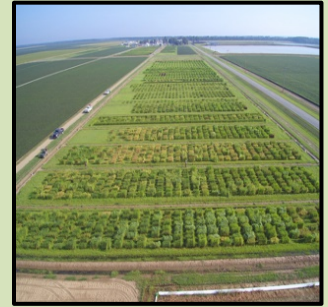




**Dale Bumpers National Rice Research Center  
USDA-ARS  
Stuttgart, Arkansas**



**MARCH 2020**

**MONTHLY RESEARCH HIGHLIGHTS**

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- **Recent Scientific Publications**

David M. Goad, **Yulin Jia\***, Andrew Gibbons, Yan Liu, David Gealy, Ana L. Caicedo and Kenneth M. Olsen. 2020. Identification of Novel QTL Conferring Sheath Blight Resistance in Two Weedy Rice Mapping Populations. Rice <https://doi.org/10.1186/s12284-020-00381-9>. Published online March 23, 2020.

Rice sheath blight disease is one of the most devastating diseases of rice and causes significant yield losses worldwide. By identifying genetic markers associated with increased resistance to this disease, new lines can be bred to reduce this loss in yield. We looked for resistant markers derived from two different types of US weedy rice, which despite appearing to be more sheath blight resistant than crop varieties, have never been investigated. We found nine regions of the rice genome that contain markers associated with sheath blight disease resistance. However, these markers are frequently associated with plant height or heading date rather than sheath blight resistance. By using advanced statistical models, we were able to overcome this confounding and reveal that four of our nine regions are associated with actual disease resistance rather than plant height or heading date. Three of these appear to have never been identified before and will be of use to breeders attempting to produce disease resistant rice varieties. Our modeling approach will also enable researchers to more accurately find markers linked to their trait of interest.



- **Technology Transfer**

- ✓ **Interactions with the Research Community**

On March 9<sup>th</sup>, the Center hosted a visit by Dr. Nathan Vanier from the Federal University of Pelotas, Brazil. He is the Coordinator for the Latin American Network for Rice Quality. He presented a



seminar on “Brazilian Rice Quality and Production Overview: Challenges and Perspectives” and was accompanied by Dr. Rosana Colussi, from the same university, and Dr. Ya-Jane Wang, from University of Arkansas, Fayetteville.

✓ **Rice Germplasm Distributed**

During the month of March, 252 rice accessions from the Genetics Stocks *Oryza* (GSOR) collection were distributed to researchers in the United States. Pure seed of specialty rice varieties were delivered to rice growers in AR, SC, MS, and MD.

• **Stakeholder Interactions**

On March 2, Dr. Jinyoung Barnaby, DBNRRC scientist and the DC chapter president of association of Korean American Women in Science and Engineering (KWiSE) and other KWiSE chapter leaders met with the Korean minister, Mr. Seok-In Hong, the agricultural attache, Mr. Hae-Dong Seo, and a quarantine officer, Dr. Jung-Ju Kim at the embassy of the Republic of Korea, in Washington D.C. The KWiSE representatives discussed the planned 2020 scientific conference on Artificial Intelligence, Ethics and Life Science, virtual seminars, and other activities that include career development, professional collaborations, and mentoring opportunities that may lead to future collaborations and exchanges with South Korean counterparts.

• **Education and Outreach**

Dr. Shannon Pinson was interviewed as part of an article published as a Front Matter Story on the Proceedings of the National Academy of Science news blog on March 7, 2020 regarding the impact on agriculture and the environment of the recent finding of a rice gene that increases rice tiller production even under low soil-N conditions

<http://blog.pnas.org/2020/03/rice-gene-could-make-green-revolution-plants-greener-by-cutting-back-on-fertilizer/>

On March 9<sup>th</sup>, research conducted by Dr. Ming-Hsuan Chen’s project was highlighted by the ARS information staff in an article “Making Rice Even Nicer”. This described her research on identifying and quantifying anti-oxidant compounds found in rice varieties with pigmented bran.

[https://tellus.ars.usda.gov/stories/articles/making-rice-even-nicer/?utm\\_medium=email&utm\\_source=govdelivery](https://tellus.ars.usda.gov/stories/articles/making-rice-even-nicer/?utm_medium=email&utm_source=govdelivery)



On March 13, Dr. Yulin Jia attended online virtual orientation of career development mentoring program (CDP) organized by Federal Asian Pacific American Council. This year Dr. Jia was assigned two mentees, one from internal revenue service (IRS) in California and one from Department of Veteran Affairs (VA) medical center in Chicago. The CDP is a six-month long mentoring program created to support the Federal government's vision of achieving and maintaining a diverse, inclusive, high performing workforce by mentoring the next generation of leaders. The goal of CDP is to provide mentees with career development training and to facilitate personal and professional learning and growth.