



SUSTAINABLE BIOECONOMY
FOR ARID REGIONS

Extension & Outreach Newsletter

December 2021; Volume 2, Issue 3

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SBAR Highlights

SBAR Briefing Papers Now Available

The SBAR Center has released a series of Briefing Papers on a range of topics related to SBAR research and future opportunities. These documents provide a comprehensive review of accomplishments to date. Detailed information about resin opportunities, rubber production and range expansion are all included. To find these documents, head to our website (<https://sbar.arizona.edu>) or use the links below. Additional briefing papers will be added to the website in the first quarter of 2022.

[Sustainable Bio-Economy for Arid Regions](#)

[Guayule Growing Range Expansion in the Southwest](#)

[Guayule Resin for Adhesives](#)

[Guayule Resin Insect Repellents](#)

[Sustainability of Guayule-based Natural Rubber Production](#)



SBAR Teacher Partner is Arizona's First National STEM Scholar

CONGRATULATIONS JAIME CAMERO!

We recently learned that Jaime Camero, a 6th grade teacher at Walter Douglas Elementary School in Tucson, was selected as a National STEM Scholar. Jamie is one of just ten national STEM Scholar teachers in the United States.

Learn more about the STEM Scholar Program and Jaime's plans for the Challenge Project she will implement during her Scholar Year on our [website](#).



SBAR Internships in 2022

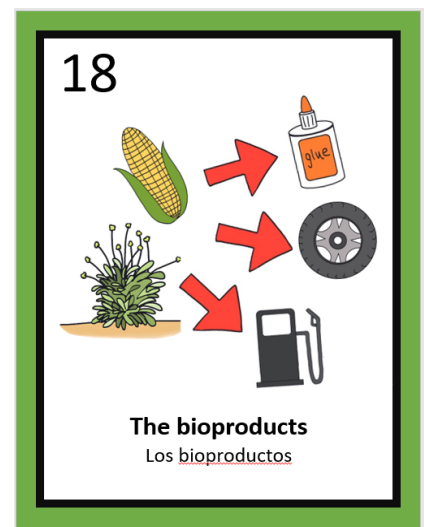
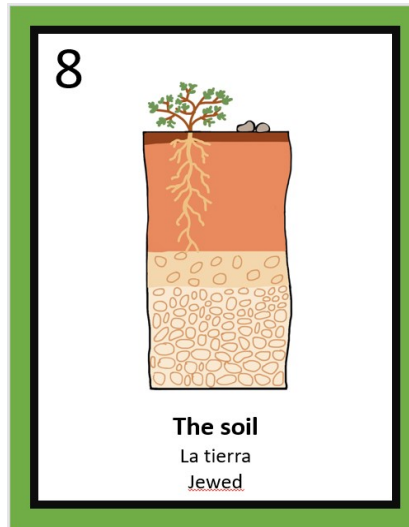
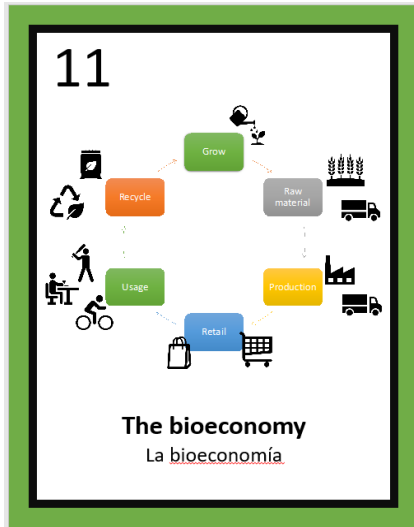
SBAR Summer Internships for high school and college students are back for 2022.

SBAR Explorer Internship Program is a 2-week immersion into SBAR data, the scientific method, and how to conduct research at the University of Arizona campus.

SBAR Research Internship Program is an intensive 6-week program with students working alongside SBAR researchers in either Pima, Pinal or Maricopa county.

Application materials will be available in January, with a submission deadline in March. Find the details on our [website](#).

Let's Play SBAR Lotería



SBAR Education Fellow Arisbeth Ibarra Nieblas shares her inspiration for the SBAR Lotería

I have played lotería as far as I can remember. The lotería, or 'lottery,' is similar to bingo but with images. The ultimate winner of the game is whoever fills the 16 spots on their board first and screams *llena*, or 'full' in English.

This was my great-grandma's favorite game, and I have many fun memories of family members and neighbors gathering in her backyard to play. Mainly adults played and they were serious about winning, especially my great-grandmother since we were playing for money. I always had to bring my best game because the more I lost, the faster I finished my money and the faster I stopped playing.

I learned new vocabulary, reading, focusing, and good sportsmanship from lotería. And this is how the SBAR themed lotería originated. As an SBAR Fellow, I develop science lessons and activities for middle schoolers.

The lotería has cards in English, Spanish, and selected cards in the language of the Tohono O'odham to reflect the place-based nature of this version of lotería. This lotería is inspired by the Sonoran Desert, agriculture in arid regions, bioeconomy in arid regions, and the SBAR project. Educators can use the cards to teach vocabulary and concepts about arid lands. The cards can also be used in story telling activities with students developing a concept, process or story to connect a set of cards.



SBAR is seeking middle school educators to try out and adapt classroom lessons and activities including the SBAR Lotería. Support is provided by presenters and facilitators (virtual and in person). Supplies are available. Contact Torran Anderson (torrananderson@arizona.edu) for additional information.

Extension: Guar and Guayule Research & Activities

Guar Bubble Magic at Clovis Agricultural Science Center

The Agricultural Science Center (ASC) at Clovis welcomed over 700 students and teachers to “Cultivating Young Minds”, a program for 5th graders from Clovis, Melrose, Grady, and Texico School Districts on October 13th & 14th. They learned about agricultural food production, with a focus on pumpkins in honor of Halloween. ASC researchers taught how crops are grown, where our food comes from, and the life cycle of a pumpkin. Each student picked a pumpkin from the field to take home.



Making guar bubbles was the highlight of the day. SBAR agricultural researchers used SBAR guar and guar gum curriculum. Students learned where guar gum comes from and its use as a thickening agent in the food we eat. In order to demonstrate how stretchy guar gum is, an experiment comparing bubble sizes with a solution containing guar gum and a solution without guar gum was performed. The students were amazed by how big the bubbles containing guar gum were and understood better the utility of guar gum powder. Students would jump and try to pop the enormous bubbles exclaiming “It’s like magic!” and “How is this even possible?”. If you would like to learn more about growing guar, latest guar research or creating guar bubble magic, reach out to Sangu Angadi (angadis@nmsu.edu).

Report by Mallory Nielson, Paramveer Singh and Sangu Angadi

STEM in Action at 4-H Training

On Saturday, November 13, Arizona 4-H Staff and Volunteers convened at the Maricopa County Cooperative Extension office in Phoenix for a day of science curriculum exploration. The event was led by Arizona 4-H STEM Specialist Dr. Jerry Lopez, Instructional Specialist Andie Rodriguez, and Arizona Cooperative Extension Equine Specialist Dr. Betsy Greene. Participants enjoyed a full day of learning about the variety of science and agricultural education tools Arizona 4-H offers to educators and other youth development professionals. Our plans for future events include an increased focus on curriculum developed by the SBAR team. Join us in 2022: Saturday, February 26 at Blue Ridge High School in Lakeside, Arizona and Saturday, March 26, Yavapai County Cooperative Extension Office in Prescott, Arizona.



Report by David Shafer

Guayule Irrigation Research Continues

With irrigation water allotments in Arizona being reduced by the Colorado River water shortage, Bridgestone and SBAR are making a push to raise awareness and increase acreage of guayule production. Ongoing research in irrigation water and nutrient management has indicated a potential for lower input requirements than originally expected, increasing the attractiveness of this cropping system. Be on the lookout for new fields of guayule in 2022 in our effort to bring alternative cropping options to Central Arizona.



Soil moisture probe installation

Report by Blase Evancho

Connect with SBAR

Recruiting: Growers for Trial Plots

Contact: John Idowu for guar in New Mexico

Contact: Blase Evancho for guayule in Arizona

Recruiting: Educators

SBAR is seeking middle school educators. Please see note on bottom of page 2.

Join Us: STEM Workshops

Feb 26, 9am to 3pm at Blue Ridge HS, Lakeside, AZ

March 26, 9am to 3pm at Yavapai County Coop Ext, Prescott, AZ

Contact: David Shafer

SBAR Plant Guide on Guar

Available 2022

Contact: John Idowu

SBAR Agronomics on Guayule

Available 2022

Contact: Blase Evancho

SBAR Whole Farm Analysis Tool for Evaluating the Adoption of Guayule and Guar into Your Current Operation

Available 2022

Contact: Trent Teegerstrom

Comings & Goings

SBAR wishes Nick Morris well as he heads off to Ohio this fall. We appreciate all he has done in his role as the 4-H Youth Development lead in Arizona. Thank you Nick!

We are looking forward to getting to know David Shafer, our new Arizona 4-H lead. David is Program Coordinator for statewide 4-H and is focused on STEM Workshops, internships and curriculum development with SBAR.

We are welcoming Jacqueline Bruhn to the project. Jacqueline comes to us with a background in curriculum development, sustainability and extension work. She is an SBAR Program Coordinator with a focus on youth outreach, education and curriculum. Welcome David & Jacqueline!



Warmest Holiday Wishes from the SBAR Team. May 2022 bring peace and good health to all.

Education



Catie Brewer - New Mexico
cbrewer@nmsu.edu



Torran Anderson - Arizona
torrananderson@arizona.edu

Extension

Guar - New Mexico
John Idowu
jidowu@nmsu.edu



Guayule - Arizona
Blase Evancho
bee1@arizona.edu



Sustainability

Trent Teegerstrom - Arizona
tteegers@arizona.edu



Youth Development



Frannie Miller - New Mexico
4-H Contact
franniem@nmsu.edu



David Shafer - Arizona
4-H Contact
dahveed@arizona.edu



Natalie Brassill - Arizona
Internship Contact
nbrassill1@arizona.edu

We would love to hear from you! Contact our team directly at the email addresses provided.

Check out the SBAR website for more information about the program, research and resources: <https://sbar.arizona.edu>

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National Institute
of Food and
Agriculture

