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## A Conversation with a Biometeorology Researcher and Scientist: Paul Brown

By Julie Murphree, Arizona Farm Bureau Outreach Director

Dr. Paul Brown serves as Extension Specialist and Research Scientist in the Department of Environmental Science, and Assistant Dean and Associate Director for Agriculture and Natural Resource Programs for Arizona Cooperative Extension at the University of Arizona.

Known for his engaging talks about Arizona's water future, Dr. Brown developed the Extension Biometeorology Program at the University of Arizona and is responsible for conducting applied research and Extension programming in such areas as agricultural meteorology, crop and turf water requirements, irrigation and salinity management, heat stress and frost management.

He developed and oversees the operation of the Arizona Meteorological Network, a network of automated weather stations that provides weather-related information to producers of agricultural and horticultural crops.

You've probably heard him speak. For farmers and ranchers, one of the most important areas to watch and understand is weather. So, Dr. Brown always engages in great discussions on this topic. After hearing him present more than once, I felt it was time he and I had a Q&A about Arizona agriculture and our water future.

**Arizona Agriculture:** As a biometeorology researcher and scientist, your perspective on Arizona climate uncovers insights that are unseen to the layman. Along with Arizona's 300+ days of sunny weather for year-around growing for agriculture, what else does this state's climate reveal to you that we don't often pay attention to or recognize?

**Brown:** The other meteorological factor that plays an important role in agricultural production is low humidity. We are all familiar with the refrain, "but it's a dry heat!" when discussing the fact that high air temperatures are less uncomfortable in Arizona than in most places. The reason for this is that water lost through our skin via sweat evaporates more readily than in more humid climates. Evaporation consumes huge amounts of energy which lessens the thermal load on our bodies. The same is largely true for our agricultural crops, but in this case, it is the evaporation from the

crop (transpiration) that cools our crops and helps keep them in optimal thermal environments that lead to very high yields. The positive impacts of low humidity continue after dark. Humidity, or water vapor, is a greenhouse gas that absorbs infrared radiation from the surface and then reradiates some of this energy back to the surface.

On low humidity nights that are common in the spring, fall and early summer, less infrared energy is reradiated back to the surface, resulting in cooler temperatures that are often more optimal for crop production. We all notice the impact of elevated humidity during the monsoon. We are less comfortable during the day and experience elevated temperatures at night. Crop performance often deteriorates during the monsoon as higher humidity levels produce elevated night temperatures and lessen the effectiveness of evaporation during the day, leading to elevated, less optimal crop temperatures.

Higher humidity isn't always a negative for Arizona agriculture. Extended periods of low humidity during the late spring and early summer can be a challenge for hay producers because curing and baling operations result in more leaf shatter and loss. Higher humidity helps rehydrate cut hay, leading to better baling conditions during the evening and early morning hours. Growers of frost sensitive crops prefer higher humidity and clouds during cool or cold periods. Again, the higher humidity results in less energy loss from the crop surface, lessening the chances for frost.

**Arizona Agriculture:** Give an overview of what we're facing here in Arizona with our climate and weather issues?

**Brown:** An old adage in agricultural meteorology says, "farmers farm the weather, not the soil." This adage is particularly true in Arizona given the quality and fertile nature of our agricultural soils. Within a growing

season extreme or variable weather often limits the productivity of agricultural operations. This past year provides an excellent example of the challenge of farming around weather. Last fall there were problems with excessive wetness as remnants of tropical storms passed through the state. The wet fall extended into the winter and spring

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Says Paul Brown, "farmers farm the weather and thus are experts at working around challenging weather conditions"

## Arizona Agriculture Celebrates the Passage of USMCA

By Julie Murphree, Arizona Farm Bureau Outreach Director

In an 89 to 10 vote last month the United States Senate passed the United States Mexico Trade Agreement (USMCA) sending the trade agreement to President Trump. Evidence of the excitement of this deal included a record high in the stock market on the day of passage. Several Arizona leaders are equally excited.

"The USMCA is crucial for the future of agriculture in the state of Arizona," said Arizona Farm Bureau President Stefanie Smallhouse. "Canada and Mexico are Arizona's top trading partners totaling an annual value of \$1.7 billion in agriculture exports including dairy, beef, fruits, vegetables, wheat, and pork. Smallhouse and a farm and ranch delegation from Arizona met with administration officials at the White House and Congressional representatives last year to advance the cause of agriculture in our state and especially stress the importance of free trade. She and her husband, Andy, farm and ranch in Pima County.

Smallhouse added, "The agriculture industry is already having tough times. This trade agreement will bring some relief to Arizona agriculture producers as well as pave the way for new opportunities in the future. With both the USMCA and the China Trade deals secured, it brings more certainty to farm and ranch families and puts everyone on notice that we are open for business. Arizona's farmers and ranchers are ready with high quality food and fiber products to fill local and global demands."

Arizona's U.S. Senators also had praise for the bill. U.S. Senator Martha McSally (R-AZ) said, "Good news for Arizona's workers, farmers, ranchers, and businesses is finally on its way. For over a year, I have advocated tirelessly to get USMCA to the president's desk. I have met with hundreds of employees and local businesses to hear how their livelihoods will only be improved with the passage of USMCA and the opportunities it will bring.

"Arizona's economy is heavily reliant on cross-border commerce with Mexico and Canada. It sustains more than 228,000 Arizona jobs and over \$9 billion in exports to our neighbors. This trade agreement will harness job growth and spur economic activity by modernizing the antiquated guidelines stifling greater and wide-ranging opportunities for cross-border commerce."

Also, U.S. Senator Kyrsten Sinema (D-AZ) echoes the same sentiments.

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More than One!

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They Go National!

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Raise Big Dollars for Kids



**Brown**

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months and was accompanied by very cold temperatures in February and May, leading to a challenging spring planting season. Since July, the pattern has generally been hot and dry with limited precipitation. High night temperatures were associated with mid-summer heat and resulted in less than optimal conditions for cotton fruit retention and alfalfa quality. From my perspective, this has been one of the more challenging weather years in some time.

Longer term, Arizona farmers need to be aware of the changing climate. The agricultural sector is less accepting of the issues associated with climate change for reasons ranging from disbelief to concerns regarding future regulation. One of the challenges with climate change is that we are talking about warming trends of a few degrees over the course of an extended time period, perhaps 30 to 50 years. Given that temperatures vary by 30+ degrees nearly every day and by as much as 100 degrees over the calendar year, it's difficult for farmers to sense these changes, or to consider them important on a day-to-day basis.

Climate researchers have the same challenge at times and thus must look at long-term trends in temperature, precipitation, sea level, ice coverage and ocean temperatures to document climate trends. The trends in these and other parameters all indicate the climate is warming and perhaps becoming more variable.

As indicated in my earlier comments, farmers farm the weather and thus are experts at working around challenging weather conditions. That said, continued warming will force changes in production strategies and agriculture needs to remain engaged in the discussion on climate to ensure their voices are heard as government and regulatory bodies develop mitigation strategies, new research initiatives and legislation directed at climate related issues.

**Arizona Agriculture: What does last winter's weather, fall 2018 to winter 2019, mean for our water situation in Arizona?**

**Brown:** Last winter's wet weather prevented a first-ever shortage declaration on the Colorado River which is determined by the level of Lake Mead. Current projections from the Bureau of Reclamation provide some short-term optimism as they project no shortage in 2020 as well as 2021. However, long-range projections for the Colorado River rely heavily on existing river management rules and historical norms and thus are subject to considerable error. To greatly lessen the chances for a shortage declaration in the near future we need a repeat of last winter's heavy snowpack. As this most recent winter is so far looking, a second consecutive wet winter could result in an Equalization Release from Lake Powell, which is extra water over and above what is released in a typical year. Such a release could lift Lake Mead to levels that would eliminate the chances for shortage in the near term. Unfortunately, last summer was very dry across much of the Colorado River Basin. Drier basin soils will absorb a higher proportion of the snowmelt lessening the amount of water reaching the reservoirs next spring. [As of January 18th, when final preparations for this article were made Colorado's statewide snowpack was sitting at 123 percent of average, a positive sign.]

**Arizona Agriculture: Talk about the important lake levels in both Lake Powell and Lake Mead.**

**Brown:** The two main reservoirs on the Colorado River, Lakes Mead and Powell, are managed using guidelines established in 2007. The guidelines can be quite confusing and involve a lot of "if... then" statements based on lake levels to determine how water is managed in the two reservoirs. The most discussed level is 1075' in Lake Mead which defines a Tier 1 shortage and lowers the water allocation for Arizona, Nevada and Mexico.

Other levels of importance are 1050' and 1025' which define the more severe Tier 2 and Tier 3 shortages that require greater reductions in water allocations from the river. The Drought Contingency Plan further reduced the allocations of Colorado River at the Tier levels and added two additional levels: the higher 1090' level wherein Arizona must start restricting its use of Colorado River water and the 1045' level at which California must now reduce its use of Colorado River water.

The two most important levels in Lake Powell are 3575' when water releases to Lake Mead are reduced and the current Equalization Level of 3655' where additional water is released to Lake Mead. One of the factors driving the push for the DCP last winter was the fact that Lake Powell was projected to drop below 3575', which would have reduced flows to Lake Mead and created a Tier 1 shortage. The wet late winter last year lifted Lake Powell above this critical level and prevented the shortage. Lake Mead is presently well above the 3575' level (3617') but well below the 3655' level that would support an Equalization release. A repeat of last winter's above normal snowpack could lift Lake Powell to this important level and provide some longer-term relief for Lake Mead.

**Arizona Agriculture: Talk about the DCP and what it means to Arizona agriculture overall.**

**Brown:** The Drought Contingency Plan (DCP) represents an effort on the part of the Upper and Lower Colorado River Basin states to minimize the chances of Lake Mead dropping to levels that severely restrict access to water and power generation. The DCP when combined with the existing shortage guidelines attempts to minimize or remove the so-called "structural deficit" in Lake Mead wherein water usage exceeds water allocation in the Lower Basin. The major impact to agriculture will be in Central Arizona where growers may lose access to Colorado River Water and be forced to utilize groundwater for irrigation before the originally schedule transition in 2030. The operational word is "may" as more wet winters could lessen the chances of a shortage declaration before 2030.

**Arizona Agriculture: What are your predictions for Arizona agriculture's water future?**

**Brown:** Access to affordable water will be a tremendous future challenge for the agricultural industry. Water is in short supply and the demand for water in the state's urban centers is growing and likely to continue even with ongoing and future conservation efforts. Reductions in surface water resulting from shortage declarations and drought will require agriculture to use more groundwater which may prove more costly and could be limited by ADWR regulations. Agriculture will need to redouble its efforts related to irrigation system management and conservation. I see a future with enhanced monitoring and automation and where irrigation consultants are as common as PCAs are today.

**Arizona Agriculture: What technologies might save us?**

**Brown:** The development of profitable, low water use crops and genetic improvements in heat, salinity and stress tolerance will be needed in the future. I expect the field of Precision Agriculture will continue to provide new ways to better manage water and minimize crop stress.

One should never underestimate the power and potential of technological advances. When I look back over my 50 years of involvement in agriculture, both in the Midwest and in Arizona, I am amazed at how technology has changed the agricultural industry.

**Arizona Agriculture: Overall, where do you see Arizona agriculture in 20 years.**

**Brown:** I envision a smaller and more diverse agriculture. Urbanization and water issues will reduce the aerial extent of irrigated agriculture but will not eliminate irrigated agriculture nor the vast tracks of rangeland supporting cattle production.

Arizona will continue to produce forages to support the meat and dairy needs of a growing population, but water shortages will force more production of specialty crops that use less water or can be grown during the winter or shoulder seasons [periods between the high and low seasons of a given destination].

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## More On Trade

By Tyler Davis, Government Relations Manager

The United States has successfully reached several new international trade agreements within the past several months. Beyond the China and U.S. agreement and the USMCA last month, these other agreements will also help buoy agriculture in our state and across America.



On October 7, 2019 the United States and Japan signed a trade agreement on agricultural and industrial tariffs and

digital commerce. This agreement became effective on January 1, 2020. On December 13, 2019 the United States and China reached a consensus on a phase one trade agreement on agricultural purchases and tariff levels. This agreement was signed on January 15 this year. Finally, the U.S. Congress passed the United States Mexico Canada Agreement (USMCA) a day after the China agreement, only missing the President's signature that day.

After months of tumultuous back and forth negotiations with China this phase one agreement was a huge step in the right direction. Agriculture producers especially tree nut, alfalfa, wheat, meat, pork, and cotton producers have been hit hard by the tariffs enforced by China. Many of these producers are in Arizona and have not been shy about sharing the negatives affects. These producers are eligible for government subsidies but would prefer an open and equal market rather than government handouts. The phase one agreement is a step forward to a vast and beneficial trade agreement with China. As long as the trade talks stay on track the agriculture community will hope for a continuous ease on tariffs. Fortunately, Arizona agriculture producers understand the long game. They understand that it takes time for a fair and equal trade agreement. A complete trade agreement with China will not happen overnight. However, China has the second largest economy in the world. So, a fair and equal trade agreement between the two countries is imperative.

A tri-lateral agreement, The USMCA was several years in the making and then it took over a year to get to the House of Representatives to be voted on and passed. When it initially passed in the House the trade agreement only had to pass through one committee then onto the House as a whole. In the Senate, the trade agreement had to pass through the following Senate Committees: Finance, Health, Education, Labor and Pensions, Environment and Public Works, Appropriations, Foreign Relations, Commerce, Science and Transportation, and Budget.

The Senate Finance Committee approved of implementing the USMCA with a 25-3 vote on January 7, 2020. The rest of the committees held their committee meetings on the USMCA on Wednesday, January 15, 2020. On Thursday, January 16, 2020 the Senate as a whole passed the USMCA with a vote of 89-10.

The passing of the USMCA is a huge victory not only for agriculture but all industries for the three countries. This trade agreement is viewed as a springboard for other international trade agreements to come. The passing of this agreement ensures the presence of the United States on the international stage as a serious economic player in the world market that is open for business and united ready to make new trade agreements with countries willing to do business. 📧

## USMCA continued from page 1

“Cross-border trade means more Arizona jobs, a stronger economy, and greater opportunity for Arizona families. I’m proud to have worked with my colleagues on both sides of the aisle to advance the United States-Mexico-Canada Trade Agreement, and I am glad the Senate approved this critical agreement with bipartisan support.”

The U.S.-Mexico-Canada Trade Agreement is an agreement to modernize the 25-year-old NAFTA trade agreement by the governments of the United States, Mexico, and Canada. Arizona Farm Bureau and the American Farm Bureau (AFBF) have lobbied Congress for some time now to make this all happen. The passage of the USMCA comes as farmers and ranchers continue to face strong economic headwinds; it can only buoy American agriculture’s hope for a better future. The agreement is expected to increase U.S. agriculture exports by billions of dollars.

“This trade agreement comes at a critical time for farmers and ranchers, increasing optimism that we’ll turn the corner in 2020,” said American Farm Bureau President Zippy Duvall. “USMCA is an important step toward restoring the competitiveness of America’s farmers and ranchers, strengthening our trade relationships in North America and setting an example for agreements with other important trading partners.”

The USMCA is expected to result in a \$65 billion increase in gross domestic product. Canada will increase quotas on U.S. dairy products, benefitting American dairy farmers by \$242 million. Canada will also treat wheat imports the same as domestic wheat for grading and pricing.

“We commend President Trump, the House and the Senate for working together in a bipartisan manner to enhance these important trade relationships and help jumpstart our ag economy,” Duvall added. “Their leadership shows a dedication to protecting the livelihood of millions of Americans on the farm and throughout the food system.”

The USMCA vote comes just one day after the United States signed a new trade agreement with China, which promises to increase agricultural exports overseas by tens of billions of dollars.

Duvall said, “USMCA, the China trade agreement, the recently enacted U.S.-Japan Trade Agreement, and the U.S.-South Korea Rice Agreement are moving us toward rebalancing the scales of international trade. It is important this trend continues as the U.S. negotiates agreements with other international trading partners. We’re making great strides in giving farmers and ranchers fair access to the global market again.”

Additional trade agreements worthy of attention include the U.S.-European Union negotiations, as well as an agreement with the United Kingdom as it leaves the European Union.

Mexico has already ratified the USMCA, and the agreement will go into effect once Canada approves the finalized agreement. 📧

## AgPAC: Double Your Money and Stop Bad Bills Before They Start

By Chelsea McGuire, Government Relations Director

The 2020 Legislative Session is already off to a roarin’ start. Before the first five days were complete, legislators had filed a whopping 850 bills, more than most of us have ever seen by this time in the year. And as I’ve spent hours sorting through the good, the bad, and the ugly of this proposed legislation, it has made me even more thankful for our political action committee, AgPAC.

Let’s look at the agriculture and water titles, for example. As of the writing of this article in mid-January, there are a little more than two dozen bills proposed to modify those articles. Most of them are good bills - including the “Fake Meat” labeling bill, bills to strengthen the futile call doctrine, and improvements to the Livestock Loss Board – or bills on which we’re neutral. But mixed in the sprinkle of good and indifferent are a few very, very bad bills: a statewide ban on the use of Chlorpyrifos, an insecticide used on more than 30,000 acres in Arizona to help prevent pest resistance to other common pesticides; a bill decreasing the gallons a well can pump and still be considered exempt; and multiple bills either requiring or allowing metering on all non-exempt wells in the state. Among the good, there is some really not-so-good, and it can be tough to keep up sometimes!

You may wonder why we aren’t up in arms about these bills. Why aren’t we activating our grassroots, storming the Capitol, and tying up legislators’ phone lines? It’s because we have faith in those who lead the legislative process. You see, a really, really bad bill is unlikely to ever see the light of day when the right people serve as committee chairmen. The chairmen of a committee have full authority over his or her committee’s agenda. If the chairman believes it’s a bad bill, the chairman will not bring it up for a vote. Thanks to them, we don’t even need to get our base mobilized, because we can stop these bills before they go any further.

So why does this make me thankful for AgPAC? Because AgPAC supports legislators who understand, appreciate, and advocate for the issues important to agriculture. In doing so, we not only help ensure that legislative leadership knows the value of our industry, we ensure there are informed, intelligent people to choose from when leadership appoints the committee chairmen. Thanks to the stellar legislators who chair our water, ag, and natural resources committees in both the House and the Senate, we know that these bills will be stopped in their tracks before they can do any harm to Arizona’s food supply or economy.

Last year, we put new energy into AgPAC thanks to the generosity of the Arizona Farm Bureau. For every dollar contributed to AgPAC, a matching contribution was donated by AZFB to the Educational Farming Company, the 501(c)(3) arm of the Farm Bureau that helped show 100,000 students a positive message about agriculture in the last year alone. This year, we’re upping the ante: rather than capping the matched contributions at \$10,000, AZFB has agreed to increase its stake in the game and match everything up to \$15,000. That means that with just one contribution, you can inform today’s leaders and educate tomorrow’s voters.

Don’t miss out on your chance to keep the future of our industry safe. Contribute today to take advantage of the \$15,000 matching campaign!

To contribute, just go to [www.azfb.org/AgPAC](http://www.azfb.org/AgPAC). 📧



## Up Next with Ag Education: Farm Friday Fun Contests

Ag In the Classroom is off to a great start with two contests remaining for the Farm Friday Fun with Arizona Agriculture program. These contests offer an opportunity for classes participating in the program to share the knowledge



they’ve gained through their experiences. The first contest, completed in fall, required classes to share a video or book highlighting their desired agricultural careers (The focus of the program for September). The 1st place winner of that contest was Mrs. Peterson’s Kindergarten class at Faith Mathers Sossaman Elementary. Runner up prizes were also awarded to Mrs. Johns & Mrs. Belvado’s Kindergarten classes at Faith Mather Sossaman.

The two remaining contests will focus on cattle care, beef by-products, and eggs. Submissions can be made in the form of a book or video for one of the contests (Due March 1st), and a Hickman Eggs STEM Challenge for the other (Due May 8th). Winning classrooms will receive an Amazon gift card worth up to \$200.

Prizes for these contests were underwritten by the Arizona Farm and Ranch Experience. To find out more about contest details and how to sign up for Farm Friday Fun with Arizona Ag, visit [azfb.org/aitc](http://azfb.org/aitc). 📧



# Arizona's Young Farmers and Ranchers Go National

By Christy Davis, Arizona Farm Bureau Outreach Manager

Arizona Farm Bureau Young Farmers and Ranchers (YF&R) sent a delegation of members to the American Farm Bureau (AFBF) Annual Convention in Austin, Texas last month. This venue continues to provide a wealth of opportunities for Arizona's young farmers and ranchers, our future leaders.

The Young Farmers and Ranchers program is always looking for ways to offer leadership development opportunities to its members. One opportunity for active members is to attend the AFBF Convention where they take part in workshops and learning more about issues in our Agricultural industry. Participants regularly cite the variety of learning opportunities, plus the networking with their peers.

For the past two years the Arizona YF&R has taken four active members to the AFBF Convention where they join the rest of the Arizona Farm Bureau Delegation in listening to speakers and becoming stronger advocates for Agriculture. "The American Farm Bureau Farm Convention provides our members with the opportunity to network with agriculturalists throughout the nation that are facing similar trials and tribulations," says Ashley Jeffers-Sample, Arizona YF&R Chair. "The experience allows us to share stories, educational resources, and other tools that strengthen our ability to tell our story."

## Competition Fierce but Exciting at National

The Young Farmers and Ranchers program also holds contests at the National Convention, such as the Discussion Meet, Excellence in Ag, and Achievement in Ag. These contests consist of members who have been chosen by their state to compete on the

national level. This year Arizona Farm Bureau has a contestant in the Discussion Meet, Kirk Dunn of Yuma Arizona. Competing with more than 30 competitors, Dunn made it to the Sweet 16 and then to the Final Four, meaning he among three other competitors are the top four in the nation.

"I'm excited and humbled every time I am able to represent Arizona Farm Bureau," said Dunn. "It's a small way that I can give back to the organization that represents my family and my industry daily."

The Discussion Meet simulates a board meeting, where contestants discuss an agriculture-issues-related question that has already been given to them and try to come up with a solution using the Farm Bureau and organizations like it. Contestants are judged on their knowledge of Farm Bureau and ability to cooperate with each other. Dunn won runner-up. See full coverage on page 7.



Arizona Farm Bureau's Kirk Dunn competing in the Young Farmer and Ranchers' Final Four Discussion Meet in Austin.

## More AFBF Convention Highlights

For several years in a row, Arizona once again won the Pinnacle in our membership number category (2). This represents membership growth and innovation in programming. Because of Arizona Farm Bureau's membership growth, we now move into group 3 where the competition will be as fierce.

Additionally, Arizona's own John Boelts was part of podcast on the main stage discussing the media and our role as farmers and ranchers just before the U.S. President came on stage.

Arizona Farm Bureau had more than 40 delegates attend this year's AFBF Convention.



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# For the First Time, Governor's Ag Awards Recognize Industry Leaders

This past fall, the Arizona Department of Agriculture partnered with Governor Doug Ducey's office and gave out the Governor's Awards for Agriculture Last December.

From now on, these Agriculture Awards will honor individuals who have made outstanding contributions to Arizona agriculture while maintaining the highest ethical standards. Among several awardees, Cindi Pearson was the recipient of the Arizona Agriculturist of the Year award. Mark Killian, director of the Department of Agriculture, and Gilbert Davidson, chief operating officer for Governor Doug Ducey's office, presented the awards to recipients.



**Arizona Agriculturist of the Year**  
Cindi Pearson, Santa Rosa Produce



**Outstanding Arizona Woman Farmer/Rancher**  
Pamela Griffin, Rancher



**Outstanding Arizona Tribal Farmer/Rancher**  
Colleen Tessay, White Mountain Apache Tribe, Cattle Rancher



**Arizona Agricultural Legacy Award**  
The Sharp Family



**Agricultural Educator Award**  
Casey Farnsworth, Casa Grande H.S. CTE Teacher Leigh Loughead, AZ Western College Ag Science Manager

# ASU Students Study Agricultural Law

Last fall, eleven students enrolled in the Sandra Day O'Connor College of Law, taking the course in Agricultural Law. Interestingly, only three of the students were from Arizona, although some of the non-residents may choose to remain in Arizona after graduation.

There are various ways of approaching the teaching of agricultural law. The professor, Richard N. Morrison, explains that when considering ag law course offerings, most law students in the United States today seem primarily interested in environmental law, animal welfare, and food law. Acknowledging those interests, Professor Morrison has included readings on all those topics in his course, although he also covers agricultural financing (including discrimination in ag lending), ag labor law, livestock production and marketing, biotech and ag law, organic food marketing, and water law.

The course in agricultural law is offered as part of the program created by the Center for Law and Sustainability at the law school.

Professor Morrison has also used speakers from industry, so students hear directly from those most affected by state and federal regulatory structures. This last semester, guest speakers included Ken Van de Graaff from Rabobank, Andy Groseta (who has held many leadership positions representing the beef industry), and Kami Weddle, Director of Food Safety and Quality from Rosseau Farms. An optional plant tour at UDA's milk processing center in Tempe was scheduled.

In his experience, says Professor Morrison, people outside the school don't expect students interested in agriculture to be enrolled at the Sandra Day O'Connor College of Law, but his experience demonstrates one can find people with agricultural backgrounds and career interests right in the middle of our urban core.

Morrison started "campaigning" about five years ago for both ASU and U of A law schools to adopt new programs that will prepare the next generation of agricultural lawyers. He is pleased to see that both institutions have done that.

So far, the schedule has been every other year in the fall. So, maybe the fall of 2021. 🐾



Professor Richard Neely Morrison uses speakers from industry in his law class at Arizona State University, so students hear directly from those most affected by state and federal regulatory structures.

## AN EGG'S JOURNEY FROM HEN TO HOME

- 1. GRAIN PRODUCTION**  
Grains, like corn and soybeans, are grown and harvested by crop farmers.  
A laying hen eats about **78 LBS** OF HIGHLY NUTRITIOUS FEED PER YEAR.

**2. FEED PRODUCTION**  
After being harvested, grains are transported to feed mills to be mixed into specially formulated feed rations for specific species, including laying hens and growing chicks.

Today's hens use a little over **1/2** the amount of feed to produce a dozen eggs as compared to the mid-1900s.
- 3. BREEDER FARM**  
Here at breeder farms produce fertilized eggs.  
One breeder hen will lay about **120 fertilized eggs** in her lifetime, which later become laying hens.

**MANURE MANAGEMENT**  
Today's farms release significantly less polluting emissions, including **71% lower** greenhouse gas emissions.  
Most modern farms use a conveyor belt system to quickly and efficiently remove manure from hen housing into separate storage buildings. This helps manure dry quickly and reduces odor and pests.
- 4. HATCHERY**  
HATCHING EGGS INCUBATE FOR **21 DAYS** BEFORE CHICKS HATCH.  
1-2 days after hatching, chicks are moved to pullet barns.

**5. PULLET FARM**  
Hens are raised to approximately **16-18 weeks** old.  
Pullets are sent to layer barns just before they begin laying eggs.

Manure from hens is a natural, high-quality fertilizer sought after by crop farmers to use on their fields.
- 6. LAYING HEN FARM**  
One farm may have flocks ranging in age from 16-100 weeks that are housed in separate barns in a variety of housing environments, including traditional and cage-free housing.  
**85%** of all U.S. eggs come from farms that voluntarily participate in UEP Certified which sets some of the strictest industry standards of hen health and well-being.

**FOOD SAFETY**  
U.S. egg farmers meet or exceed all regulatory requirements for food safety, including compliance with the FDA's Egg Safety Rule.  
FDA U.S. FOOD & DRUG ADMINISTRATION
- 7. PROCESSING**  
Take place on-site at most integrated egg farms. Some farms have USDA grading on-site.  
About **70%** of eggs are sold as shell eggs.  
Today it takes **32%** less water to produce a dozen eggs.

**9. TRANSPORTATION**  
Fresh shell eggs are transported in refrigerated trucks, usually within 48-72 hours of being laid.
- 8. IN-LINE AND OFF-LINE BREAKERS**  
This removes the egg from its shell for further processing or to be sold as a liquid food product.  
About **30%** of eggs are sent to in-line or off-line breaking plants.  
Egg products may include liquid whole egg and liquid whites, which are pasteurized before sale, as well as powdered eggs or hard-cooked eggs.

**10. CUSTOMER**  
Eggs can be enjoyed in a variety of ways, as their own or as an ingredient in recipe recipes.  
One large egg contains **6** grams of high-quality protein and **13** essential vitamins and minerals for **70** calories.

UnitedEgg.com



## Arizona Farmer Wins Runner-Up in National Discussion Meet Competition

Young farmers and ranchers from around the country gathered in Austin last month to compete for awards by demonstrating knowledge of and achievement in agriculture, as well as commitment to promoting the agriculture industry. It's what makes American Farm Bureau Federation's (AFBF) Annual Conventions buzz with excitement! Arizona's own Kirk Dunn, farmer from Yuma, won runner-up in the Discussion Meet in Austin at AFBF's 101st Annual Convention.



Sierra Dunn, Kirk Dunn, Eileen Dunn and Tim Dunn stand in front of the tractor Kirk won as the runner-up of the national Discussion Meet Competition.

Christy Davis, John Boelts, and my dad Tim Dunn, and thanks to everyone who came to support me, especially my wife, Sierra Dunn, and Eileen Porter Dunn. Also a big shout out to CASE IH for sponsoring the discussion meet."

As Dunn stood in front of his new tractor he said, "Anyone need a ride home from Austin?"

Sarah Rudolph of Virginia won the Discussion Meet. She is the winner of a new Ford truck, courtesy of Ford. She will also receive paid registration to the AFBF Young Farmers & Ranchers Leadership Conference in Louisville, Kentucky, March 13-16.

Amie Osborn of Indiana is the third-place finalist, receiving a Case IH 40" Combination Roll Cabinet and Top Chest and a \$500 Case IH parts card, courtesy of Case IH. In addition, she will take home \$2,200 worth of Stanley Black & Decker merchandise, courtesy of Stanley Black & Decker. Fourth-place finalist Jacquelyne Leffler of Kansas receives a Case IH 40" Combination Roll Cabinet and Top Chest and a \$500 Case IH parts card, courtesy of Case IH.

Arizona Farm Bureau congratulates all competitors of the Discussion Meet. A robust competition makes the experience that much more rewarding for all involved.

The Discussion Meet simulates a committee meeting in which active discussion and participation are expected. Participants are evaluated on their ability to exchange ideas and information on a predetermined topic. 🗨️

Competing with 37 other young farmers and rancher around the country, Kirk Dunn first made it to the Sweet 16 and finally, the Final Four. As runner-up, Dunn receives a Case IH Farmall 50A tractor, courtesy of Case IH.

"I'm excited and humbled every time I am able to represent Arizona Farm Bureau," said Dunn. "It's a small way that I can give back to the organization that represents my family and my industry daily."

After his win he also added, "Thank you to everyone who helped me bring home second place for Arizona Farm Bureau YF&R, especially

## Arizona Ag Leaders Raise \$5,000 to Comfort Kids in Cotton

By Julie Murphree, Arizona Farm Bureau Outreach Director

If you've had a chronically ill child requiring extended hospital stays, you may remember long drives back and forth, so exhausted at times you don't recall how you even safely pulled into your car garage on a late night. That was before Ronald McDonald Houses opened. For more than 34 years now, Ronald McDonald House Charities of Central and Northern Arizona have provided a "home-away-from-home" for families traveling to the Valley for medical care for their children.

But to maintain these homes they're in constant need of support in the form of financial donations and more. So, the Arizona Farm Bureau Women's Leadership Committee came to the rescue covering in an area that was right up the alley of Arizona farmers and ranchers, certainly those in the cotton industry.



Arizona Farm Bureau's Women's Leadership Committee, Arizona Cotton Growers and Corteva AgriScience present enough sheets to cover every bed, and then some, at the Ronald McDonald House in Phoenix. Top row: Arizona Cotton Growers' Kevin Rogers, Becky Gross, Arizona Cotton Growers President Art Heiden. Seated: Arizona Farm Bureau Women's Leadership Coordinator Christy Davis, Arizona Farm Bureau's Women's Leadership Chair Catherine Mann and Corteva AgriScience PhytoGen Cottonseed Representative for Arizona Kristen Nelson.

Arizona Farm Bureau Women's Leadership Campaign, "Comforting Kids in Cotton" represents many years of working with the Ronald McDonald House in a variety of ways; this year the focus was on providing cotton linens for the beds. And, the Committee chose to serve the Ronald McDonald Houses this year in the Phoenix metro area since so many rural families use these houses the most, an obvious choice for families since the Phoenix house is right next to Phoenix Children's Hospital and St. Joe's.

The Arizona Farm Bureau Women's Leadership Committee presented 312 sheet sets recently to the Ronald McDonald House of Phoenix at 501 E Roanoke Avenue in Phoenix after raising \$5,000 at a Silent Auction at the Arizona Farm Bureau Annual Meeting in November and receiving funding from the Arizona Cotton Growers and Corteva AgriScience. The "Comforting Kids in Cotton" campaign planned to raise enough money to purchase at least 200 sets of sheets for The Roanoke home but the additional contributions by Cotton

Growers and Corteva helped them exceed their goal.

The Roanoke home in Phoenix welcomes 11,000 families a year and offers 17,000 nights of sleep to families with children in need of medical care and staff suggest are in constant need of fresh linens. Said Corteva AgriScience PhytoGen Cottonseed Representative for Arizona Kristen Nelson, "Cotton has many valuable uses and comforting kids in cotton has to be one of the best. We are so proud to be a part of this project."

Arizona Cotton Growers President Art Heiden said, "Arizona Cotton Growers is happy to participate in Farm Bureau's Comfort Kids in Cotton campaign. We've had a long tradition of helping the community at large and the Ronald McDonald House is a very worthwhile charity. Providing a home away from home for a family in crisis is something our Arizona farm and ranch families can so identify with." 🗨️

## Rural Leadership Program Applications Due March 15th

Arizona's Center for Rural Leadership, Project CENTRL, is now accepting applications for Class 29. Rural leaders, farmers, ranchers, and individuals working in businesses that serve agriculture or rural Arizona who want to make a difference in their community are encouraged to apply.

Project CENTRL is a premier leadership development program with over 600 graduates since the first class started in 1983. Alumni are active community leaders and dedicated volunteers who share a common vision of making rural Arizona and agriculture more healthy, vibrant, and sustainable. The mission of Project CENTRL is to equip and empower leaders to meet the needs of rural Arizona.

"Project CENTRL gives participants a life-changing experience in just one year," explains former CENTRL

Board President Cheryl Goar. "The people you will meet in your class, the travel across the state and the leadership skills you will gain promise to give you that boost you might be looking for to go to the next level, whatever it is you choose to do to improve rural Arizona." Goar serves as the Executive Director of the Arizona Nursery Association.

The program is a competitively selected, tuition-free, 12-month leadership development program. Each class has 16 people, and visits seven different sites throughout the state and includes seminars in Mexico and in Washington, D.C. The curriculum is designed to meet you where you are in your leadership journey and builds personal leadership skills, educates on issues facing rural Arizona, and connects leaders to each other and experts.

Project CENTRL is a partnership between the non-profit Center for Rural Leadership and Arizona Cooperative Extension in the UA College of Agriculture and Life Sciences (CALs). Applicants must be at least 25 years of age by June 2020 and a full-time resident of Arizona.

Detailed program information and an application packet are available online at [www.centrl.org](http://www.centrl.org). Additional information is available by calling the Project CENTRL office at 602-827-8227. All application materials are due on March 15, 2020 but candidates are encouraged to complete and submit earlier. 🗨️

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\*Farm Bureau Bonus Cash is exclusively for active Farm Bureau members who are residents of the United States. This incentive is not available on Mustang Shelby® GT350®/GT350R/GT500®, Mustang BULLITT, Ford GT and F-150 Raptor. This offer may not be used in conjunction with most other Ford Motor Company private incentives or AXZD-Plans. Some customer and purchase eligibility restrictions apply. Must be a Farm Bureau member for 30 consecutive days prior to purchase and take new retail delivery from dealer by 1/4/21. Visit [FordFarmBureauAdvantage.com](http://FordFarmBureauAdvantage.com) or see your authorized Ford Dealer for qualifications and complete details. Note to dealer: Claim in VINCENT using #3740B.



# Arizona leaders Help Craft American Farm Bureau's 2020 Priorities

By Julie Murphree, Arizona Farm Bureau Outreach Director

Farmer and rancher delegates across the United States to the American Farm Bureau Federation's 101st Annual Convention last month adopted policies to guide the organization's work in 2020 on key topics ranging from dairy to labor and climate change to conservation compliance. Arizona Farm Bureau's delegates made their voice and vote heard too.

"Delegates from across the nation came together



Arizona Farm Bureau President Stefanie Smallhouse speaks on the delegate floor during the policy session in Austin at American Farm Bureau Federation's 101st Annual Convention.

today to look ahead at issues and opportunities facing farms, ranches and rural communities," said American Farm Bureau Federation Vice President Scott VanderWal. "The 2020 policies ensure we are able to continue producing safe and healthy food, fiber and renewable fuel for our nation and the world."

Delegates updated labor and immigration policies, emphasizing that we must see significant changes to the H-2A program. While AFBF has long had policy in place to ensure an accessible, competitive guest worker program, the updates address problems with the adverse effect wage rate and emphasize the importance of year-round program access to all of agriculture. AFBF looks forward to working with Congress on efforts that align with these policy objectives.

After a year-long process to review ways to modernize Federal Milk Marketing Orders, AFBF's delegates voted to support creation of a flexible, farmer- and industry-led milk management system. This includes giving individual dairy farmers a voice by allowing them to vote independently and confidentially on rules governing milk prices. The new dairy policies, when combined, will form a strong foundation to guide the organization during future reform efforts to better coordinate milk supply and demand in the U.S.

There are significant new policies on conservation compliance. Delegates called on USDA to significantly improve program transparency and due process for farmers. They specifically prioritized changes in USDA's processes for wetland delineations and the appeals process. Delegates also adopted a new policy supporting the repeal of Swampbuster provisions. The changes highlight growing frustration with conservation compliance practices within the USDA Natural Resources Conservation Service (NRCS).

Delegates voted to support allowing a higher THC level in hemp, giving AFBF staff the flexibility to engage in discussions with regulators about the appropriate legal level, and to increase the window of time farmers can conduct THC testing, acknowledging the many questions about how the testing process will work and the potential for backlogs.

New policies are on the books supporting science-based climate change research and the documentation of agriculture's tremendous advances toward climate-smart practices. Delegates also made clear they want federal climate change policy to reflect regional variations, and they oppose a state-by-state patchwork of climate change policies.

## Arizona's Footprint

Arizona Farm Bureau policy that is now national policy includes trade, energy and land management.

One Arizona policy that made it into the American Farm Bureau Federation policy book for 2020 with no changes regards the Western Area Power Administration.

## Western Area Power Administration (WAPA)

Agriculture is dependent on the reliable operation of

irrigation and electrical districts. In order to protect these organizations and their dependent producers from issues arising from electric outages and increasing power costs, we support: The concept of "beneficiary pay" regarding the integration of new, non-federal generation.

Allowing mandatory contract advanced funding to replace voluntary advance funding in the General Power Contract Provisions (GPCP);

Giving the WAPA Administrator absolute discretionary authority to change power and energy allocations in the contracts held by its irrigation and electrical district customers;

Burdening existing WAPA customers with the cost of integrating variable energy (renewable) resources into the western grid; and

A WAPA decision to enter a regional sub-hourly energy market, otherwise known as an energy imbalance market (EIM), which has economic consequences for irrigation and electrical districts served by WAPA.

Any decision by WAPA to join a market should be based on the following principals:

Participation is consistent

with the statutory, regulatory and contractual obligations; Maintain reliable and cost-effective delivery of power and transmission to all customers;

Resource participation in an EIM or other centralized market model is voluntary; and Based on sound business rationale.

"This is a brand-new policy for Arizona Farm Bureau and American Farm Bureau Federation," said Tyler Davis, Government Relations Manager. "This is a perfect example of policy that starts at the county level, in this case Yuma County, and goes all the way to the national level."

During the session, delegates also re-elected American Farm Bureau President Zippy Duvall and Vice President Scott VanderWal for their third terms. VanderWal served as chair of the meeting on behalf of Duvall, who is grieving the loss of his wife, Bonnie. 🇺🇸



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