

Welcome to the second issue of the GDR newsletter in 2016. This newsletter is issued to inform users about new or updated data and features in GDR and community related news. Please feel free to provide feedback and news via <http://www.rosaceae.org/contact>. The online version can be found at http://www.rosaceae.org/GDR_newsletter.

What's new at GDR?

1. GDR Training Workshop at PAG 2017
2. Newly designed GDR launched
3. Reference Transcriptome for Rubus genus built and made available
4. New genome associated data available in JBrowse
5. Conserved syntenic regions among Rosaceae genomes analyzed by GDR and made available using GBrowse_syn
6. New Rosaceae genes and mRNAs, downloaded and parsed from NCBI nr database available for searching and download
7. Rosaceae Trait Ontology and abbreviations available.
8. New map, marker and QTL data
9. GDRcyc databases updated with MetaCyc v19.5
10. Dynamic data overview page
11. Germplasm Image Search
12. Combined Gene and Transcript Search
13. Genetic Map Search
14. Short video tutorials
15. Work in Progress
16. Employment opportunities
17. Subscription
18. Community News

1. GDR Training Workshop

Please join us for a GDR user-taught training workshop at the 2017 International Plant and Animal Genome Conference, Saturday January 14, 4.00-6.10 PM. Our preliminary program is as follows:

- 4.00 - 4.05 PM: Goals of the workshop (Dorrie Main)
- 4.05 - 4.25 PM: Overview of GDR (Sook Jung)
- 4.25 - 4.45 PM: Strawberry genomic resources (Richard Harrison)
- 4.45 - 5.05 PM: Using the new apple genome assembly v4.0 data (Riccardo Velasco)
- 5.05 - 5.25 PM: Using GDR for developing molecular tools (Cameron Peace)
- 5.25 - 5.50 PM: Using Field Book App and BIMS in GDR for peach breeding (Ksenija Gasic)
- 5.50 - 6.10 PM: Open discussion and roundup

2. Newly designed GDR launched

Following the results of a survey of users, GDR has been [newly designed](#) and implemented in Tripal 2.1 to provide easier, more intuitive access to major features in GDR. This includes a home page (Figure 1) with major genera quick start links as well as a tools quick start.

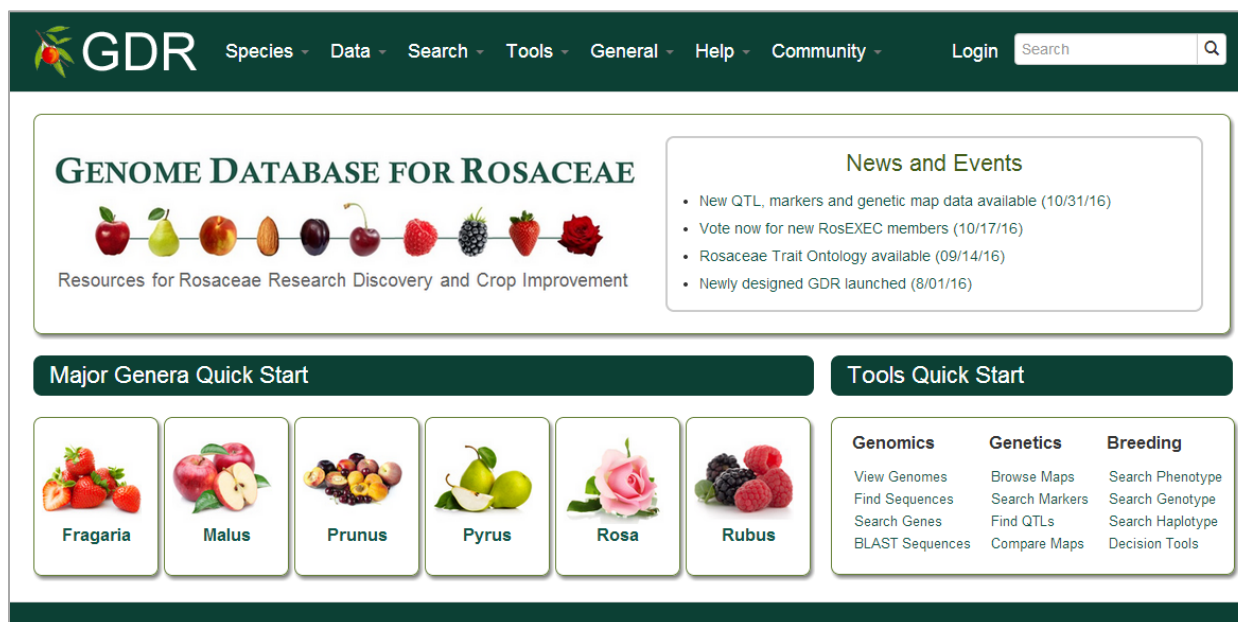


Figure 1: Redesigned GDR Home Page

3. Reference Transcriptome for Rubus genus built and made available

[GDR Rubus RefTrans](#) distills published RNA-Seq (265 million reads) and EST data (3,184 sequences) sets into a reference transcriptome (RefTrans) for Rubus and provides putative annotation by homology to known proteins. The 37,326 Rubus RefTrans sequences can be downloaded in fasta format, [searched for putative function](#) by keyword, GO term, InterPro domain or KEGG term, or homology to SwissProt or TrEMBL proteins [downloaded in excel](#) file for the entire RefTrans with hyperlinks to the sequences and the homologs.

4. [New genome associated data available in JBrowse](#)

- SNP data available in JBrowse
 - a. Apple 480K to *M. x domestica* genome v3.0
 - b. IRSC Cherry 6K to *P. persica* genome v2.0
 - c. Strawberry 90K to *F. vesca* v1.1
- *Fragaria vesca* v2.0.a2 added as a track in JBrowse of *Fragaria* v2.0
- Genome Assembly of *F. x ananassa* and four wild species v1.0 made available in JBrowse
- *Malus x domestica* v3.0.a1 pseudomolecules and *Malus x domestica* v3.0.a1 contigs made available in JBrowse

5. Conserved syntenic regions among Rosaceae genomes analyzed by GDR and made available using GBrowse_syn

Conserved syntenic regions among *Prunus persica* v2.0, *Fragaria vesca* v2.0, *Malus x domestica* v3.0p, and *Pyrus communis* v1.0 were analyzed by GDR and made available using [GBrowse_syn](#) (Figure 2)

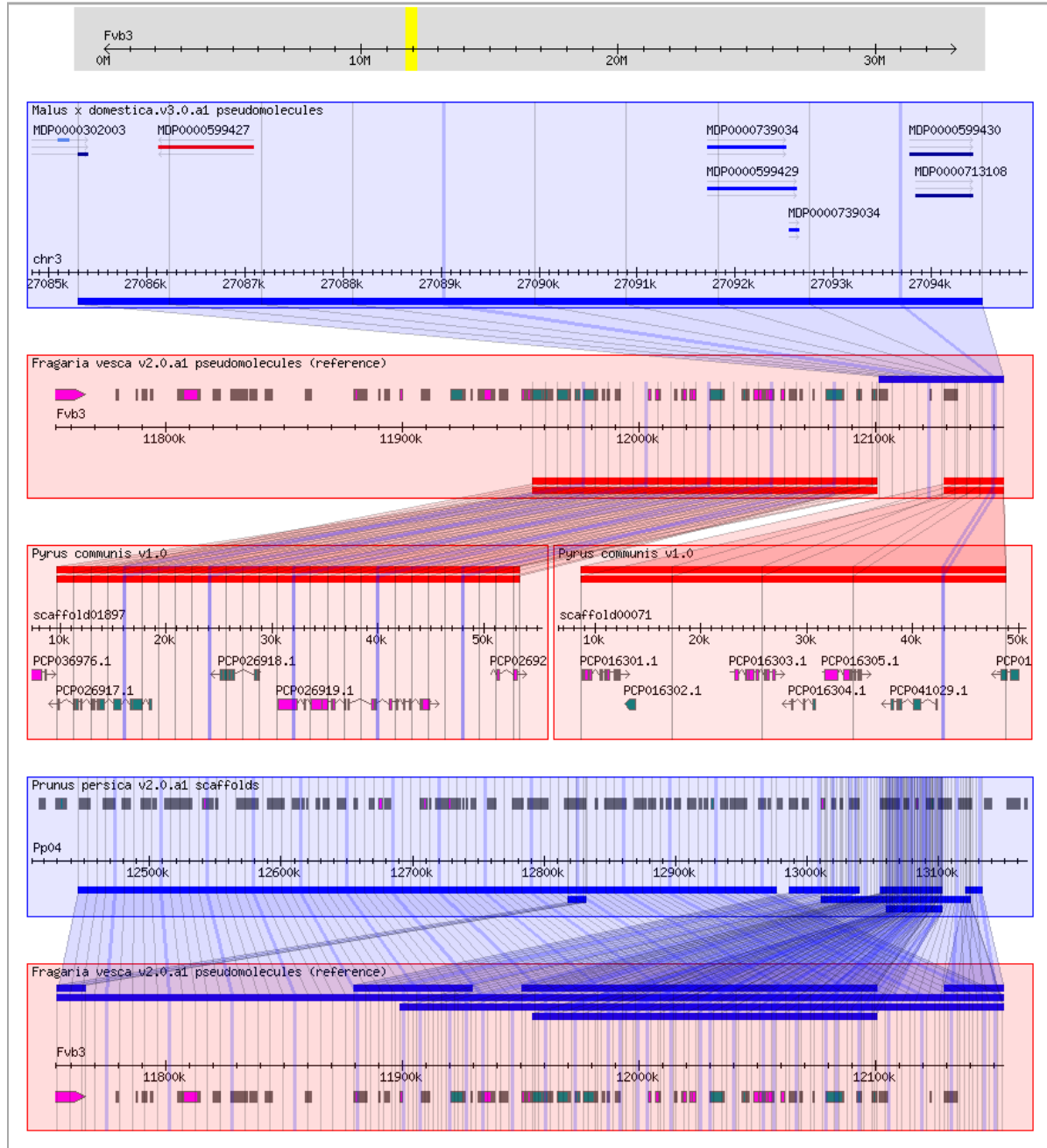


Figure 2: Example of a syntenic region between peach, pear, apple and strawberry genomes, displayed in GBrowse_Syn

6. **New Rosaceae genes and mRNAs, downloaded and parsed from NCBI nr database available for searching and download**
Search updated genes and mRNAs, downloaded and parsed from NCBI nr database in [Search Genes and Transcripts page](#).
7. **Rosaceae Trait Ontology and the abbreviation available.**
GDR has made an effort to standardize [the Rosaceae trait names and the abbreviations](#) for all the trait data entered in the database. GDR QTL are associated with these trait terms and QTL labels, assigned by GDR, use the below abbreviations for the listed traits.
8. **New map, marker and QTL data**
New QTL, markers, genetic map and genotype data have been added to GDR. It includes data from 8 publications: 4 in Prunus, 4 in Malus and 1 in Rubus. A list of these publications can be found at [GDR News item 10/31/16](#).
9. **GDR Cyc databases updated with MetaCyc v19.5**
Explore pathway data in [FragariaCyc](#), [AppleCyc](#) and [PeachCyc](#) in MetaCyc v19.5.
10. **Dynamic data overview page is available**
Browse the current data type and number in GDR in [the new dynamic data overview page](#). Data types are expandable/collapsible by species and or data subtype.
11. **Germplasm Image Search Available**
[Search germplasm images](#) by species, germplasm name or legend.

Search germplasm by name or alias. Wild card (*) can be used to match any word. | [Short video tutorial](#) | [Text tutorial](#) | [Email us with problems and suggestions](#)

Genus Species

Name (e.g. wsu)

Legend (e.g. golden, fuji)

Figure 3: Germplasm image search page

12. Combined Gene and Transcript Search Available

[Search genes and transcripts](#) in the new search page by various categories (Figure 3)

Search genes and transcripts by species, dataset, genome location, name and/or keyword. For keyword, enter any protein name of homologs, KEGG term/EC number, GO term, or InterPro term. | [Short video tutorial](#) | [Text tutorial](#) | [Email us with problems and suggestions](#)

Genus Species

Dataset
 Curated Genes
 GDR Gene Database
 NCBI Rosaceae gene and mRNA sequences
 Predicted Genes

Genome Location between and

Gene/Transcript Name No file chosen

Keyword

(eg. polygalacturonase, resistance, EC:1.4.1.3, cell cycle, ATP binding, zinc finger)

Figure 3: Search genes and transcripts page

13. Genetic Map Search Available

[Search genetic maps](#) (Figure 4) available in GDR by species.

Species
 Fragaria iinumae
 Fragaria sp.
 Fragaria x ananassa

191 records were returned [Download](#) [Table](#)

#	Map Name	Maternal Parent	Paternal Parent	Pop Size	Pop Type	Species
1	Prunus Bin Map	Texas	Earlygold		F2	Prunus dulcis
2	Prunus Bin Map	Texas	Earlygold		F2	Prunus persica
3	Prunus-TE-F2	Texas	Earlygold		F2	Prunus prunus
4	Prunus-TE-F2	Texas	Earlygold		F2	Prunus dulcis
5	Prunus-TE-F2	Texas	Earlvold		F2	Prunus spp

Figure 4: Search genetic maps page

14. Short video tutorials are available

[Short video tutorials](#) are available for site overview, species pages and all the search pages. Text tutorials have also been updated (Figure 5)

GDR Tutorials		
Tutorial Topic	Video	Text
Site Overview	Watch	Read
Species Page	Watch	Read
Searches:		
Genes and Transcripts	Watch	Read
Genotypes	Watch	SSR SNP
Germplasm Images	Watch	Read
Haplotype Blocks	Watch	Read
Markers	Watch	Marker Nearby Marker
Publications	Watch	Read
QTLs	Watch	Read
Sequences	Watch	Read
Tools:		
Breeders Tool Box	Watch	Read
CMap	Watch	Read
GBrowse	Watch	Read
GDR Cyc	Watch	Read
JBrowse	Watch	Read
Sequence Retrieval	Watch	Read
Synteny Viewer	Watch	Read

Figure 5: Tutorials page

15. Work in Progress

- Completing RefTrans for all major Rosaceae species
- Addition of more map, marker and QTL data: We are continuously adding more map, marker and QTL data from publications to keep up-to-date database
- Modifying the breeder's toolbox to build TripalBIMS to provide comprehensive breeding information management system to breeders that can be shared with other databases
- Developing further terms for Trait Ontology to describe Rosaceae traits
- Making SNPs searchable by SNP chip name
- New integrated interface (TripalMap) for viewing and comparing genetic maps
- Collaborating with the Poland Program to enhance FieldBook App for more efficient phenotype data collection capability for specialty crops

16. Employment opportunities

We are currently looking to recruit more programmers and a postdoc for GDR and related work. A very competitive compensation package is available for the right candidates. If you know of any candidates for this job, please have them contact [Dorrie Main](#).

17. Subscription

Visit our mailing lists be added/removed to the available [GDR mailing lists](#). Once you have registered you may use the mailing lists to send out relevant information the community and it will be stored in searchable web archives. More information is available on each page on how to use them. If you have any difficulties please [contact us](#).

Community News

Conferences

- [The International Plant and Animal Genome XXV Conference](#), Jan 14-18, 2017, San Diego, CA, USA.
- [4th Symposium in Molecular Markers in Horticulture](#): 7–10 Mar 2017, Napier, New Zealand
- [8th International Cherry Symposium](#): 5– 9 June 2017, Yamagata City, Japan
- 4th International Horticulture Research Conference: 16–20 July (tentative) 2017, East Malling, United Kingdom
- [NAPB/PBCC Annual Meetings](#): 7–10 August 2017, at Davis, CA
- [Association of Plant Biologists Annual Meeting](#): June 24-28 2017, Honolulu, Hawaii
- [ASHS Annual Meeting](#): September 19-22 2017, Waikoloa, Hawaii