Strengthening R&D for U.S. Forests and Forest Products: *Results from 2020-21 Summit*

Bob Wagner
Department of Forestry and Natural Resources
Purdue University

NCASI Biometrics Working Group
Snoqualmie, WA
June 9, 2022

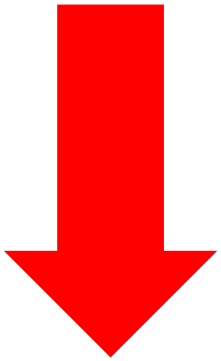
Background

- Forest resources R&D capacity has eroded substantially in U.S. over past several decades.
- Has occurred across federal, university and industry organizations.
- 75% reduction of USFS staffing in wood products research during past three decades.
- 40% staffing reduction in fields critical to protecting forest health (e.g., entomology and pathology).

Background

- 15% decline in number of university forestry professors and USFS scientists since 2002.
- Forest industry research units and support have declined substantially more.
- Reduction has occurred when risks and opportunities for U.S. forests have never been greater.
- Potentially threatens long-term stewardship of nation’s forests and global competitiveness of the U.S. forest products sector.

Doctoral dissertation topic trends

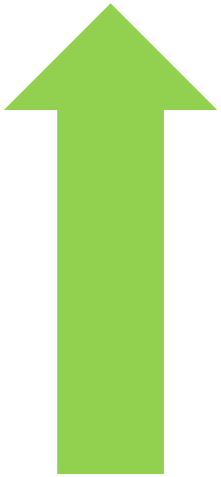


Decreased

- Forest growth and silviculture
- Tree seedling propagation, physiology, and regeneration
- Forest soil nutrients, ecology, and management
- Terrestrial wildlife ecology and management
- Wildlife food and nutrition
- Ungulate, carnivore, and livestock ecology and management
- Fish ecology and management

Stable

- Forest economics
- Forest entomology and pathology
- Wetland ecology



Increased

- Forest policy, politics, and social science
- Forest modeling, biometrics, and statistics
- Forest fire history, ecology, and impact
- Wood science
- Forest vegetation ecology
- Avian ecology
- Watershed ecology and management
- Climate and landscape change
- Genetics and systematics of plant and animal populations
- Atmospheric and soil science

Objective of 2020-21 Forest and Forest Products R&D Capacity Summit

Bring leaders from private, state, federal, and university forest-based organizations together to strategize a better approach to collectively identify, communicate, coordinate, and advocate for U.S. forest and forest products R&D priorities, capacities, and funding

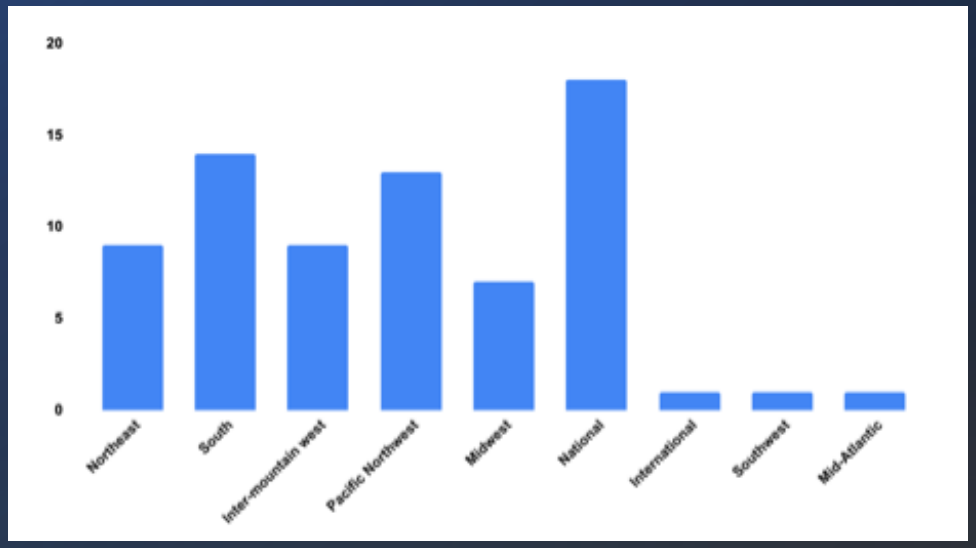
Who was invited to the summit?

A broad spectrum of stakeholders involved as consumers and/or producers of forest and forest products R&D were selected from eight categories:

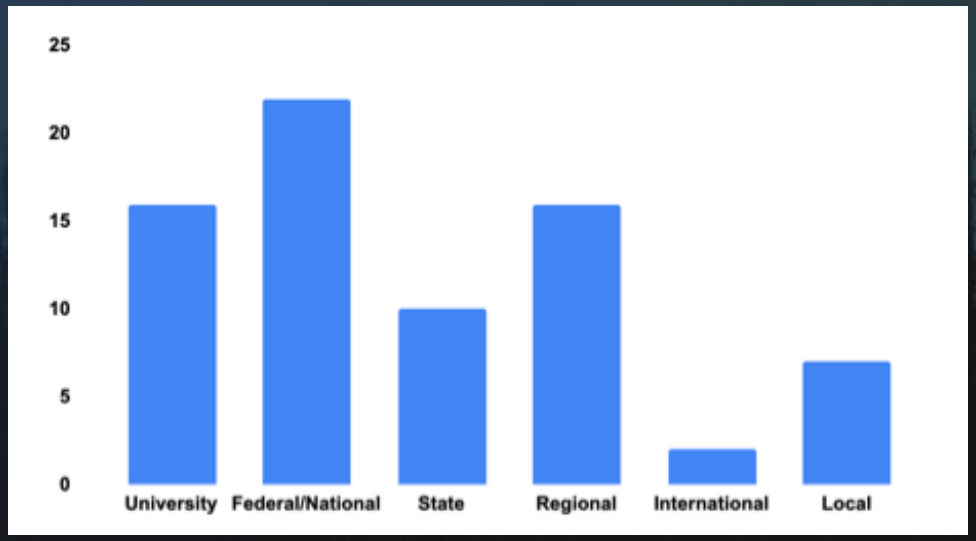
1. State Foresters
2. Family forest landowners/managers
3. Large private forest owners/managers
4. Forest products industry leaders
5. Environmental non-governmental organization (ENGO) leaders
6. USFS National Forest System leaders
7. USFS Research Station Directors
8. University research leaders

- 17 focus groups, interviewed online with prepared script
- 73 total participants
- 53 male, 20 female

Participant geographic scope



Participant scope of Influence



Major Takeaways

Major takeaway #1

There was general agreement among organizations on the highest-priority forest and wood products challenges / opportunities at the national level.

	R&D Producers		R&D Consumers		R&D Producers and Consumers			
Research Priority	***Academic***	***USFS Station Directors***	***USFS National Forest System***	***Family Forest Owners***	***Private Large Forest Owners / Managers***	***NGOs***	***State Foresters***	***Industry***
#1	Carbon and Climate	Fire	Fire	Forest health	Forest Productivity	Carbon and Climate	Mass Timber	Markets for forest products
#2	Forest Health	Water	Water	Carbon and Climate	Carbon and Climate	Fire	Carbon and Climate	Social License to Operate
#3	Fire	Markets for Forest Products	Carbon and Climate	Water	Markets for Forest Products	Social License to Operate	Markets for Forest Products	Wood Energy

Major takeaway #2

Perspectives on R&D funding by stakeholder group. Red arrows indicate a decrease in funding, yellow arrows indicate no change in funding, and green arrows indicate an increase in funding.

Perspective	Perceived change	Sources/Issues
Academic		Academia sources funding from Grants, Partnerships, and Agreements
Station Directors		Station Directors perceived that their funding has declined and there has been a shift to short-term projects (e.g., Joint Venture Agreements)
National Forest System		NFS managers felt they were still receiving the same funding, but were partnering with Universities rather than USFS R&D to meet their research needs
Family Forest Owners		Family Forest Owners recognized that they do not avail themselves of funding available, but felt funding for research had been increasing.
Private Large		Private Large Landowners funded R&D through partnerships and sometimes were able to reinvest revenue into R&D
ENGOs		Some ENGOs sponsor research by issuing requests for proposals while others perform research in house
State Foresters		Some fund internally, others partner
Wood Industry		Some fund internally, others partner

Major takeaway #3

There is a disconnect between the research producers and consumers, the public and the private, congress and the government agencies

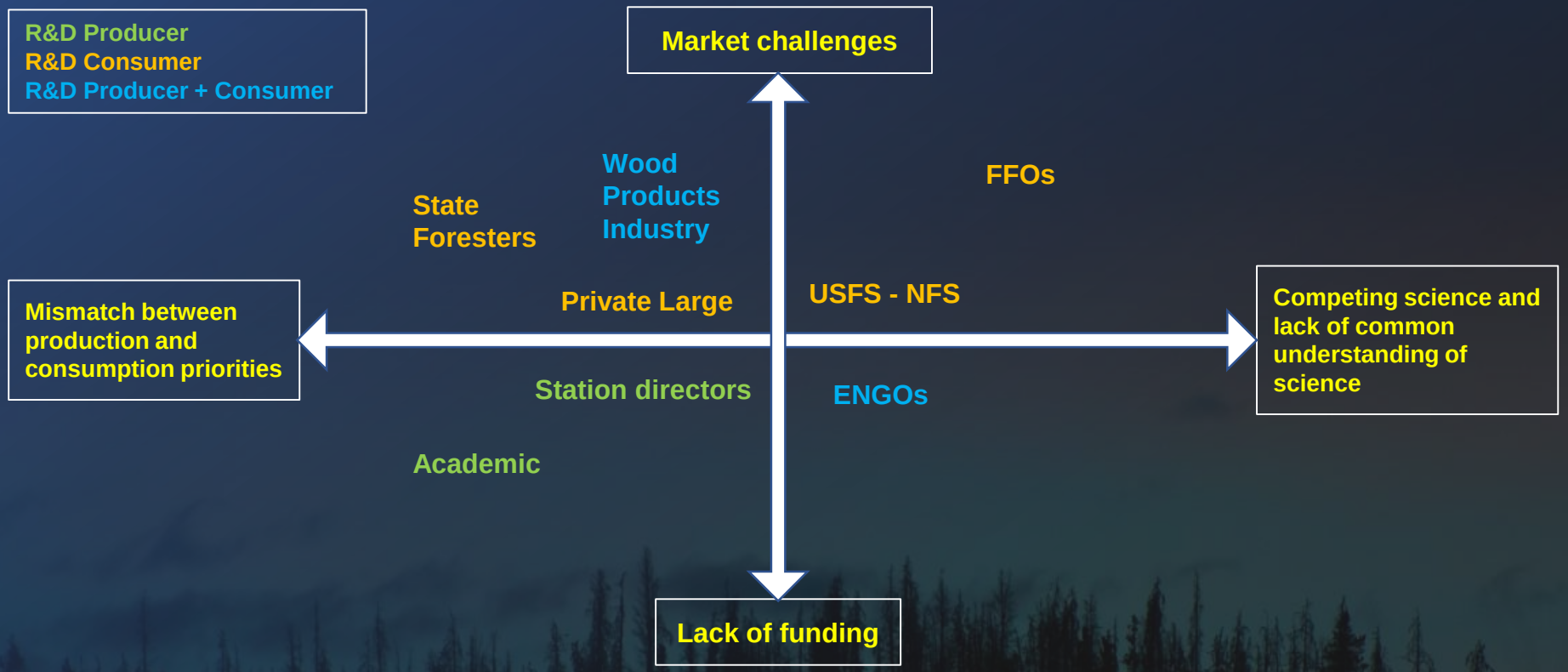


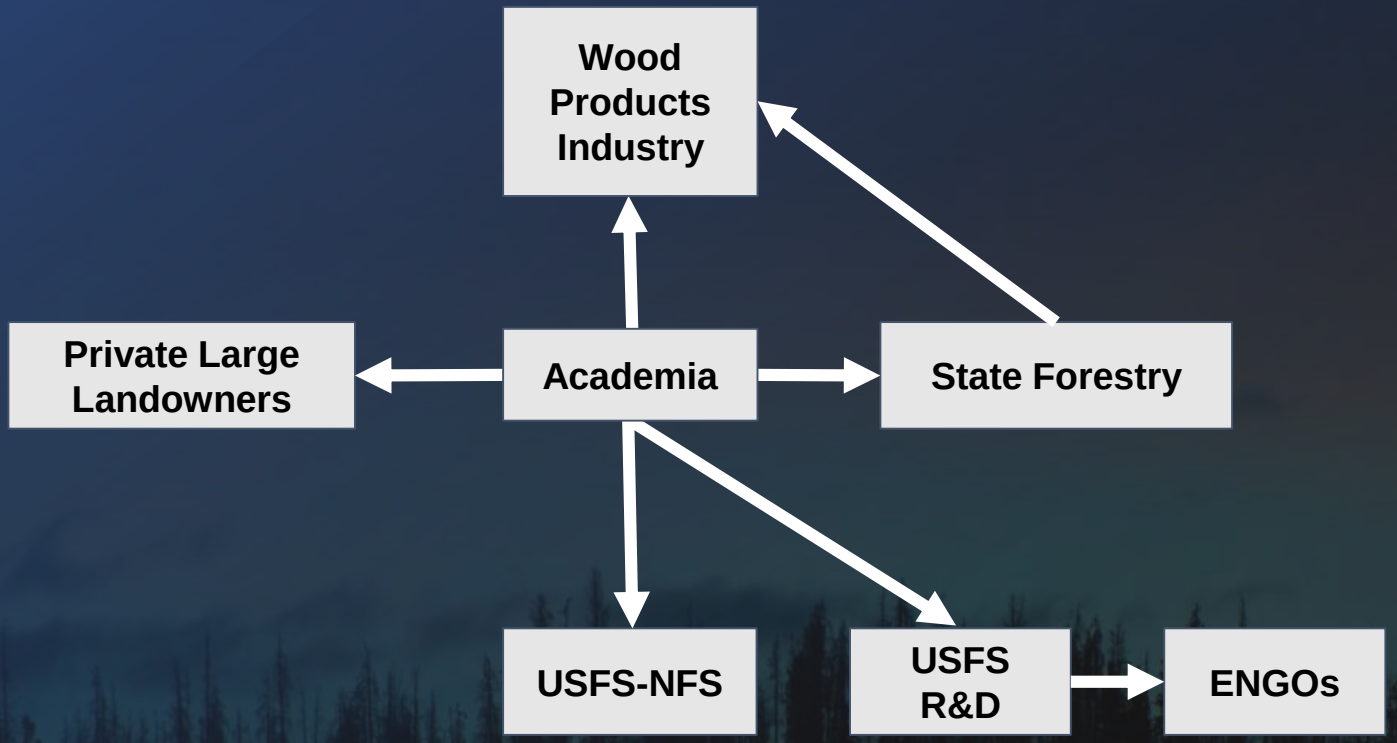
Figure 3: Major challenges noted by more than two groups; groups are placed on the graph by which two challenges were mentioned most, and the extent to which they were mentioned within each group.

"We can go down a rabbit hole and work for a long time on some R&D stuff that isn't really valuable to stakeholders and will not have an impact"
- Academic representative

"I've had researchers get up at meetings and chastise the group for not understanding how important their research was and that we are basically stupid because we don't understand how important this particular line of research is to mankind."
- Industry representative

Major takeaway #4

Universities are the primary partnering institutions for research. Sometimes coordination is via funding, other times via land base or time



"Some of the NFS units started partnering with Universities because they found it was easier because it was more stable organization [than USFS R&D], easier to partner with, even though it meant money."
- NFS Region Manager

Major takeaway #5

- All stakeholder groups agreed that increased capacity in forest and forest products R&D was critical, and that the sector is at a turning point
- Agreed that a national prioritization effort for forest and forest products R&D was needed
- Also need to ensure there is a mechanism to identify regional forest and forest products R&D priorities

Major takeaway #5 cont'd

To be successful, this new prioritization mechanism needs to be responsible for:

- **Jointly identifying national and regional research priorities for forest and forest products R&D,**
- **Jointly communicating, coordinating, and collaboratively advocating for forest and forest products R&D funding that addresses top priorities,**
- **Monitoring and reporting progress in addressing top priorities,**
- **Maintaining and building the nation's forest and forest products R&D capacity, and**
- **Identifying long-term and sustainable funding sources to support forest and forest products R&D priorities.**

Final Report to NIFA

Thank you to the National Institute of Food and Agriculture, United States Department of Agriculture, for funding this project. Project No. IND00136672G.

U.S. Forest and Forest Products R&D Capacity:

Results from 2020-21 Stakeholder Summit

Project Coordinator

Emily S. Huff, Ph.D.
Michigan State University

Project Directors

Robert G. Wagner, Ph.D.
Purdue University

J. Keith Gilless, Ph.D.
UC-Berkeley

Michael Goergen,
US Endowment for Forestry and Communities

Steering Committee

Susan McCord, NCASI
David Tenny, NAFO
Tom Martin, AFF
Justin Morrill, AWC
Alexander Friend, USFS

National Institute of Food and Agriculture Project #IND00136672G

Next Steps

Two things needed:

1. Develop periodic national and regional survey of highest-priority forest and forest products problems
2. Use survey results to advocate all research funding sources to address high-priority forest and forest products problems

National and regional survey of high-priority forest and forest products problems

- Working now with US Endowment for Forestry and Communities and Michigan State U. to develop survey
- Hope to complete survey by next year
- Conduct survey every 3-5 years
- Make this survey the GO-TO place about what are the high-priority forest and forest products problems problems that need to be solved

Funding advocacy for high-priority problems list

Use existing or develop new organization to take on mission of identifying, communicating, coordinating, and advocating for highest-priority forest and forest products problems from survey

Funding sources for forest and forest products R&D in US

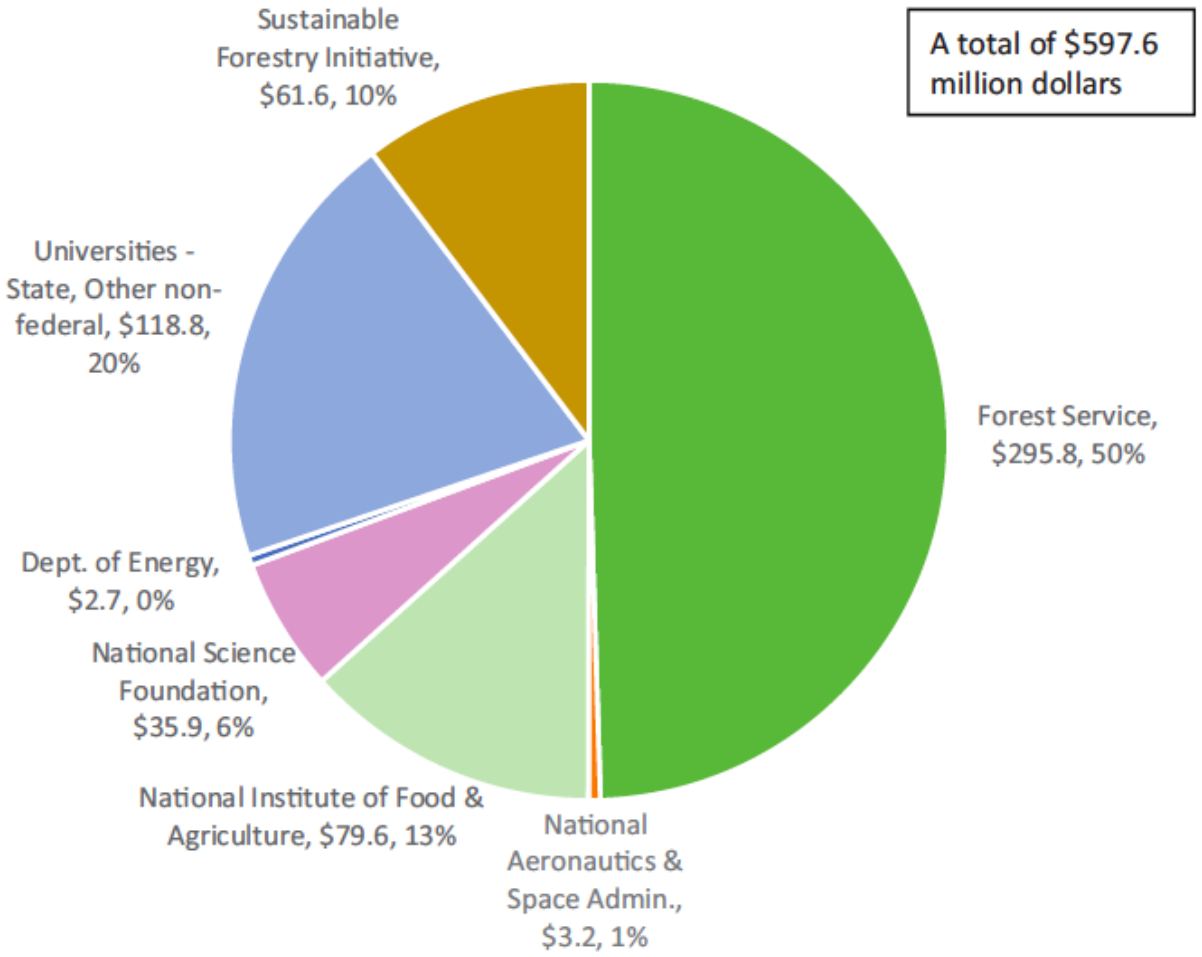


Figure 1. Research funding in forest sector, 2014 (million dollars).

(Source: McGinley et al. 2019, JoF Vol. 117(5): 443–461)

Two approaches:

1. Task existing organization that has related purpose

2. Build new organization

Potential existing organizations:

- Forest Research Advisory Council (FRAC)
- Society of American Foresters (SAF)
- Sustainable Forestry Initiative (SFI)
- National Council for Air and Stream Improvement (NCASI)
- American Farm Bureau Federation

Build new organization:
(following from models used by agriculture)

1. **Supporters of Agricultural Research (SoAR)**
   - Leads non-partisan coalition working to educate stakeholders about the importance of agricultural research and focus more of the best minds on feeding America and the world.

2. **Foundation for Food & Agriculture Research (FFAR)**
   - Supports research addressing big food and agriculture challenges and generates actionable results that benefit farmers, consumers and the environment. Congress established FFAR in the Agricultural Act of 2014 as part of the Farm Bill was signed it into law by President Obama. Funding is $200 million which must be matched (1:1) by non-federal funds as FFAR identifies and approves projects. Convenes stakeholders to identify urgent challenges and the research needed to develop solutions.

3. **Council on Food, Agricultural, and Resource Economics (C-FARE)**
   - Promotes economic thinking into the analysis of food, agricultural, and resource decisions. Mission is to translate knowledge generated by agricultural and applied economics into educational programming directed at policymakers, Congressional staff, stakeholders, and leaders in the federal administration.

Why do this?

- Harmonize messages to funding agencies / politicians about priority problems of forest managers and forest products sector
- Currently an uncoordinated “siloed” process
- Current advocacy can often be at cross purposes
- Disagreement about about priorities decreases political support and overall funding
- Continued erosion of funding to solve forest and forest products problems reduces overall research capacity

Help!

- Still in early stages of post-summit next steps
- Seeking better ideas for how to advance this effort
- If you have ideas, know people, or know organizations that might like to be involved in this effort, please contact me.

Thank you

Questions?