

**National Plant Germplasm Coordinating Committee
and NRSP 6 Technical Advisory Committee
Joint Meeting Minutes**

**May 30, 2018
Sturgeon Bay, WI**

Chair: Craig Yencho, NC State University, 2018 Chair - NRSP-6 TAC Meeting

Participants:

NPGCC

David Baltensperger (by phone - Texas A&M)
Peter Bretting (NPL - USDA, ARS)
Larry Chandler (USDA, ARS)
Greg Cuomo (University of Minnesota)
Tim Cupka (AgReliant Genetics, LLC)
Randi Johnson (USDA, NIFA)
Ed Kaleikau (NPL - USDA, NIFA)
Bob Stougaard (University of Georgia)
Bill Tracy (University of Wisconsin)
Eric Young (North Carolina State University)
Gan-Yuan Zhong (USDA, ARS)

NRSP 6 Technical Advisory Committee

John Bamberg (USDA, ARS - USPG Project Leader)
Bill Barker (North Central Lead AA - University of Wisconsin)
Joseph Coombs (North Central Tech Rep - Dave Douches rep. - Michigan State Univ.)
Ronald French (USDA, APHIS)
Joyce Loper (Western AA - Oregon State University)
Josh Parsons (Industry Tech Rep - Frito-Lay)
Sagar Sathuvalli (Western Tech Rep - Oregon State University)
Phil Simon (USDA, ARS)
JL Willett (USDA, ARS - Midwest Area Director)
Craig Yencho (Southern Tech Rep - North Carolina State University)
Curzio Caravati (Seed Savers)
Jeff Endelman (University of Wisconsin)
Max Martin (USPG Project Manager - University of Wisconsin)
Cathleen McCluskey (University of Wisconsin)
Jesse Schartner (USDA, ARS - USPG)

Meeting Minutes: NPGCC and NRSP-6 Joint morning session

Time	Topic
8:30 - 12:00	Joint NPGCC and NRSP 6 TAC Meeting
8:30 - 8:35	Welcome and introductions – Craig Yencho and Jan Nyrop
8:35 - 8:45	Welcome to the US Potato Genebank and PARS – John Bamberg and William Barker

8:45 - 9:30	<p>ARS and NPGS Update – Peter Bretting (PowerPoint)</p> <p>In meeting report:</p> <ul style="list-style-type: none"> • Number of accessions and distributions in 2017 are both up from 2016 • Budget essentially flat since 2014, with a minor increase in 2018 • PGR management capacity has been decreasing essentially since the mid2000s • Maintenance of germplasm still highest priority, regeneration and data management are second highest • Many NPGS personnel have retired, but hiring freeze was just lifted. ARS will be hiring 700 personnel throughout the agency over next year, a few of which will be new NPGS staff. • Gayle Volk (ARS, Ft Collins) and Pat Byrne (CO State) organized a workshop in April 2018 at Colorado State to discuss need for curator training due to so many retirements (see further details below under PBCC report).
9:30 - 10:00	<p>PGOC and Regional Plant Introduction Stations Update – Gan-Yuan Zhong (PowerPoint)</p> <p>In meeting report:</p> <ul style="list-style-type: none"> • Due to the restricted budget, no PGOC meeting was held in 2017, only a conference call • Next GOC meeting June 19-21 2018 at Beltsville, MD and Washington, DC • Northeast Regional Plant Introduction Station NE-9, Geneva, NY – vegetables and apple, cold-hardy grape, and tart cherry clonal crops • Southern Regional Plant Introduction Station S-9, Griffin, GA – sorghum, peanut, pepper, other vegetables, and sweet potato • North Central Regional Plant Introduction Station, NC-7, Ames, IS – maize, grasses, cucurbits and other vegetables, brassica, sunflower, etc. • Western Regional Plant Introduction Station W-6. Pullman, WA– alfalfa, garlic, beets, beans, chickpeas, lentils, cool season grasses. • Unintended presence of transgenes in gene bank accessions is an ongoing issue <ul style="list-style-type: none"> ○ Testing for transgenes occurs routinely for maize, alfalfa and cotton, but everyone involved in managing germplasm for these and other crops must help prevent this ○ ARS now has specific best management practices to follow that are aimed at preventing this
10:00 - 10:30	<p>NIFA and AFRI Update and Discussion – Randi Johnson, Ed Kaleikau, and Liang-Shiou Lin (PowerPoint)</p> <p>In meeting report:</p> <ul style="list-style-type: none"> • Sonny Ramaswamy’s appointment has ended and an interim NIFA Director is in place, new permanent director should be in place early next year

	<ul style="list-style-type: none"> • Competitive grants related to breeding this year are ~ \$50 Million • Capacity Funds used for breeding related projects is ~ \$20 Million • All CAP grants now under the Sustainable Agriculture Systems RFA • New programs Food & Agriculture Cyber Informatics and Tools (FACT) and Microbiome
10:30 - 11:00	Joint Break
11:00 - 12:00	<p>Future Funding Considerations for NRSP 6 – John Bamberg and William Barker</p> <p>In meeting report:</p> <ul style="list-style-type: none"> • Some directors feel that the NIFA/SAES support for the U. S. Potato Genebank (USPG) through NRSP-6 should cease; so future funding from that source is at risk • Project needs to develop plan to increase USPG support from ARS and outside support from industry and other sources • One constraint is that there are only two or three private potato breeding programs in the US, who already contribute to the project. However, the potato processing industries are not currently providing support

12:00 Joint Lunch Break

1:30 pm TAC Meeting afternoon session begins.

Craig Yencho = Chair

Josh Parsons = Vice Chair

David Douches = Secretary (Joe Coombs, acting)

Present at Sturgeon Bay, WI:

Craig Yencho – S Tech Rep, NCSU

John Bamberg – USPG Project Leader, Sturgeon Bay

Max Martin – USPG Project Assistant, Sturgeon Bay

Josh Parsons – Frito-Lay, Rhinelander

Bill Barker – CALS, Madison

Jeff Endelman – UW potato breeder, Madison

Peter Bretting – NPGS NPL, Beltsville

Ed Kaleikau – NPL NIFA, Beltsville

Ron French - APHIS/Quarantine, Beltsville

JL Willet – USDA, Peoria

Joyce Loper - OSU

Phil Simon – USDA/ARS

Sagar Sathuvalli - OSU

Participating by Remote Access:

Bob Hoopes - Retired (Frito-Lay).

1:33

John Bamberg

TAC meeting introduction and Introduction of attendees.

Craig Yencho

Elect a resolutions committee: Josh Parsons and Sagar Sathuvalli.

2017 Minutes reviewed, motioned, and approved.

Minutes to be submitted to John Bamberg within 60 days.

John Bamberg

Regional reports combined from programs within the region submitted with a list of recipients receiving Genebank materials within the region.

All regional reports received were distributed.

Reports presented by attendees:

Craig Yencho

-Southern Region representative for NCSU, TAMU, VT.

-SE region is predominantly round white chippers (70-80% acres) harvested green and processed within 1-3 days of harvest. This region meets needs for processors during critical storage window.

-Currently NCSU and TAMU have active breeding programs, and Richard Veilleux (VT) is retiring.

Sagar Sathuvalli

-OSU is screening germplasm in the Columbia Basin for Columbia Root Knot Nematode (CRKN) and *Verticillium* wilt.

-Species *S.blb* and *S.sto* are showing resistance to CRKN. The PIs with resistance are different species but mapped to one region in Mexico.

-Species *S. andreamum* and *S.blb* are demonstrating *Verticillium* resistance.

-The recently released variety Castle Russet has multiple species in the pedigree including *S. ver*, *S. chc*, and *S. sto*.

-Chuck Brown's clone SP22 with CRKN resistance (*S.blb*) has been sequenced. Scaffolds are available in GBrowse (14 scaffolds).

Joe Coombs for Dave Douches

-All four state programs (MI, WI, ND, and MN) in the North Central region are making efforts to extract dihaploids using various *S.phu* inducer clones, mostly IVP101.

-Michigan State University is heavily invested in multiple variety development diploid breeding efforts and is now in the 5-6 year of focused diploid breeding.

-Incorporating the Sli Self-Compatibility (SC) trait from M6 into a Recurrent Selection population derived from seven species (*S. phureja*, *S. berthaultii*, *S. tarijense*, *S. chacoense*, *S. microdontum* and *S. tuberosum*) with disease and insect resistance and quality traits. SC is now 83%.

-MSU has a major effort for dihaploid extraction with confirmed dihaploids from 12 elite tetraploid varieties and advanced breeding lines. SC is being crossed into these dihaploids with a Back-Cross breeding strategy.

-*S.chc* USDA8380-1 and M6 were crossed to generate a RIL population to study leptine-based insect resistance to Colorado potato beetle. The F4 progeny are currently being generated.

Other reports as submitted.

John Bamberg

2017 Annual Report

Graphic novel report format (see attached file - NRSP6_Annual_Report_2017.pdf).

Structure based on five elements common to Genebanks

A. Acquisitions and Collections

- Expired PVP will go to Genebank and become available (in vitro)
- Discussion regarding partnerships and desire to restrict access. Once material is off PVP, it is publically available and the NSSL in Fort Collins will send in vitro to the Sturgeon Bay Genebank.
- PVP allows for breeders rights to use PVP plants as parents for breeders. Patents restricts rights for use as parents. Frito-Lay Patents and PVP their clones.
- Agrico and Norika are open and collegial in sharing clones as parents in honor of EUPOV agreement. HZPC requested restricted access, specifically for public breeders.

B. Classification

- Dave Spooner continued monograph work.
- Preservation and Evaluation
- In vitro material
 - 400 Clones and Varieties
 - Mapping populations
 - Species which require in vitro propagation
 - 1000-1200 total
- Disease monitoring (PSTV testing)

C. Evaluation and technology

- Peru connection research and breeding for wart, drought, frost, Late Blight
- Egg-yolk specialty potatoes
- Genotyping Genebank holdings
- GBS for core collection (with CIP)
- Screening *S.mcd* for *Dickeya* (with Pepsico)
- Non-greening trait crossed into Rich Novy (USDA, ID) germplasm
- 15C freezing recovery in *S.jamesii*

D. Distribution

- Over 10,000 units shipped
- Demand is increasing

E. Outreach

- Tours, promotional activities
- Impact statement

Discussion on fee for service. ARS cannot charge for access to material, but can charge for shipping, within statutory limits (JL Willet). MTAs will likely be instated soon.

Jeff Endelman

- Should the Genebank preserve mapping populations?
- New AFRI nomenclature suggests making material available. Currently clonal material cannot maintained and made available. A statement needs to be made to this effect if material cannot be made available (Ed Kaleikau).
- How to maximize usefulness in phenotyping populations (John Bamberg).
- RoseBREED populations are maintained in situ, but need to visit to phenotype (Phil Simon).

2:30

John Bamberg

- GMO Monitoring: is this an issue for potato?
- Suggestion of using Portland Co. to screen for GM traits (~\$4,000)
 - Prioritize higher risk material to potentially screen for deregulated traits

Ron French:

-Discussion about increasing screening capacity for bringing material into the US. Need to lobby Congress to increase funding for increased capacity. The high risk is to export potato markets. TPS offers some options to increase capacity by using higher percentage of seed per lot (50-100 seeds per lot – 1,000 lots). NexGen sequencing has shown some false positives for viruses, etc. There are reduced requirements for TPS originating from NZ, Canada, or S. Chile.

-This topic will be continued at CGC at PAA.

3:00

Comments from other cooperators.

Ron French

-Quarantine capacity: Clonal 75/yr, TPS 50/yr.

-Tubers received have to be brought into TC, then tested, and virus removal.

-Personnel changes (retirements, new staff)

-Funding and space issue.

-Tissue Culture Therapy for virus removal.

Josh Parsons

-Thank you to the Genebank as a valuable resource.

-4x Diversity study (95 selected). Based on GBS allelic diversity. Should the Genebank maintain this and make it available?

-2x Diversity core subset panel – GBS was used to determine genetic diversity of 700 clones from true seed – reintroduce this as a core set that represents 95%+ of allelic diversity (based on GBS).

-Discuss this further at PAA.

-Resequencing project based on SNPs

-3K SNP array not being pursued.

NIFA

Ed Kaleikau

Report was given in morning meeting. Release of germplasm needs to be addressed (state material will not be available since it cannot be maintained).

Craig Yencho

Potato Special Grant funding increase is good. (\$2.25M to \$2.5M). How to continue to increase this?

ARS

Peter Bretting

Report was given in morning meeting.

John Bamberg

-The CGC meeting will be usual breakfast meeting at PAA.

-CIP and CGC collaborations – clonal collection was SNP genotyped.

-Other projects for Zebra Chip and Dickeya research. New project to manage GBS data.

No additional agenda items.

Resolutions to be submitted later.

3:23

TAC and NPGCC groups left Stone Harbor and assembled at genebank site for tour of facilities and to meet staff.

5:30

Adjourned for group supper at Log Den restaurant.

Respectfully submitted,
-Joe Coombs and John Bamberg.