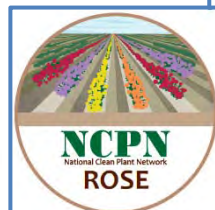
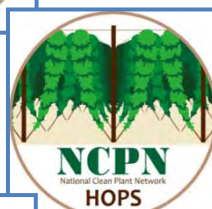
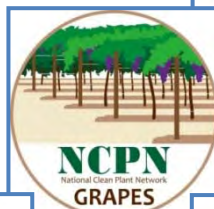




United States Department of Agriculture

US Farm Bill 2014 Section 10007(e) National Clean Plant Network (NCPN)

NCPN Program Update Spring 2017



*Ms. Tammy Kolt
Dr. David R. Prokrym
Mr. Erich S. Rudyj
NCPN Management Team*

*USDA/APHIS/PPQ
Science and Technology
National Clean Plant Network (NCPN)*

Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | Plant Protection and Quarantine



United States Department of Agriculture



The National Clean Plant Network (NCPN)

*NCPN is a ‘**Network**’ of clean plant centers located in U.S. gov’t agencies and universities with the mission of **diagnosing** plant pathogens in ‘mother’ (nuclear stock) plants and in applying **therapy** to ‘clean’ these plants in preparation for their ‘**increase**’ and use by industry.*

*Centers already
existed
NCPN brings
them together!*



Safeguarding America’s Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | Plant Protection and Quarantine

June 2017



United States Department of Agriculture



National Clean Plant Network (NCPN) – Background and Purpose

NCPN ‘Mission’

The NCPN produces and distributes asexually propagated plant material free of targeted plant pathogens and pests to ensure the global competitiveness of specialty crop producers and protect the environment.

NCPN Core Activities

- Networking and Governance
- Plant Introduction
- Diagnostics
- Therapeutics
- Foundation Plantings

NCPN Establishment

Law: Farm Bill 2008/2014



Collaboration: Consult with States, Industry, and Universities

Efficiencies: Leverage Capacities with Existing Clean Plant Centers; Federal, State, and Universities

Funding – Important!

“A Base of Not Less Than \$5,000,000 Each Year”

Safeguarding America’s Agricultural and Natural Resources

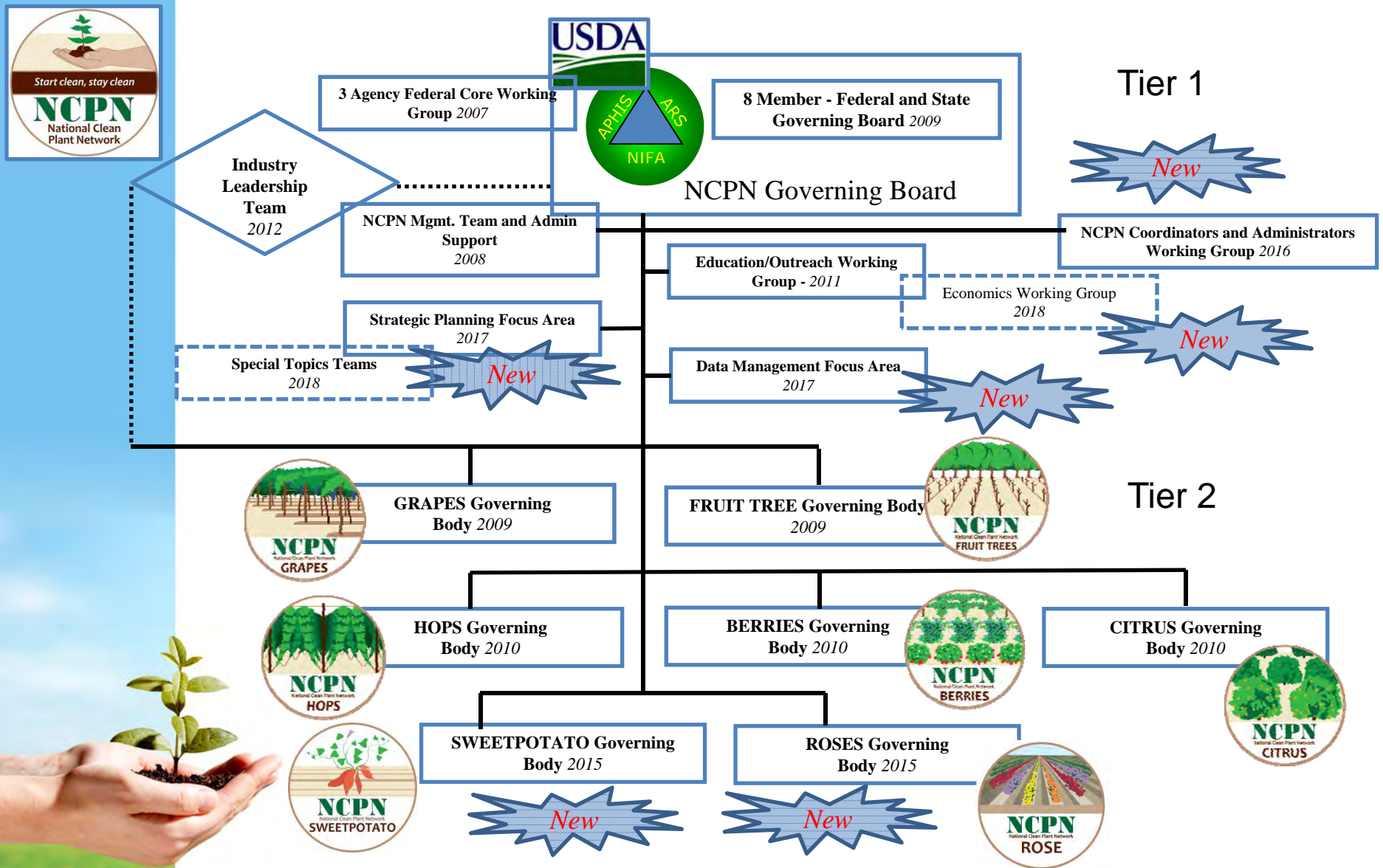
United States Department of Agriculture | Animal and Plant Health Inspection Service | Plant Protection and Quarantine

June 2017



United States Department of Agriculture

NCPN – Program Governance



Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | Plant Protection and Quarantine

June 2017



NCPN – So How Does it All Fit Together?

- NCPN – ‘National’
 - National Networking, Coordination, Balance, and Visibility
 - Forum for all Relevant Critical Discussions
 - Organize Special Committees and Working Groups
 - Resourcing >>> Nat’l Funding Mechanism
- NCPN – Tier 2
 - Platform to Bring all Players to the Table
 - Research, Regulatory, Educators, and Industry
 - Charters, Membership, Governance, Collaboration
 - Identification, Prioritization, and Advocacy for Crop Needs
- Clean Plant Centers
 - Diagnostics, Therapeutics, and Foundations
 - Service Delivery to Stakeholders
 - Recipient of National Funds





United States Department of Agriculture



NCPN Supported Clean Plant Initiatives - National

38 Collaborating Programs ‘TODAY’ located at 27 Centers in 19 States through 2017
Serving the Entire United States



Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | Plant Protection and Quarantine

June 2017



United States Department of Agriculture



NCPN – at the ICVF

A number of ICVF attendees this year
participating in Thessaloniki
are also associated
with NCPN and NCPN supported laboratories
serving as clean plant center Directors,
Researchers, Program Coordinators
and in other capacities.





NCPN – How the Program Supports Stakeholders

- Access to plants otherwise prohibited entry into USA
- Reduces industry business risk and regulatory safety risk
- Increased likelihood of having ‘clean’ plants
- Alternative to high-value germplasm destruction
- Supports industry trade
- Non-regulatory solution to plant pathogen mitigation
- New beginnings --- Revitalize, renew, replant
- Forum to bring stakeholders together – broad discussions
- Collaborative cadre of cooperating scientists and stakeholders
- Linkages to ‘allied’ programs (e.g. PEQ, nursery certification)





United States Department of Agriculture



NCPN

Cooperative Agreements Program



Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | Plant Protection and Quarantine

June 2017



NCPN - Cooperative Agreements Program 2008-2017

The 'Engine' for Collaboration

- Request for Applications (RFA)
 - Issued Annually
 - *Late Summer/Early Autumn – Open for 12 weeks*
 - Competitive Process
- Eligible Applicants:
 - Land-Grant Universities
 - Non Land-Grant Colleges of Agriculture
 - State Agricultural Experiment Stations
 - State or Local Governments
 - Federal Agencies
- Select Program Priorities:
 - Existing Facilities
 - Highly Restricted Crops
 - Formative Program 'Governing Bodies'
 - Service Activities – Industry Focused
 - Program Self-Sufficiency
- Funding Availability
 - Approximately \$5 million annually
- Proposal Reviews
 - 'Ad Hoc' Committees – Pre-Proposals
 - Governing Board – Final Proposals
- What's Supported?
 - Governance
 - Critical Staffing Needs
 - Equipment/Supplies
 - Infrastructure Improvements
 - Service Work
 - Diagnostics
 - Therapeutics
 - Foundations





United States Department of Agriculture

NCPN - Program Funding History – FY 2008-2017



Specialty Crop	Farm Bill 2008 NCPN 2008-2012 TOTAL	NCPN 2013 <i>Not Funded</i>	Farm Bill 2014 NCPN 2014-2017	Total Program Funding To Date	Future Anticipated Yearly Ceiling Per Crop Base ~ \$4.5-\$4.7m
Fruit Tree	\$ 5,073,462		\$ 4,568,850	\$ 9,642,312	20%-25% of available base
Grapes	\$ 7,980,699		\$ 5,106,167	\$ 13,086,866	20% -25% of available base
Hops	\$ 470,800		\$ 710,791	\$ 1,181,591	3%-5% of available base
Citrus	\$ 3,858,224		\$ 4,622,292	\$ 8,480,516	20%-25% of available base
Berries	\$ 1,959,507		\$ 1,994,910	\$ 3,954,417	10%-15% of available base
Sweet Potato	N/A		\$1,196,125	\$1,196,125	8%-10% of available base
Roses	N/A		\$ 690,397	\$ 690,397	5%-7% of available base
Other	\$ 263,179		\$ 96,033	\$359,212	TBD
	\$19,605,871		\$ 18,985,565	\$38,591,436	96.5% funding to cooperators



Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | Plant Protection and Quarantine

June 2017



United States Department of Agriculture



NCPN

Education/Outreach Initiative



Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | **Plant Protection and Quarantine**

June 2017



United States Department of Agriculture

NCPN — Education/Outreach Program Materials



Stakeholder Organized Web Presence

<http://nationalcleanplantnetwork.org/>

Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | Plant Protection and Quarantine



United States Department of Agriculture

Animal and Plant Health Inspection Service

2014 Farm Bill Section 10007:
Strengthening Our Nation's Ability To Safeguard
U.S. Specialty Crops, Agriculture,
and Natural Resources

Under the 2014 Farm Bill Section 10007, USDA's Animal and Plant Health Inspection Service offers funding for projects that protect plant health in the United States. Cooperators across the country put innovative ideas into action with Farm Bill funds to meet and overcome the extraordinary challenges we face today in safeguarding U.S. agriculture and the environment from harmful pests. This work is critical to the USDA mission on many fronts: keeping U.S. plants healthy, advancing science, promoting safe agricultural trade, enhancing the marketability of our country's products, and ultimately, making sure American agriculture and natural resources thrive.



June 2017



United States Department of Agriculture



NCPN

Strategic Planning



Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | **Plant Protection and Quarantine**

June 2017



NCPN – Strategic Planning 2017 – Some Early Thoughts

- **Core Planning Team** > Established – 10 Members plus support
- **Strategies** > How might we advance; add value?
- **Networking** > Expanding the ‘Networks’ connections
- **Crops** > Is there a need and room for more?
- **Program Quality** > The ‘Gold’ Standard – How Achieved?
- **Resources** > “... *a base of not less than \$5m.*”
- **Sustainability** > People, resources, plans
- **International** > Colleagues abroad; learning/teaching
- **Post Planning** > Action Teams / Next Steps

Breaking
News





United States Department of Agriculture



NCPN – FY 2017 Critical and Emerging Issues

- Strategic Planning – Nat'l/Intn'l
 - Developing the Plan *New*
 - Establishing Special Task Teams
 - Linkages Among the “Little N’s”
 - Foreign Clean Plant Collaboration
- Sustainability
 - Moderating Needs from a Source
 - Succession Planning
 - Resourcing – Role of Industry
- Hi Thruput Sequencing *New*
 - What it means for NCPN
 - Regulatory Connections - Permitting
- Education/Outreach
 - Visibility and Service
 - Economics
- Information/Data *New*
 - Needs and Efficiencies
- Nursery Programs *New*
 - Linkages to NCPN
 - Service to Industry
- Center Enhancements *New*
 - SOP's
 - Program Reviews
 - QA/QC/Certification

Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | Plant Protection and Quarantine

June 2017



United States Department of Agriculture



NCPN Data/Information Management



Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | Plant Protection and Quarantine

June 2017



United States Department of Agriculture

NCPN Special Topics:



- **Information Management**
- Education/Outreach
- High-Throughput Sequencing
- Nursery Certification
- Economic Studies
- Permits
- Material Retention
- Public vs Proprietary Material
- Export
- Succession Management

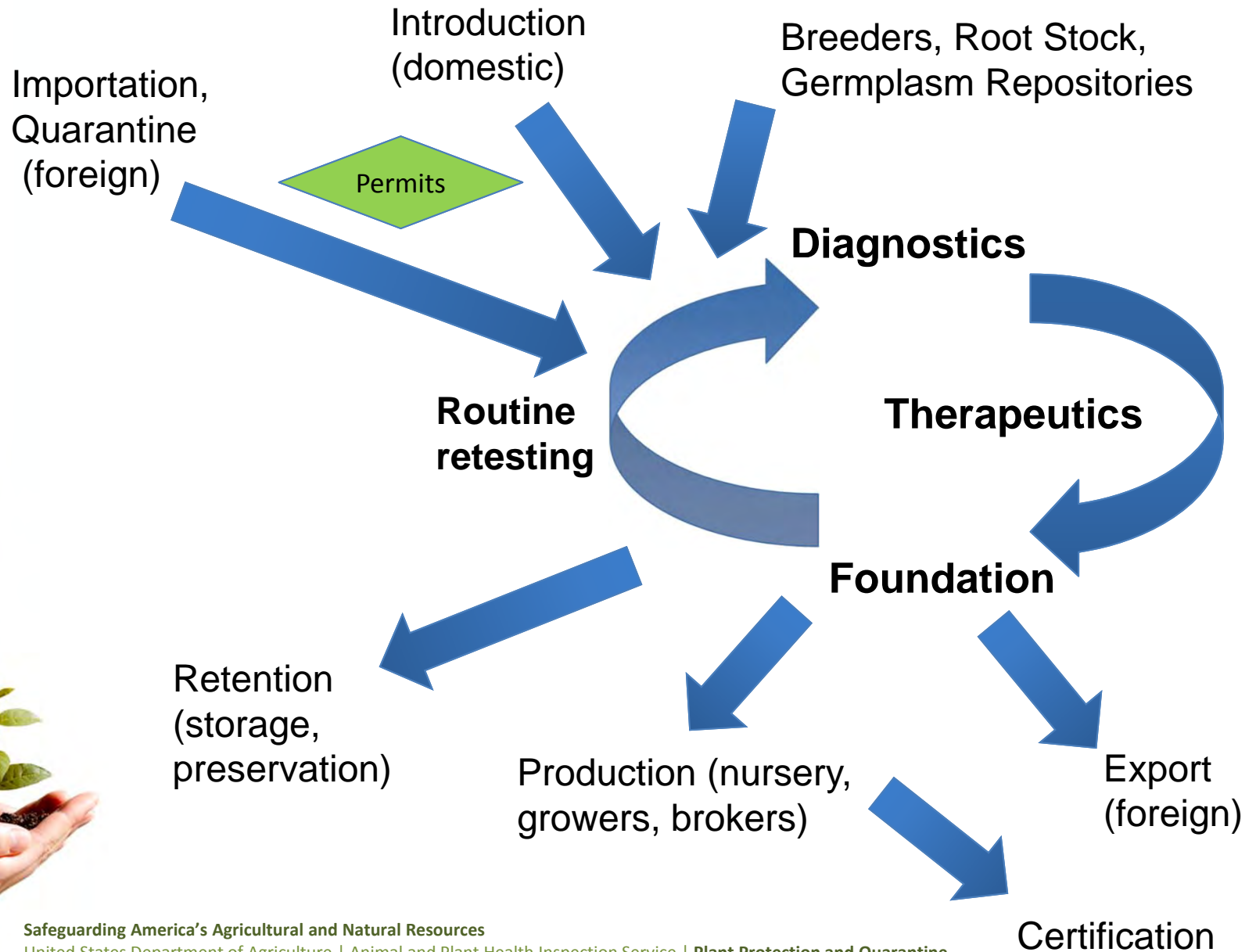


Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | Plant Protection and Quarantine

June 2017

Movement of plant material





United States Department of Agriculture

Information Management

**INTRODUCTION,
IMPORTATION,
GERMPLASM**

Permits

DNA
Sequencing

Public vs
Proprietary
Material

Material
Retention

NETWORK

Education
Outreach

Economic
Studies

Nursery
Certification

**PRODUCTION,
EXPORT**



Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | Plant Protection and Quarantine

June 2017



United States Department of Agriculture



NCPN Next Generation Sequencing (NGS)* Some Observations

*** Also called:**

- High Throughput Sequencing
- Massively Parallel
- Deep Sequencing



Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | Plant Protection and Quarantine

June 2017



NCPN — Next Generation Sequencing – Observations

HTS - Benefits

- Powerful Diagnostics Tool
- Sequencing > Millions of Fragments
- Increased ID Resolution
- Short Turn-Around Time
- Low Cost > Getting Lower Rapidly
- Can Detect the Previously Un-Detectable
- Illuminates Novel Sequences
- Can Detect Unknowns

HTS – Some Discussion Points

- Process to Approve/Validate Methods?
- International Policies Regarding NGS?
- Diagnostics ---- In-House vs Contracting Out > Pros/Cons?
- Bioinformatics > Centralized or Decentralized?
- Regulatory Decision-Making and Keeping Up With the Science?
- NGS Costs/Benefits?
- Getting Industry Support?
- Role of NGS in Certification and Quarantine Programs?





United States Department of Agriculture



Becoming a Network Lessons Learned



Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | Plant Protection and Quarantine

June 2017



NCPN — Lessons Learned in Becoming a Network

1. Gather Stakeholders – Establish a Program Strategic Plan
2. ID and Secure Program Resources and Funding
3. Clearly Define Program Boundaries
4. Recognize the Needs of Industry as your Primary Goal
5. Focus First on Becoming a Network with Governance
6. Be Inclusive; Researchers, Regulators, Educators, Industry
7. Focus also on the Constituent Parts; the Centers/Programs
8. Champion Non-Regulatory Solutions
9. Serve as a Forum for Wide-Ranging Discussions
10. Become a Bridge to Programs that Impact Clean Plant Initiatives
11. Handle Basic Needs Initially
12. Be Positive and Inspire
13. Reach Out to Allied Programs and Expand Linkages
14. Address Advanced Aspirations Later
15. Review and Revise the Program and the Strategic Plan



United States Department of Agriculture



NCPN

Program 'Deliverables'



Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | **Plant Protection and Quarantine**

June 2017



NCPN – Crops ‘Deliverables’

- **Fruit Trees** (Stone and Pome Fruits)
 - Maintain about 2,250 clean fruit tree accessions in foundations that have delivered more than 500,000 cuttings, scions, and plantlets as well as more than 1.7 million buds to nurseries and growers.
- **Grapes**
 - Maintain about 1,000 selections of clean grapevine accessions in foundations and distributed more than 700,000 clean grape-wood cuttings, buds, plants, or special seed to industry.
- **Hops**
 - Maintain about 75 clean hop selections in foundations that are used to accommodate about 30 percent of the world’s need for clean hops.
- **Berries** (Strawberries, Blueberries, Cane Fruit)
 - Diagnose and clean about 75 new berry accessions annually and maintain clean plant foundations that provide mother plants to industry that have produced nearly 30 million clean berry plants annually.
- **Citrus**
 - Maintain about 400 clean citrus tree accessions in foundations and deliver ‘starter material’ to industry that has resulted in more than 275 million clean citrus trees over the past 6 years.
- **Sweetpotato**
 - Add about 40 new sweetpotato accessions annually to existing foundations.
- **Roses**
 - Initiated advanced testing of about 600 rose selections currently maintained in foundations.





United States Department of Agriculture

NCPN — National Contact Info



Ms. Tammy Kolt, Nat'l Admin. Officer
Dr. David R. Prokrym, Program Coordinator
Mr. Erich S. Rudyj, Program Coordinator
National Clean Plant Network (NCPN)

USDA, APHIS, PPQ

Science and Technology

1730 Varsity Drive, Suite 400

Raleigh, NC 27606



Phone >>> (919) 855-7447

Phone >>> (301) 851-2160 (Washington, DC-Area Office)

E-Mail >>> Erich.S.Rudyj@aphis.usda.gov

E-Mail >>> David.R.Prokrym@aphis.usda.gov

E-Mail >>> Tammy.Kolt@aphis.usda.gov

or

'BEST' > E-Mail >>> NCPN@aphis.usda.gov



Safeguarding America's Agricultural and Natural Resources

United States Department of Agriculture | Animal and Plant Health Inspection Service | Plant Protection and Quarantine

June 2017