



United States Department of Agriculture



WRPIS/PGITRU Station Report 2020 W6 RTAC Meeting

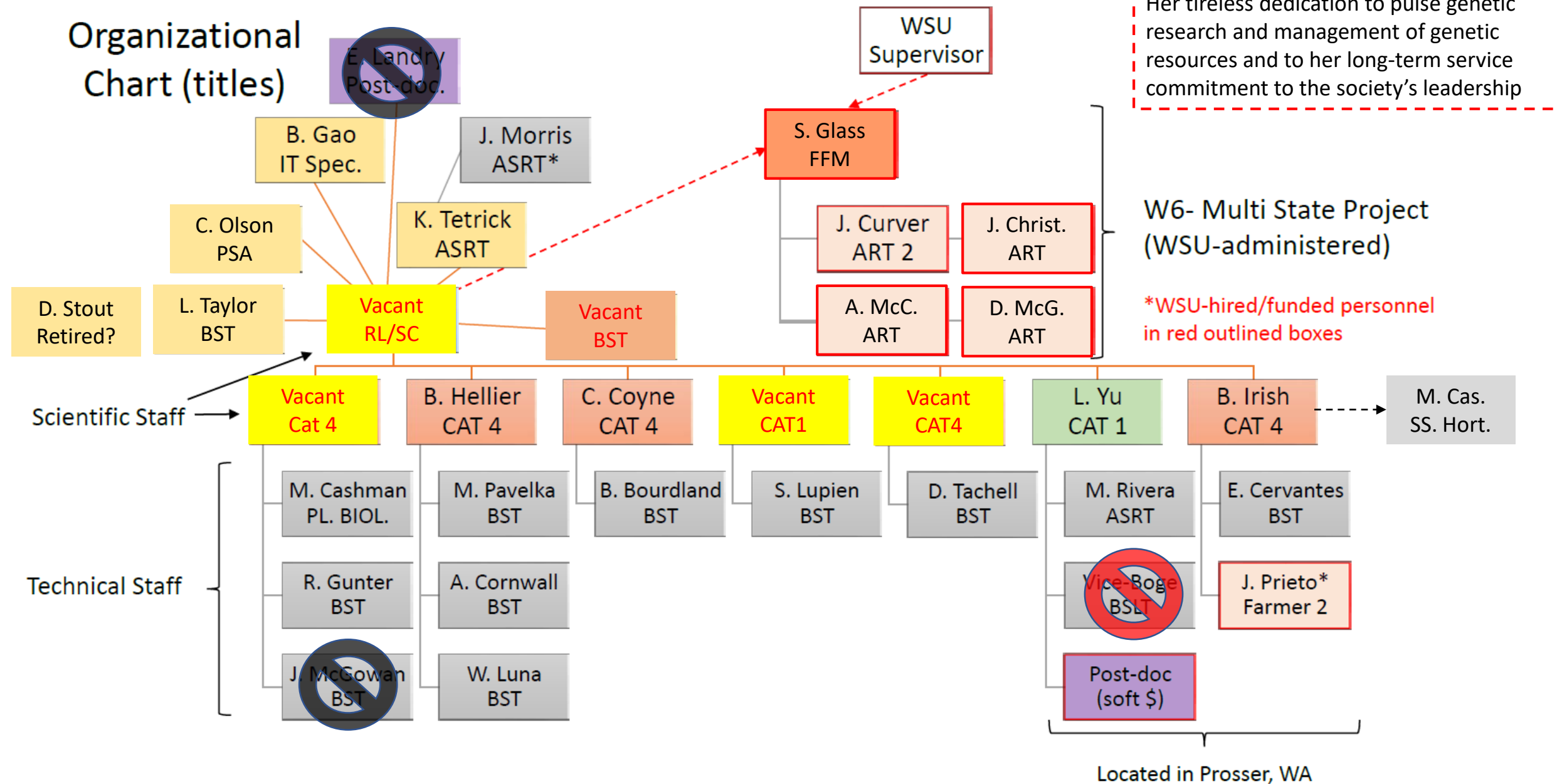
June 16, 2020

Please reference full report for additional specifics:
2019 WRPIS Activity Report - FINAL.pdf

USDA-ARS WRPIS Organizational Chart (titles)

Dr. Clarice Coyne – Fellow CSSA!

Her tireless dedication to pulse genetic research and management of genetic resources and to her long-term service commitment to the society's leadership





Curatorial and Research Programs at WRPIS

- Genetic resource management

- Agronomy – grasses and safflower (**vice-Bradley/Coyne**)
 - Seeds of Success (BLM/ARS interagency project) - **Irish**
- Bean – *Phaseolous* spp. (**vice-Kisha/Hellier**)
- Cool season food legumes – peas, chickpea, lentils, ... (C. Coyne)
- Horticultural crops – lettuce, sugar beets, ornamentals, ... (B. Hellier)
- **Temperate forage legumes – alfalfa, clover, trefoil, ... (B. Irish)**

CRIS projects:

- 2090 21000 032 00 D
- 2090 21000 026 00 D
- 2090 21000 036 00 D

- Mission related research/support

- Plant Pathology – (**vice-Dugan**)
- Faba genetics – (**vice-Hu**)
- **Alfalfa genetics – (L. Yu)**

Funding:

- \$435,940 (2019) – W6 ‘in-kind’ support
- \$3,232,880 – Federal Appropriated
- Extramural funding/in-kind – for RESEARCH

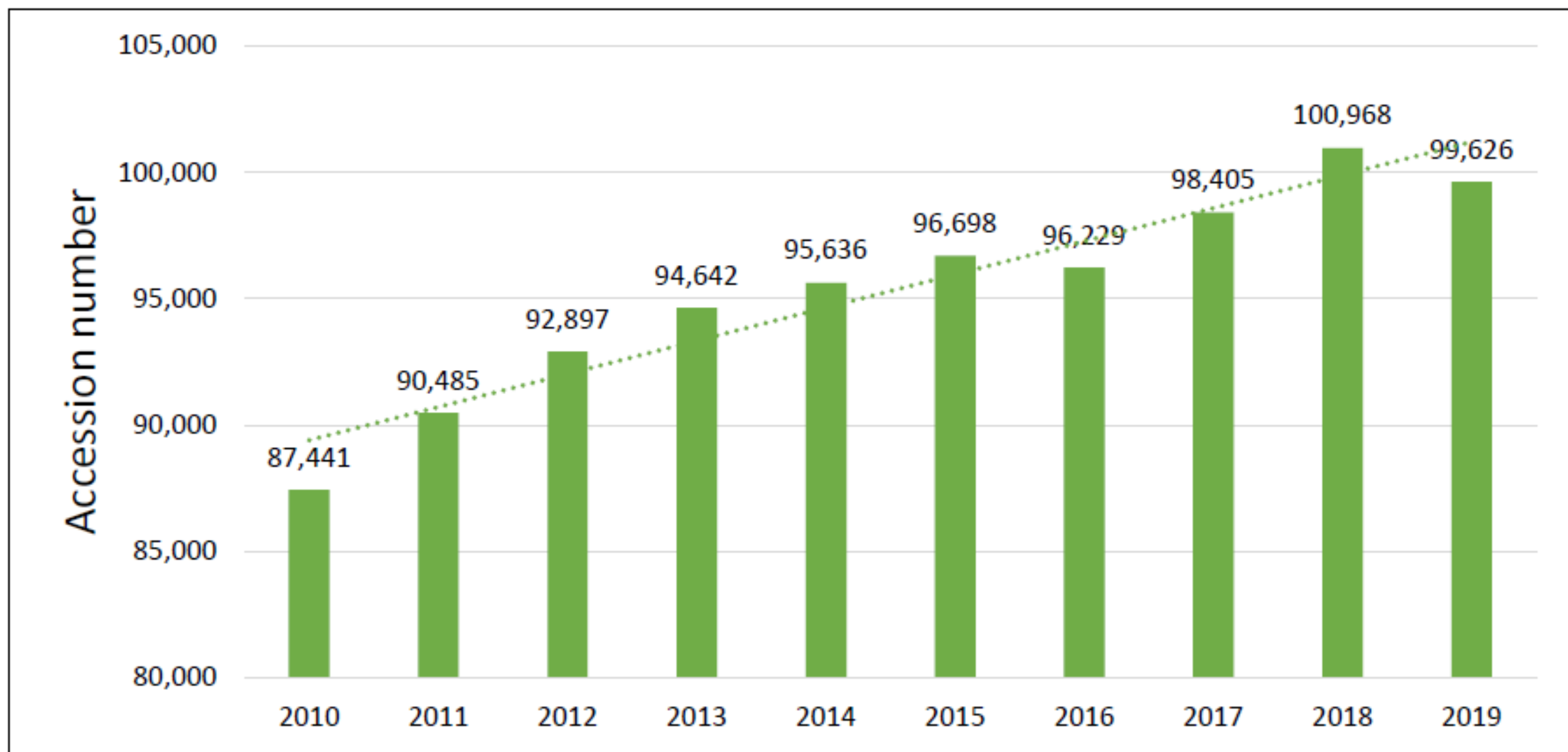


Figure 4. Total number of accessions managed by WRPIS since 2010 (numbers recorded at the end of each calendar year).

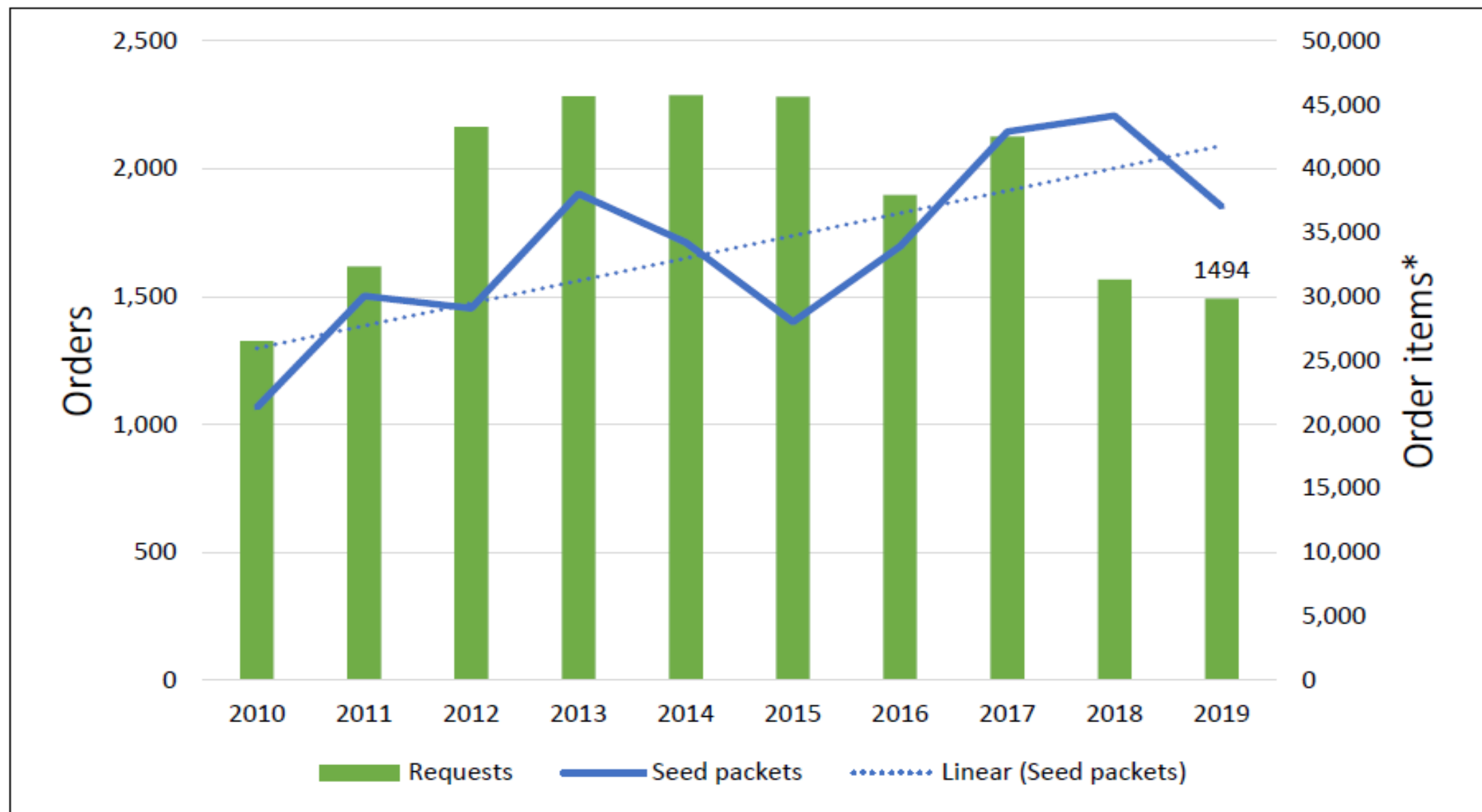


Figure 5. Number of orders and order items distributed annually by WRPIS from 2010 to 2019.
 *(e.g., - seed packets, garlic cloves, ...).

Table 1. Numbers of plant germplasm order items (e.g., seed or clonal propagules) distributed in 2019 to each of the 13 Western States by the NPGS and the WRPIS.

State	NPGS	WRPIS	WRPIS %
Alaska	120	16	13.3
Arizona	2,680	96	3.6
California	13,738	1,034	7.5
Colorado	2,441	296	12.1
Hawaii	513	6	1.2
Idaho	1,377	107	7.8
Montana	629	227	36.1
Nevada	189	-	0.0
New Mexico	340	175	51.5
Oregon	1,824	512	28.1
Utah	776	393	50.6
Washington	7,707	3,943	51.2
Wyoming	140	51	36.4
Total	32,474	6,856	21.1

- State Reports highlight germplasm use
- Significant use by CA, WA
- Large distributions of CSFL to requestors because of increase interest in alternative protein sources
- Most distributions to research at Land Grant institutions

*Data provided by Lisa Taylor



Figure 1. A) The Carrier-PrimeLINE[®] refrigerated container at the Central Ferry Farm, B) interior view and C) the temperature control panel.



Figure 2. View of the refurbished and the old screenhouses (left); First pea germplasm crop being regenerated in new screenhouse (right).



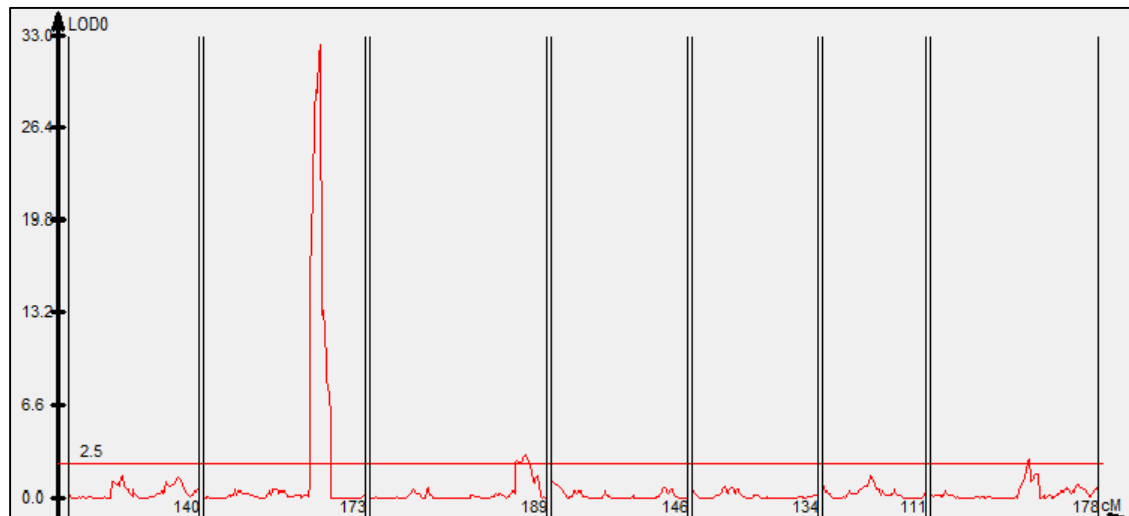
Cool Season Food Legume program



Pisum sativum



Dr. Lyndon Porter

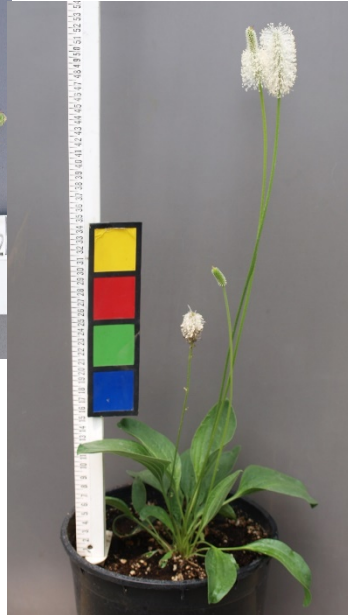


PI 180693 identified – resistant to FRR

- Major QTL: *Fsp-Ps* 2.1
- Explains 53% of the resistance
- LOD peak 32.4
- Confidence interval 1.2 cM
 - **Coyne**, Porter et al. *Fsp-Ps* 2.1 BMC Plant Biology 2019.
- SNP markers converted to breeder-friendly KASP assays
- Gene identification underway
 - Kreplak, **Coyne**, et al. Reference genome for pea. Nature Genetics 2019.



United States Department of Agriculture







Enhancing Resistance to Biotic and Abiotic Stresses in Alfalfa (NP 215)

- Evaluating alfalfa germplasm for important agricultural traits
 - Verticilium wilt
 - Drought, heat and salt stress
 - Forage quality
- Developing techniques and genetic marker trait associations
- Developing improved germplasm
- Many collaborations (\$)
 - NIFA, WSU, USDA, Private industry

