U.S. RosEXEC Minutes

# zoom online

# JULY 13, 2023 10-11:30 AM PDT

### WElcome

* Standing Officers:
  + Gayle Volk (Chair), Jonathan Fresnedo Ramirez (Vice-Chair), Per McCord (Secretary), Lise Mahoney (Past Chair)
* Attendance and introductions: Attendance: Jim Luby, Per McCord, Jonathan Fresnedo Ramirez, Ksenija Gasic, Cameron Peace, Sook Jung, Gayle Volk, Loren Honaas, Dorrie Main, Nahla Bassil, Tom Gradziel, Philip Stewart
* Minutes from April 2023 RosEXEC meeting are posted: https://www.rosaceae.org/community/us\_rosexec

### RosEXEC MEmbership

* + **Review comments and last chance for edits on the membership and elections document before it is finalized and posted**
    1. Addressed comments in document
    2. Need to add timeline chart for election process
    3. Once finalized, Gayle will post member responsibilities, leadership roles, election processes to RosEXEC website
  + New elections will be held Fall 2023 (J. Fresnedo Ramirez)
  + RosEXEC nominations open September 5, 2023
  + RosEXEC nominations close October 13, 2023
  + RosEXEC election starts November 1, 2023
  + RosEXEC election ends November 17, 2023
  + Suggested to mention RosEXEC and GDR at upcoming meetings (NAPB, ASHS) if appropriate
  + Need to find ways to encourage participation from our international liaisons, or others unable to attend
  + Once finalized, Gayle will post member responsibilities, leadership roles, election processes to RosEXEC website

### GDR Advisory Board

* Report from GDR (See attached)
  + Big focus on system/critical tool updates. Advertising to fill System Administrator DBA position
  + 270 TB of data to backup. New servers ordered.
  + Next quarter workplan includes continued system updates (preparing to convert to Tripal 4, updates to BIMS)
    - Attending NAPB (July), ASHS (August)
* Comments from RosEXEC to GDR
  + GRIN molecular updates, GRIN links to molecular databases (such as GDR) is moving forward quickly. Should be live fairly soon (probably September) according to Nahla. Nahla will send Dorrie her notes from a recent meeting with Cullen McGovern (who is heading up this project). Gayle will get Dorrie in touch with Cullen.
  + Loren working on 10 reference-guided apple genome assemblies (coming soon to be uploaded to GDR).
* Sustainability plan for GDR

### RosEXEC Activities

### **ROSEXEC Mission**

* Serve as a communication and coordination focal point for the US Rosaceae genomics, genetics and breeding community.
* Define research priorities based on input from the industry and research community.
* Facilitate scientific interaction and foster dynamic research teams.
* Promote research priorities.
* Coordinate educational efforts from the research community to the industry and the public.
* Serve as an official steering committee for the Genome Database for Rosaceae

**ONGOING ACTIVITIES**

* **One-page RosEXEC summaries**

Continue to provide summaries going forward. Future RosEXEC meetings are proposed to coincide with GDR newsletter releases (next release July 31). Minutes written by RosEXEC Secretary. Summary written by RosEXEC Vice-Chair based on the minutes.

* **“RosBREED” like session at meetings** to allow real/virtual participants to be more involved.
  + Dorrie suggested meeting together at NAPB and ASHS. Not necessary to have virtual participation.

**Additional proposed activities**

* GDR: additional taskforces (such as for GBS/genomics)
* GDR interoperability with GRIN-Global via BrAPI
* Dorrie plans to request Breeding Insight to include Tripal databases
* Community resource for standardized protocols, ‘bigger picture’ items (across taxa/groups)- a role for GDR?

**New Business**

Discussion of multispecies array (K. Gasic) & other Arrays

### Coordination and updates

* Non-research update (industry, info and tech transfer)
  + New Washington apple cultivar (WA-64) being promoted
    - Loren’s team involved with starch index analysis
* Competitive federal grant project reports
  + Recently funded projects within the Rosaceae
  + Updates on large-scale projects
    - Jessica Waite (pear CGC chair) working on a Bartlett gene expression atlas (NIFA project)
    - SNP Array development
      * INRAe (Helene Muranty) coordinating development of a new multi-species array including 7-7.5K SNPs for apple (*M. domestica*). Already exists a 50K apple array (JKI), expected to be better for general *Malus* evaluation (Jonathan: issues with segregation involving *M. baccata*)
    - Useful to create and share lists of currently available assays (fingerprinting panels; genome-scanning arrays) for various Rosaceae crops.

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| Crop | Status | | Species tested | Number of markers | Assay type | Cost per sample | Citation | Contact person |
| Red raspberry | | Current | R. idaeus, R. strigosus | 24 and 48 | KASP | -depends on # samples submitted- 384 samples ~$12 | Clare et al- Submitted- Molecular Breeding | Nahla Bassil |
| Strawberry | | Current | F. x ananassa, F. chiloensis, F. virginiana, | 6 | SSR | It depends on provider | Unpublished | Nahla Bassil |
| Pear | | Current | P. communis  P. ussuriensis  P. pyrifolia | 24 and 45 | KASP | -depends on # samples submitted- 384 samples ~$12 | Not published yet | Marijn Rymenants |
| Apple | | Exists | *M. domestica* and should be effective within exotic *Malus* too | 50K | Axiom array | ~35€ (is that right?) |  |  |
| Apple | | Exists |  | SSR - various platforms | 9–## |  |  |  |
| Apple | | Exists | *M. domestica* (and domestica vs. exotic) | KASP (SNP) | 48 | $12 LGC (n=384), $50 external, include DNA extr. |  | Cameron Peace (WSU) |
| Apple | | Dev | *M. domestica* (and domestica vs. exotic) | Axiom (SNP) | ~7.5K, back-compatible with Illumina 20K apple array | ~25€ |  | Helene Muranty (INRAe) |
| Cherry | | Dev | *P. avium* (and avium vs. others) | KASP (SNP) | 48 | $12 LGC (n=384), $50 external |  | Cameron Peace (WSU) |
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* + - New Apple Fingerprinting platform (Peace)
      * 48-SNP KASP assay, offered to public (apple enthusiasts) for cultivar identity
      * Working on one for sweet cherry as well
* International project collaborations
* Any other important research funding coordination opportunities
  + Next large-scale Rosaceae-wide research project? Consider developing two planning grants (SCRI, NSF)
    - Per happy to lead at least one of these
    - Problem/topic: climate resilience in Rosaceae would suit. NPGS has published recently on effects of climate change on germplasm management, etc. ([**https://doi.org/10.1002/csc2.21003**](https://doi.org/10.1002/csc2.21003))
    - What uniting technologies? Genomics, genetics, and breeding obviously, but anything specific? (e.g., RosBREED was Pedigree-Based Analysis, SNP arrays, DNA-informed breeding, centered on breeding application)

### Research fields and technology updates

* Germplasm (genetic resources)
  + Crop Germplasm Committees and USDA-ARS germplasm status, current and recent evaluation funding, other germplasm resources, vulnerability statements, apple acquisition, apple core collection
  + Apple CGC October 26 in Geneva, NY (hybrid)
  + Gayle headed to Vietnam to collect wild Malus doumeri
  + Apple CGC received funding to work on core collection building
  + Apple CGC working on guidelines for accessioning of new germplasm
  + Pear Vulnerability Statement should be ready by end of September
  + Prunus CGC held in April (virtual). Minutes still under preparation by Ksenija. New curator in Davis (Claire Heinitz). Plan to hold next meeting in person, rotate to Geneva every couple of years.
  + Small Fruit CGC held in November. Driscoll’s will host next meeting in California (exact place and time to be determined). Nahla received CGC funding to genotype Ribes collection.
* Phenotyping
  + Standardized phenotyping, High-throughput/high-resolution phenotyping/phenomics, USDA collection evaluation data (GRIN-Global) (no new updates)
* Whole genome sequences and physical maps
  + Updates on status of Rosaceae genomes
* Enabling technologies in genomics and genetics
  + Sequencing, annotation, transcriptional profiling, genome-scanning SNP arrays, reference linkage maps, QTL & MTL methods/software and discoveries, MAB: evaluation (trait predictions) – available DNA tests and platforms, MAB: characterization (identity/parentage/ancestry/relatedness) – approaches and progress
  + Stijn Vanderzande coordinating efforts to advance Pedigree-Based Analysis/Identity-by-Descent tools (event held at Eucarpia conference in September)

### usrosexec_logoWhite Papers?

* n/a

### Personnel changes

* Retirements and other departures, new positions available, recent positions filled, graduating students, candidates looking for positions (e.g., promising grad students, postdocs)
  + Jim Luby (University of Minnesota) retiring in about a year, being replaced by Matt Clark (apples, berries), Soon Li Teh (grape breeding and genetics)
    - Soon Li leaving pear rootstock breeding position at WSU

### Announcements for upcoming meetings

* Upcoming meeting announcements
  + National Association of Plant Breeders (NAPB) Annual Meeting, July 16-19 2023, Greenville, SC
  + ASHS July 31-Aug 4, 2023, Orlando, FL
  + Eucarpia Fruit Breeding and Genetics, Sept 11-16, 2023, JKI, Dresden, Germany
  + Apple CGC October 26, 2023 Geneva, NY
  + Plant and Animal Genome (PAG) Conference, Jan 12-17, 2024, San Diego, CA

### Next RosEXEC meetingS

* October 2023
* January 2024 (at PAG)