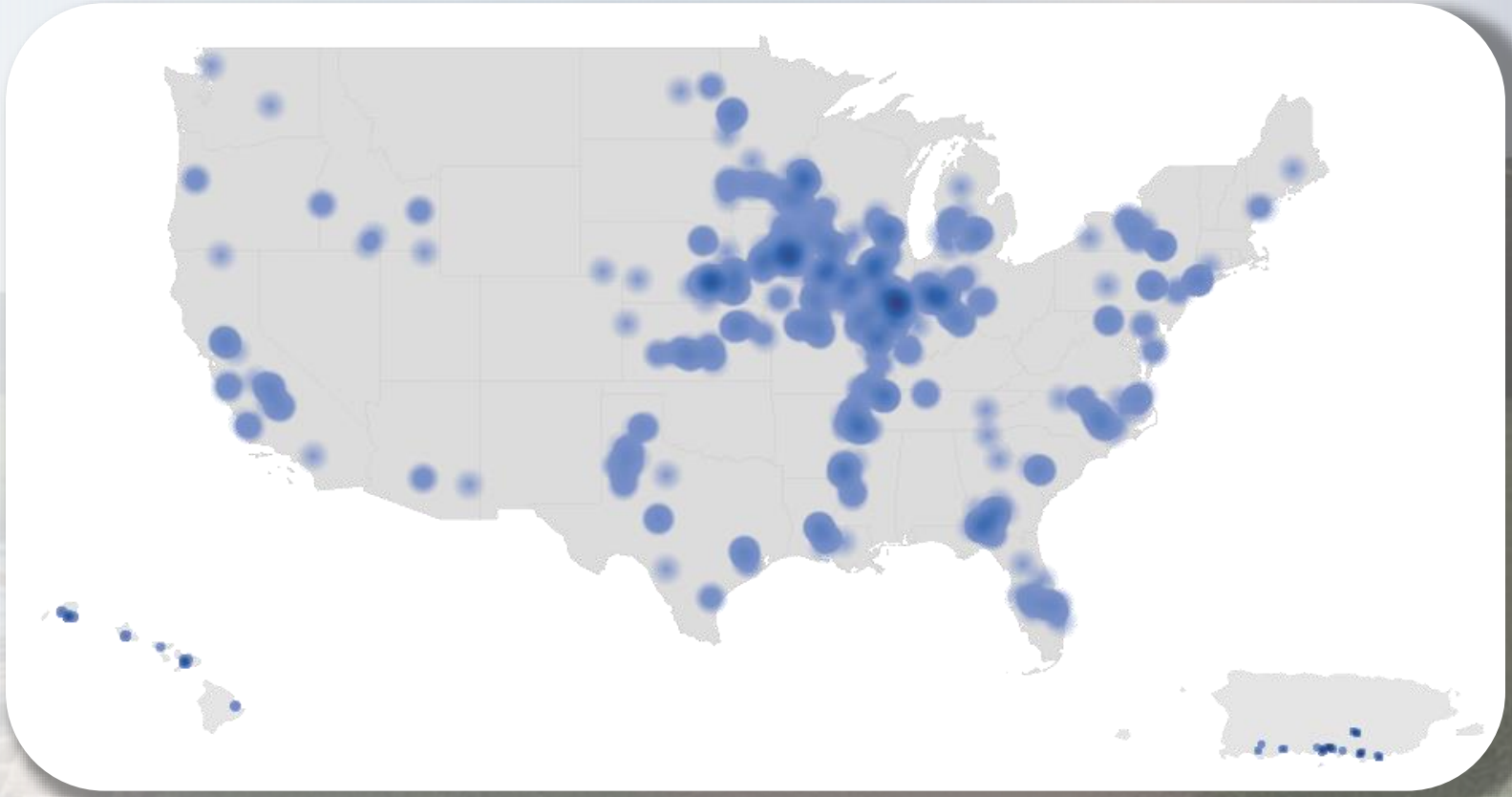
Permitting Statistics

- Number of permits and release sites authorized FY 21 – FY 25
- 4,319 Release Sites Authorized in FY 25

Fiscal Year	# of Permits Issued	# of Release Sites Authorized
FY 25 (permits + notifications)	922	4,319
FY 24	874	5,058
FY 23	783	4,357
FY 22	757	4,431
FY 21 (permits + notifications)	723	2,726

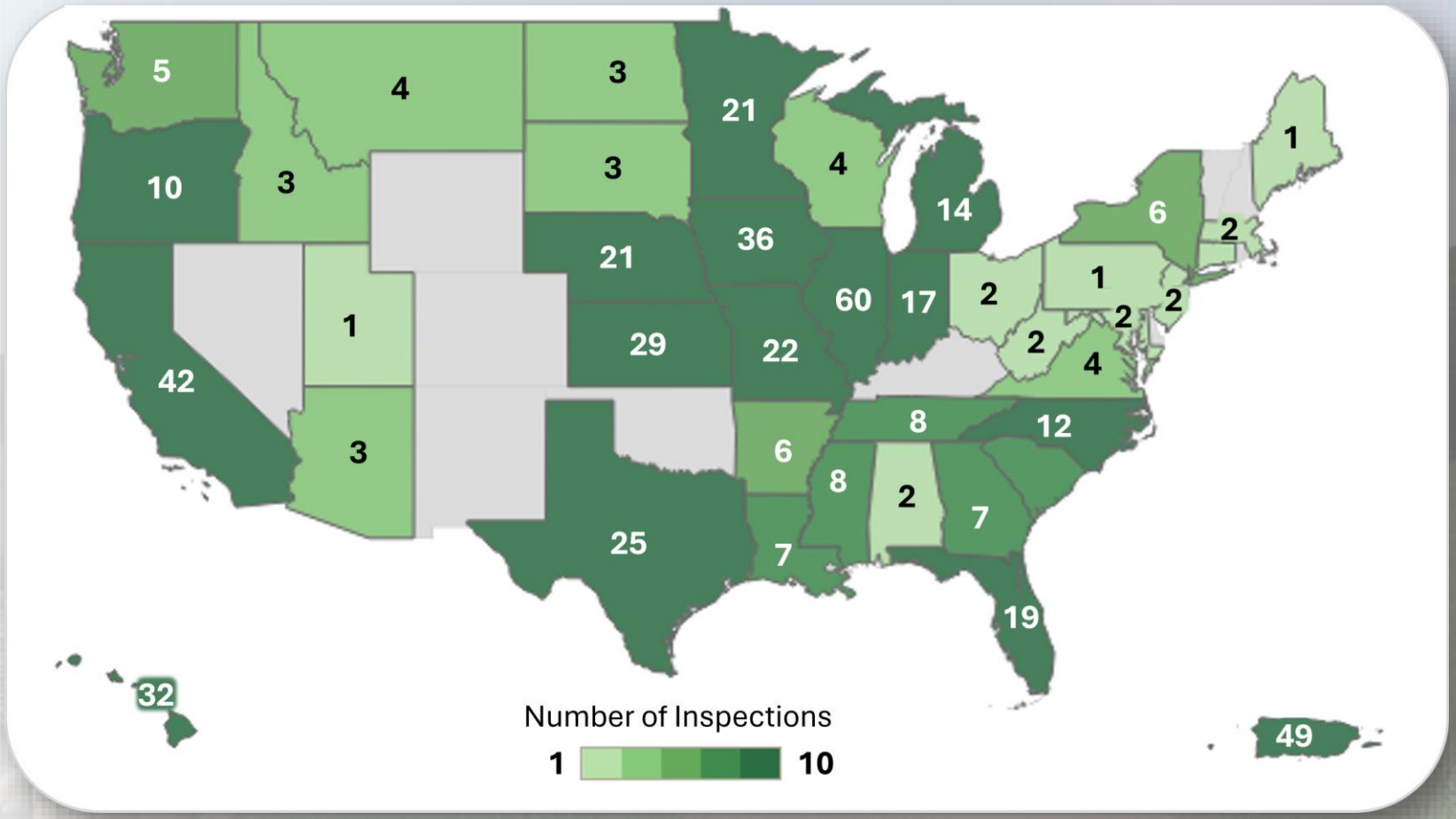
FY 25 Density Map of Unique Locations Planted

Total Unique Planting Locations = 848



FY 25 Inspections by State/Territory

Total Inspections Conducted = 505



FY 25 BRS Inspections by Quarter

Quarter	New	Cumulative
1	71	71
2	89	160
3	149	309
4	196	505

FY 25 Compliance Statistics

Performed **244** compliance evaluations from all sources (inspections, self-reports, records reviews)

128 Notices of Noncompliance sent

45 Resulting from Inspections

In-Person Inspections

In FY 25, 92% of inspections were in-person (467 of 505)

FY 25 Compliance

- 91% of inspections were found to be compliant
- NONCs resulting from inspection avg days to issue = 11
- 93% issued within 14 days (85% in FY 24)

Compliance Agreements

BRS initiated 18 Compliance Agreements

Proactive Compliance Assessments

BRS completed 13 Proactive Compliance Assessments

FY 25 Most Common Noncompliance Issues

- **70** late or missing reports (**28** late planting/environmental release reports)
- **25** incomplete records (**9** equipment cleaning, **8** in-season monitoring, **7** volunteer monitoring)
- **24** unauthorized movement and release (**11** unauthorized releases/areas not authorized, **6** unauthorized movements)
- **22** missing records or reports (**7** missing equipment cleaning records)

Resources

ROP updated the *Guide for Submitting Data for Reports and Notices in APHIS eFile* to include information requirements for Notifications and reflect regulation changes to 7 CFR 340 (2019) for Permits post-vacatur.

The final updated Guide was published March 21, 2025

https://www.aphis.usda.gov/sites/default/files/report-and-notices-guide.pdf

Thank You!

Doug Grant, Ph.D.

Director

Regulatory Operations Programs (ROP)

International Engagement

Suma Chakravarthy, Ph.D.

Science Advisor

Office of the Deputy Administrator

Presentations on APHIS Regulations

- Continue to build and maintain international coalitions and relations
- Highlight the importance of science and risk-based regulations, efficiency, transparency, and stakeholder engagements
- Provide messaging on the flexibility of USDA regulations and continued approvals post-vacatur in December 2024
- Improve global understanding of the USDA position on products of genome editing

Presentations on APHIS Regulations

US-Korea August 2025

US-Japan August 2025

Work with interagency partners such as EPA, FDA, State,
USDA-FAS and USDA-APHIS-IS to coordinate these engagements

Multilateral Fora and Organizations

Organization for Economic Cooperation and Development (OECD) Working Party for the Harmonization of Regulatory Oversight in Biotechnology (WP-HROB) Meeting

- Produce technical documents to support the assessment of agricultural biotechnology products; 38 member countries
- Lead the USG delegation and participated in 7 ongoing OECD projects

International Society for Biosafety Research (ISBR) 17th Symposium

- Served on the scientific planning committee

OECD poster at ISBR

Multilateral Fora and Organizations

High-Level Policy Dialogue on Agricultural Biotechnology (HLPDAB) at the Asia-Pacific Economic Cooperation (APEC) Meeting (Korea, attended by 16 APEC economies and 3 non-APEC economies)

Cartagena Protocol COP-MOP Meeting (Colombia)

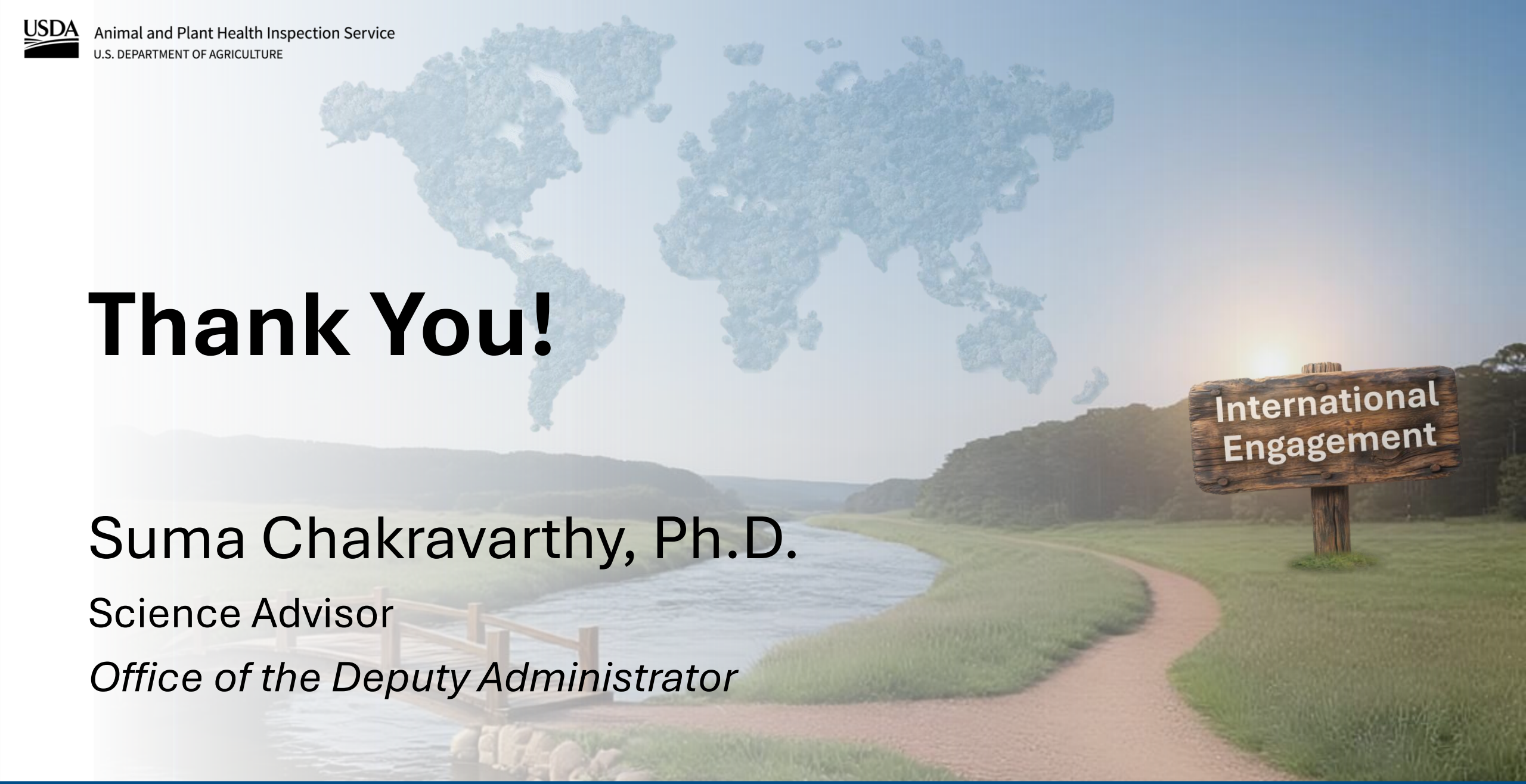
HLPDAB at APEC August 2025

Technical Expertise on Trade Agreements

Supported United States Trade Representative and APHIS-International Services efforts in:

- Establishing trade agreements with 12 countries
- Reviewing WTO accession documents for 3 countries

Thank You!



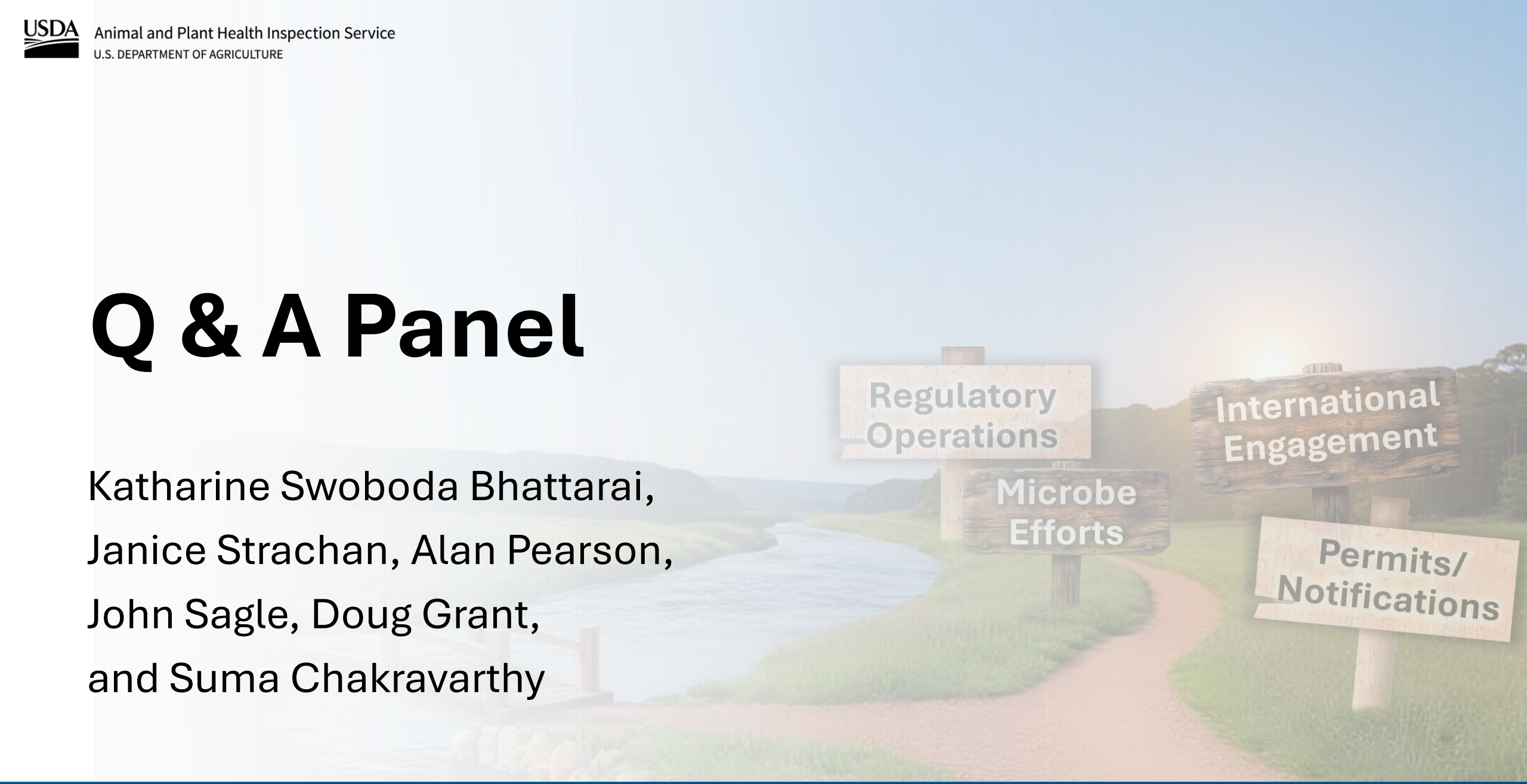
Suma Chakravarthy, Ph.D.

Science Advisor

Office of the Deputy Administrator

Q & A Panel

Katharine Swoboda Bhattarai,
Janice Strachan, Alan Pearson,
John Sagle, Doug Grant,
and Suma Chakravarthy



USDA Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

Thank you for attending!

BIOTECHNOLOGY REGULATORY SERVICES