

S-009 Regional Technical Advisory Committee
Minutes of Annual Meeting August 16, 2022
Hybrid Meeting [In person (**bold**) and virtual (regular type)]

S-009 Members Present:

Administrative Advisor (University of Georgia)

NIFA Representative

Alabama (Auburn University)

Georgia (University of Georgia)

Guam (University of Guam)

Louisiana (Louisiana State University)

North Carolina (North Carolina State University)

Oklahoma (Oklahoma State University)

Puerto Rico (University of Puerto Rico)

South Carolina (Clemson University)

Tennessee (University of Tennessee)

Texas (Texas A&M University)

Virgin Island (University of the Virgin Islands)

Virginia (Virginia Tech University)

Bob Stougaard, bob.stougaard@uga.edu

Christian Tobias, Christian.tobias@usda.gov

Charles Chen, cyc0002@auburn.edu

Soraya Bertioli, sbertioli@uga.edu (Chair)

Mari Marutani, marutani@guam.uog.edu

Don LaBonte, dlabonte@agctr.lsu.edu

Carlos Iglesias, caiglesi@ncsu.edu (Secretary)

Yanqi Wu, yanqi.wu@okstate.edu

Carlos Flores, carlos.flores3@upr.edu

Rick Boyles, rboyles@clemson.edu

Virginia Sykes, vsykes@utk.edu

John Cason, j-cason@tamu.edu

Thomas Zimmerman, tzimmer@uvi.edu

Bastiaan Bargmann, bastiaan@vt.edu

Plant Genetic Resources Conservation Unit Members Present:

Melanie Harrison, melanie.harrison@usda.gov

Shyam Tallury, shyam.tallury@usda.gov

Ming Li Wang, mingli.wang@usda.gov

Tiffany Field, tiffany.fields@usda.gov

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Sarah Moon, sarah.moon@usda.gov

Mandy Brooks, Amanda.brooks@uga.edu

Luke Doss, luke.doss@uga.edu

Angie Lewis, alew71@uga.edu

Other Attendees

Peter Bretting (USDA, National Program Leader), peter.bretting@usda.gov

Sachin Rustgi, (Clemson University), srutsgi@clemson.edu

Mark Hopkins, mark.hopkins@uga.edu

Jeff Brady (TAMU), jeffbrady@tamu.edu

Shuyo Liu (TAMU), sliu@ag.tamu.edu

Maegan Delfin, University of Guam

David Bertioli, bertioli@uga.edu

Guillermo Seijo, Universidad del Noreste, Argentina

Manuel Manthi, University of Georgia

Welcome and Introductions

The meeting was called to order on Aug. 16, 2022 at 1:00 pm EDT by S-009 Regional Technical Advisory Committee (RTAC) Chair Soraya Bertoli. Participants introduced themselves. Dr. David Buntin (Interim Assistant Provost and Director for the UGA-Griffin Campus) welcome the participants to the UGA-Griffin Campus. Dr. Buntin highlighted the fact that the Griffin site is fully integrated into the UGA system and that the USDA is an integral part of the activities developed at the site.

Presentations

After introductions, there were four update presentations by Peter Bretting, Christian Tobias, Bob Stougaard and Melanie Harrison:

Peter Bretting - made a presentation about “The National Plant Germplasm System: 2022 Status, Prospects and Challenges”. He gave a yearly update about the status of the system, summarizing the successes and key challenges for the NPGS. He mentioned the long-term partnership between USDA and the Land Grant University system when it comes to germplasm collections work and in particular the partnership between USDA and UGA-Griffin. He also referred to the increase of number of NPGS accessions maintained (recently passing the 600,000 mark), and the higher number of distributions (225,000). He talked about the effects of COVID regarding a dip in the distribution of accessions (-20%), and the difficulties in hiring and training people for open temporary jobs. The latest growth in terms of collections relate to horticultural crops, with two new collections recently initiated. The increase in workload and operational costs has not been accompanied with a parallel increase in resources. This past fiscal year there was a budget increase to get it close to \$50 M. However, when that budget is expressed in constant dollar terms (2012), it only represents about \$35M, and a slow but consistent decrease in real funding. Some of the most prominent budget increases were in support of small grains (+\$190k); Vaccinium (+\$150k); hemp (+\$1, 350k); and pecans (+\$400k).

The need to avoid contaminations and ensure trueness of type for new ex-PVP/off-patent materials, as well as for wild species which are usually cross pollinated, add to the workload under limited resources and support.

Dr. Bretting announced that a new hardiness zone map would be released by 2024. He also talked about the online 3-credit course “Plant Genetic Resources: Genomes, Genebanks, and Growers” offered by the Colorado State University (<http://pgrcourse.colostate.edu>). This course was developed by Gayle Volk (ARS-Ft. Collins, CO) and Patrick Byrne (Colorado State University-Ft. Collins, CO). He also referred to several educational materials within what is called GRIN-University, including posters that can be downloaded. The course can be accessed by anyone interested in expanding the knowledge about genetic resources. Students from other universities can also enroll for a grade alternative.

Answering the question about how well has it been publicized, Dr. Bretting said that it has been announced at several professional meetings, but it would help if this committee and other attendants to this meeting collaborate in spreading the word.

Christian Tobias (NIFA). Delivered a report from the USDA, National Institute of Food and Agriculture (NIFA). In 2020, NIFA lost close to 80% of its personnel due to the move of its main office to Kansas City.

The focus in the last two years has been in rebuilding the organization. NIFA represents one of the main sources of support for plant science related competitive projects. NIFA awards involving genera covered by the PGRCU amounts to close to \$30M. Dr. Tobias talked about the open call in Plant Breeding for Agricultural Production (A1141) with a deadline of Sept 22. The priority for that call is to improve productivity with emphasis on the priorities set by the USDA Plant Breeding Roadmap. Regular grants have a ceiling of \$650k, which goes up to \$800k for certain types of partnerships. Coordinated public-private innovation networks could be granted up to \$1 million for a period of 5 years, to address grand challenges in a multi-institution setup.

Dr. Tobias talked about a new opportunity in Conventional Plant Breeding for Cultivar Development (A1143). This initiative will support research in later stages of cultivar development, so that much needed improved materials could find their way to farmers' fields; with special emphasis to locally and regionally adapted cultivar releases. The proposals should not exceed \$500k for a period of 3-5 years, or \$300k for seed grants. The deadline is also Sept 22.

Dr. Tobias also shared some infographics that could be used for outreach regarding breeding success using germplasm resources: https://www.nrsp10.org/PBCC_plant_breeding_outputs

Dr. Tobias also talked about the Agricultural Genomes to Phenomes Initiative (AG2PI), which is under his responsibility, and aims at studying agricultural significant crops and animals in production environments, filling gaps in genetics and phenomics in support of future improvements.

Most of the questions centered on the Conventional Plant Breeding for Cultivar Development call. A given PI can submit proposals to different programs, but not multiple proposals within the same program. This particular program does not seem to favor opportunities for renewal, except for no-cost extensions.

Bob Stougaard – reported on the Southern Association of Agricultural Experiment Station Directors (SAAESD) and the National Plant Germplasm Coordinating Committee. Budget was approved to hire half FTE for Administrative Support (\$61k).

There is a requirement for mid-term reviews for projects, two years before termination. Several projects will expire at the end of 2023 including the one supporting the S-009 committee. A proposal will be submitted by Sept 30.

Input from this group is needed to decide if the cotton winter nursery will continue to be supported at the level of \$35k/yr. The question is why cotton and not other crops? This support has been ongoing for the last 50-60 years.

Some commodity groups are adding clauses to funded projects that will allow them to own the IP that is generated. This could set up a precedent. The National Ag Law Center will be consulted.

Regarding the PGSC meeting report, plant breeding has evolved considerably in the last years towards the molecular side. There number of plant breeders is stable but with shift towards specialty crops and away from row crops. For some universities, maintaining fully functional breeding programs is putting a lot of pressure on their resources. Equipment update is desperately needed.

Regarding the NPGS Potato Genetic Resource Collection, it will be moved to a new facility to be built at UW-Madison after \$38M were appropriated by Congress for its construction. This will put the Potato

collection on a good footing, in spite of announcing the suspension of \$135K in support from the NRSP-6, which will be balanced by eliminating two current positions.

Melanie Harrison – gave an overview on “PGRCU Annual Update”. The presentation described the history of PGRCU, that started in 1949 at UGA, Griffin campus, as a collaborative effort between USDA and the Southern State Agricultural Experiment Stations (S-009), with 811 accessions. Now it is the second largest site with 102,000 accessions. 87% of accessions are available for distribution and 95% is backed at Fort Collins. Almost 52,000 accessions were distributed in 2021; a significant increase from 2020 when distribution experienced a dip due to COVID. 87% of the collection is maintained at -18C, and germination tests are routinely done.

The program is supported by 16 FTE’s from ARS and 7.5 FTE’s from UGA (23.5 FTE’s), which represents a significant drop from the highest FTE pick (39). Workload in terms of germplasm maintenance, distribution, research, etc. has significantly increased; yet, the smaller group has been able to deliver.

Regeneration of vegetable collection seed is done with the support from some seed companies.

Virus indexing for some key collections (i.e. eggplant, pepper) has been conducted with support from the National Program for Plant Disease Recovery. Specific examples of the work done at Griffin were presented like maintenance of roselle germplasm, with several accessions being photoperiod sensitive. Increases of switchgrass (a cross-pollinated species) are managed in a reduced space thanks to isolation barriers from sun hemp plants. Considerable work has been done in characterizing germplasm (sesame and legumes for antioxidants; grasses for essential oils; etc.).

Curatorial activity reports for the major genera (Arachis, Vigna, Ipomoea, Vegetables, Industrial Crops, Legumes, Grasses, and Sorghum) were presented, with significant amount of work regarding acquisition, regeneration, evaluation and distribution.

Dr. Harrison described some upgrades on equipment and buildings. Existing cold storage will be renovated this year, and LED lights were installed in one greenhouse to support wild peanut regeneration. A new land lease agreement was signed for 14 acres for regenerations, with UGA.

Considerable outreach activity took place during the past year (tours, updated website, gathering success stories, etc.).

State Reports

Representatives summarized the state activities, numbers of requests, distributions, utilization, acquisition strategies, and, in some cases, reported publications, cultivar releases, germplasm releases and patents – (Alabama, Georgia, Guam, Louisiana, North Carolina, Oklahoma, Puerto Rico, South Carolina, Tennessee, Virgin Islands, and Virginia).

Some highlights from the State reports:

- Overall, Sorghum accessions dominated the requests for the reported period (close to 50%).
- A larger number of publications out of Georgia
- Large screening effort for Guava Root nematode in Louisiana.
- Introduction and evaluation of roselle (Hibiscus) in Guam.
- Okra breeding efforts in North Carolina

- Work in tropical crops in Puerto Rico
- Characterization for reduced allergenicity in peanuts in South Carolina
- Work done in Hibiscus in Virgin Island

Afternoon – general business

Welcome and Overview by Soraya Bertioli, S-009 Chair

- Review and approval of the 2021 Minutes. Bas Bargmann motion for approval; Carlos Iglesias second. The 2021 minutes were approved.

Guidelines for S-009 Committee Governance.

Presented by Dr. Bob Stougaard. The guidelines were well received by the participants. Under the new governance structure, we will move from a Chair/Secretary system to a Chair/Chair-elect/Secretary system. Those posts are to serve 1-yr terms, with the possibility to be re-elected for another year. Dr. Virginia Sykes made a motion to approve the new governance structure; Dr. Thomas Zimmerman second. The motion was approved. In transitioning to the new structure, Dr. Soraya Bertioli will remain as Chair for one more year. Dr. Carlos Iglesias will move from Secretary to Chair-elect; and Dr. Yanqi Wu was elected new Secretary with Dr. Rick Boyles motioned to approve and Dr. Charles Chen seconded.

Nominations for 2023 meeting location

Dr. Soraya Bertioli proposed to maintain the hybrid format for future meetings (in person + Zoom option for those wanting to participate remotely). The group approved this proposal. The group discussed the value of in person visits to gain more insights of the work done by different programs. The venue for each yearly meeting will be decided in the prior year's meeting. As for 2023, the S-009 Committee meeting will be held in Raleigh, NC (NCSSU), and it could happen during the weeks of July 24th or July 31st, 2023. A survey poll will be sent soon to set the date that is most convenient for the group.

The group discussed the possibility to meet outside the region and/or the most frequent meeting venues. Having the meeting in the DC area in 2024 will be explored (USDA, Beltsville, MD). The idea seems to be favored by all presents.

Dr. Soraya Bertioli adjourned the meeting.

Technical presentations

In the morning of Aug 17, 2022, the Committee attended three excellent presentations related to the status of germplasm resources in key species, highlighted research, and potential uses of germplasm. The presentations were the following:

- "The status of collection, characterization and use of wild peanut in Argentina, the center of origin of the species."
Guillermo Seijo, Professor of Genetics, Northeast University, Argentina
- "Where would agriculture be without wild species?"
Mark Hopkins, Paraprofessional, University of Georgia, Soraya Leal-Bertioli Lab
- "Looking Wild: Using Crop Wild Relatives for Loci and Allelic Variation Associated with Fruit Size and Shape in Watermelon."
Samuel Manthi, Doctoral Student, University of Georgia, Cecilia McGregor Lab