

# Rhododendron Research Network

## 2020 Steering Committee Report

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### Report on 2020 Accomplishments

#### 2020.1 Webpage improvements and additions

Led by Bob Weissman

1. Update the R-RN web site when needed with new or revised content.
2. Refine, test and complete development of an online chat capability to enable communications among R-RN participants.
3. Complete development of an R-RN BLAST search tool for Rhododendron genomes employing genome databases hosted at the R-RN web site. Additional related activities include:
  - a. Add BLAST search advanced options: “e-value” and “max target sequences” to the search form.
  - b. Include a link for users to download individual genome (fasta) files.
  - c. Contact researchers who have published rhododendron genomes/transcriptomes and ask for assembled sequences of genomes for the R-RN BLAST database.
  - d. Develop online form for submission of assembled genomes and associated metadata which will include the following information: species, chromosome number, ploidy, genome size, publication, genome type, tissues sampled.
  - e. Develop keyword search for gene names or functions within a genome

- f. Create a tool for users to extract and download matching scaffolds (nuclear genome sequences) or transcripts (transcriptome sequences) using a blastdbcmd program.
4. Future Action Items (possibly addressed by likely extending beyond 2020).
  - a. Create online genome browser for *Rhododendron* genomes hosted on the R-RN website. See kiwifruit genome browser as an example genome browser created with JBrowse.
  - b. Develop metadata webpages for each genome hosted on the R-RN website. These will be created from the above online form associated with the submission of assembled genomes. Example metadata page: <http://mimubase.org/species/mimulus/guttatus>

#### 2020 ACCOMPLISHMENTS:

1. Bob has kept the RRN pages up to date. He added our 2020 Current Initiatives to the "Accomplishments, Current Initiatives, Future Activities" page. He has also added any new suggestions submitted for our "Online Resources for *Rhododendron* Studies" page. 2020 RRN newsletters have been linked to the main RRN page.
2. Bob Weissman developed code for an online forum, which was tested by R-RN steering committee members before making it publicly available. The forum is linked to the main R-RN page under the Research Tools and Information Exchange section as "Network Discussion Forum" (<http://www.rhodo-research.net/forum/default.asp>). The forum includes pages for registering as a member, editing member profiles, viewing members, searching the forum, FAQs, and the actual forum for posting and replying to topics related to *Rhododendron* research. With input from the steering committee, we organized the forum into four main sections to organize posts: *Rhododendron* Community, *Rhododendron* Opportunities, *Rhododendron* Research Network, and Discussion Introduction and Administration. Anyone can view topics within the forum, but only registered members can post or reply to topics. New posts and replies are approved by the moderator (Valerie Soza) to make sure that the forum is being used appropriately. The forum went live in May 2020. Since then, all of our steering committee members and four other users have registered for the forum. Besides posts from several steering committee members, only three public users have posted topics.
3. We hit a road block in 2020 trying to develop an online tool for searching *Rhododendron* genomes due to our server settings, and we could not adjust these. We were considering migrating to a UNIX server to develop an online BLAST tool but wanted to determine the amount of interest in this tool before proceeding. We had a question on the survey that Juliana sent to newsletter recipients to gauge interest but we had very few participants in that survey. Therefore, we put a link on the main RRN page to the *R. williamsianum* and *R. simsii* BLAST tools at NCBI to track traffic at these links as a proxy for interest. However, this link did not get much traffic. Meanwhile, we discovered that Chengjun Zhang's lab at the Kunming Institute of Botany had already developed an online BLAST tool to search all publicly available *Rhododendron* genomes with plans to

incorporate new genomes. Currently, four *Rhododendron* genomes are available at the site: *R. delavayi*, *R. ovatum*, *R. simsii*, and *R. williamsianum*. In November 2020, we linked Zhang's website "Rhododendron Plant Genome Database (RPGD)" (<http://bioinfor.kib.ac.cn/RPGD/>) to our main RRN page with the "Search Rhododendron Genomes" link under the Research Tools and Information Exchange section. The RPGD site has many features for exploring *Rhododendron* genomes. We are glad that this website is now available for *Rhododendron* researchers. This then alleviates the RRN from pursuing development of this tool.

4. The RPGD page also contains a genome browser tool called JBrowse.

## 2020.2 Maintain and grow literature database

Led by Juliana Medeiros

1. Work with ARS volunteers to finish entering references from Homer Salley literature database (In progress ~75% complete).
2. Work with ARS and/or Holden volunteers to enter references from Charles Andrews (approx. 400 references dating from 1571 – early 20<sup>th</sup> century)
3. Conduct searches to add new 2020 references on a quarterly basis.
4. Maintain .doc, .bib and .xml copies of the database, updated quarterly
5. Work with ARS and/or Holden volunteers to add PDFs to the private group.

2020 ACCOMPLISHMENTS: Juliana maintained back-up copies of the database and grew the database. A total of 13 invite requests to join the database were received, but only two people have signed into the database after their invitation was accepted. A total of 66 new papers published during 2020 were added but work on adding older references from the Homer Salley and Charles Andrews archives stalled out completely, due to lack of volunteer time availability. One high point is that ARS volunteer Toby Hughes worked to obtain PDF copies for hundreds of articles, which he will continue to add to the private group PDF collection, which can be freely accessed by group members. Note that Mendeley is discontinuing public groups, which includes our invite-only group. We will send invitations to members of the invite-only group to join the private group in January 2021.

The survey we conducted does indicate that most people are willing to use Mendeley at least enough to access this resource, but some people may not want to work with Mendeley, so a combination of offering support for other reference managers along with advertising to scientific audiences may be needed.

## 2020.3 Build data hosting capacity

Led by Valerie Soza

- 1) Create links on RRN webpage to online resources shown in Appendix B of the 2019 annual report.
- 2) Use online discussion forum to solicit other useful links to include on the RRN website.
- 3) Use online discussion forum to solicit feedback on future data hosting needs for the RRN website.

#### 2020 ACCOMPLISHMENTS:

1. In May 2020, Bob created a new page at the RRN site called “Online Resources for Rhododendron Studies” ([http://www.rhodo-research.net/rhodo\\_information.htm](http://www.rhodo-research.net/rhodo_information.htm)) under the Research Tools and Information Exchange section. This page included all of the links that were shown in Appendix B of the 2019 annual report.
2. Instead of using the forum for suggestions for other resources, Bob created a submission form for users to suggest additional resources to add at the “Online Resources for Rhododendron Studies” page. These suggestions are approved by Valerie before being added to the page.
3. Valerie posted a topic in the forum under the Rhododendron Research Network category in May 2020 asking for suggestions for future data hosting but no one has responded.
4. In late 2020, an opportunity arose to consider working with Nick Yarmoshuk and Christina Woodward to conduct a pilot project using their database RA-Metrics, as a potential foundation for a larger R-RN database. Juliana Medeiros is coordinating conversations of R-RN members with Vio Ivanescu (database developer) to set up the pilot project and write a grant proposal to fund the pilot.

#### 2020.4 Newsletter mailing list assessment and survey

Led by Juliana Medeiros

- 1) Publish two newsletters, in January and July
- 2) Review Newsletter analytics prior to January 2020 newsletter publication.
- 3) Investigate potential avenues for engaging individuals who are receiving but not opening the letter
- 4) Work on adding new contacts, and cleaning up invalid and bounced contacts.
- 5) Consider how best to serve engaged individuals, including considering targeted email campaigns for those who have demonstrated strong engagement.
- 6) Devise a survey based on the working groups that will be conducted at ARS 2020 meeting, to administer to those who are highly engaged in our email list.

2020 ACCOMPLISHMENTS: Along with the help of steering committee members Bob Wiessman, Jean Burns, Valerie Soza and Emily Gillespie, Juliana created a survey that was sent by email to

R-RN Steering committee members and to people signed up on the R-RN participant list, and sent to our mailing list in the July 2020 newsletter. A document entitled “2020 R-RN Survey Results” is included as a supplement to this report.

### 2020.5 Create and share content on a Blog

Led by Erik Nilsen

Erik will work with Bob Weissman to determine where the Blog will be hosted. Bob already has code for a blog page. Blog posts will cover topics relevant to R-RN members, and submissions from R-RN members will be encouraged. Blog posts will be amplified through Twitter activities of Ryan Fuller (See action item #6).

2020 ACCOMPLISHMENTS: This action item was put on hold due to extenuating circumstances of the pandemic.

### 2020.6 Create and share content on Twitter

Led by Ryan Fuller and Juliana Medeiros

Ryan will use his personal Twitter account to make at least 12 posts about Rhododendron which include a link to the ARS or R-RN webpages. Ryan will use Twitter analytics to track content engagement, which will inform future decisions about whether to create a dedicated R-RN Twitter account.

2020 ACCOMPLISHMENTS: Ryan Fuller faced challenges this year in conducting this social media objective, mainly it was found that one could have a full-time job doing this (as certainly some do), and difficulties associated with the pandemic put an extra drain on everyone’s productivity. Based on this, Ryan and Juliana Medeiros created a revised Social Media Plan that was approved by the steering committee in early June. A document entitled “2020 Social Media Marketing Report” is included as a supplement to this report, wherein we describe the revised plan and outcomes in detail. Briefly, the outcomes were as follows:

- We created an R-RN Facebook Page (June 2020) and Twitter Account (January 2021).  
View/follow the Facebook page here: <https://www.facebook.com/RhodoResearchNet>  
View/follow the Twitter page here: <https://twitter.com/RhodoResearch>
- We purchased a subscription to Loomly, which automates posts.
- We posted content resulting in a total of 16,600 Facebook engagements from July 2 to September 30th.
- We used the “Boost” feature in Facebook twice to increase engagement, each time spending \$20 and each time gaining approximately 5000 additional engagements.
- We used email and newsletter articles to call for contributions and to advertise the Facebook page.
- We learned that our Facebook page has mostly a public audience, while the Twitter page has mostly scientific audience.

## 2020.7 Support Transition to new ARS Research Committee Chair

Led by Karel Bernady

Karel will work with the new Chair of the ARS Research Committee, Juliana Medeiros, to make an effective and seamless transition in time for March 1, 2020 proposal deadline.

**2020 ACCOMPLISHMENTS:** The transition to new research chair was accomplished in summer of 2020 without much difficulty. Karel provided extensive documentation of the processes involved, along with much needed handholding through the first round of proposal reviews. The committee worked to develop a new document “Guidelines for ARS Research Reporting” and streamlined the communication between grantees and the committee.

## 2020.8 Consider applications for funding R-RN

Led by Jean Burns

For 2020, I plan to Consider how organizations like the National Science Foundation could support R-RN goals and activities, such as through the Research Coordination Networks (RCN) proposal mechanism. I anticipate that a successful process would lead to an application in 2021.

Specifically, I will:

1. Read funded abstracts of previous funded RCN proposals.
2. Poll R-RN network participants about potential interest in the development of an RCN proposal.
3. Brainstorm proposal ideas with members to fund our shared vision of an R-RN that:
  - a. Encourages training and participation of early career (undergraduate, graduate student, postdoctoral scholar) participants in the R-RN.
  - b. Enhance research infrastructure for data sharing and open data repositories for critical Rhododendron research needs identified by R-RN members.

**2020 ACCOMPLISHMENTS:**

- Our survey indicated that a few R-RN members are interested to develop proposal ideas and participate in workshops or collaborative experiments. See accompanying document “2020 R-RN Survey Results” for further details.
- Jean developed a proposal to NSF with broader impacts to fund R-RN working groups and travel. This proposal is expected to be submitted in 2021, see action items for 2021.
- Jean and Juliana worked with ARS members Christina Woodward and Nick Yarmoshuk to identify potential ways that their RA-METRICS system could be expanded to accommodate and support R-RN research activities. Jean will submit a proposal to Case Western Reserve University in January 2021, see action items for 2021.

## 2020.9 R-RN activities at ARS 2020 Spring meeting

Led by Juliana Medeiros

I will organize and promote a research poster session (Saturday May 2, call for abstracts is attached as a supplement) and R-RN working group(s) (day/time TBA). The poster session will include any type of research on Rhododendron, including formal research programs and citizen science. We will recruit poster presenters based on personal email campaign to take place in October 2019 using our newsletter email list. Our working group(s) will discuss:

- 1) What is our vision for R-RN over the long term? Where to focus our efforts? We will brainstorm ideas about: a) R-RN as an information resource, a place where people find and contribute data and ideas, 2) R-RN as organizers, a group that creates opportunities (i.e. conferences, experiments, grants).
- 2) How to matriculate R-RN engagement to R-RN sign ups and ARS memberships? Based on newsletter clicks, researchers are interested in the ARS research grants, but clicks on other ARS pages have been next-to-nil and most people who have interacted with the R-RN have not signed up on our “participants” list. We will brainstorm ideas about: a) how to engage more R-RN members in ARS, b) how to motivate people to add their name to the R-RN participant list.
- 3) How can we intersect with the Student Initiative being proposed by Christina Woodward?
- 4) What do people want R-RN to do for them? How can we encourage people to get more involved? What do we want to find out from our R-RN survey to mailing list?

2020 ACCOMPLISHMENTS: We worked with meeting organizers to make a lovely plan for a great poster session that included 8 researchers, but the coronavirus pandemic handily scuttled plans for in-person meetings, so this project was put on hold. We did use the newsletter to conduct a survey about what R-RN can do for folks and how we can get them more involved, this assessment is shown above in Action Item 2020.4.

## 2020.10 Publish article(s) about R-RN in JARS

Led by Glen Jamieson

Glen will solicit articles by R-RN members for publication in JARS.

2020 ACCOMPLISHMENTS: We received a submission for JARS from R-RN member Gerardo Nunez in 2020. We also advertised the opportunity to submit articles to JARS on the R-RN Facebook Page but did not get any takers. In retrospect this is likely because our Facebook Page is mostly followed by members of the public, while Twitter is a better place to intersect with the scientific community.