

Conversation about Food Safety's Farm-to-Fork Continuum: Paula Rivadeneira

By Julie Murphree, Arizona Farm Bureau Outreach Director

Paula Rivadeneira, Ph.D. is a Food Safety and Wildlife Extension Specialist for the University of Arizona Cooperative Extension. She serves the entire southwest region of the United States. She is responsible for research, education, and outreach regarding all aspects of food safety and wildlife, which are both encompassed under the umbrella of One Health. Her specific programs include providing assistance and recommendations related to food safety and wildlife issues for 1) large commercial fresh produce growers, 2) small direct-market produce growers, and 3) school, community, and backyard gardeners. Her primary projects focus on co-management of agriculture and wildlife by developing new environmentally friendly ways to deter various species from fields.

Dr. Rivadeneira's main goal is to assist fresh produce growers in excluding wild and domestic animals from fields and gardens to prevent potential fecal pathogen contamination of fresh produce crops. Her lab focuses on microbiological testing of plants, soil, compost, water, air, and animal feces to identify the presence of foodborne pathogens.

Keeping Arizona families and farmers in the know, Dr. Rivadeneira maintains an active Twitter account @PaulaThe-PoopDr to quickly disseminate information, and she conducts presentations at numerous local, regional, and national professional meetings and conferences for growers, master gardeners, food safety personnel, and pesticide applicators in Arizona, southern California, and throughout the U.S.

Her current research focuses on developing fresh produce safety regulations for small farmers, conducting microbiological testing on air samples near fresh produce fields that are located near animal and compost operations, and working with County officials by testing for mosquito-borne pathogens that could impact our community. She is also working on a long-term study examining the risks that specific wildlife species pose to food safety, which will ultimately allow growers to prioritize their deterrents and increase the co-management of agriculture and wildlife.

As a result, she's the doctor we need to see as it relates to the recent *E. coli* outbreak that was linked to produce grown in Yuma, Arizona this last spring. While the outbreak was recently declared over, Yuma farmers, the community and food safety experts are still pondering the ramifications and long-term impact, especially since the official "point source" has not been found as this article goes to print.



Seen here doing some of her field work, Dr. Rivadeneira says, "I just hope everyone remembers that the actual source of the recent *E. coli* outbreak has not yet been definitively found, and this fall when we start leafy greens production again, farmers will be doing everything they have always done to keep leafy greens safe, plus taking additional precautions."

Arizona Agriculture: Dr. Rivadeneira, they call you the "Poop Dr." for a reason. Explain.

Dr. Rivadeneira: I am a Wildlife Biologist who entered the Food Safety world five years ago as a postdoctoral researcher at U.C. Davis working under my mentor, Dr. Michele Jay-Russell. Because my expertise is in wildlife, the majority of my food-safety work with the University of Arizona Cooperative Extension focuses on the interaction between animals and agriculture, particularly fresh produce.

One important way that fresh produce becomes contaminated with foodborne pathogens, like *Salmonella* and *E. coli*, is through poop. Fecal material harbors all kinds of bacteria. So, in my lab at the Yuma Agricultural Center one of the many things we do is pathogen testing, and more often than not, we test poop. If a fresh produce grower has fecal material in or around their field, and they want to know if it has foodborne pathogens in it, they can bring it to my lab for testing. I also encourage anyone in Yuma and the surrounding areas who finds fresh poop or a freshly dead animal to contact me so I can collect the poop and test it as part of a surveillance study I have been conducting since I started working for the University of Arizona. I don't have funding for the project, but I think it's very important to start to determine which species of animals pose the most risk to our fresh produce fields, especially in light of the recent *E. coli* outbreak in romaine lettuce that was grown in Yuma. So, my staff and I collect the poop and process it, we put it in the freezer, and someday I hope to get funding to develop an extensive database of Yuma wildlife and their poop, which will ultimately help our growers to assess wildlife risks!

Arizona Agriculture: Explain the virulent nature of *E. coli* from a science perspective.

Dr. Rivadeneira: All warm-blooded animals have the potential to carry *E. coli* in their guts, particularly ruminants, like cows and sheep. In fact, humans carry *E. coli* as well! But the *E. coli* in our guts generally does not make us sick – it's an important part of our gastrointestinal flora that prevents harmful bacteria from taking over. There are actually hundreds of kinds of *E. coli*, and only some are pathogenic (harmful). There is a particular group of *E. coli* called shiga toxin-producing *E. coli* (STEC), and they release shiga toxin, which is considered a bioterrorist agent. The toxin kills red blood cells, which then clog the kidneys while

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Our Candidates from Farm and Ranch Country

By Julie Murphree, Arizona Farm Bureau Outreach Director

It's an election year! This means we'll need to take the time to review the numerous candidates asking for our vote. In the days and weeks ahead, we'll hear their messages, pre-planned sound-bites and debate statements. But, will we really get to know them?

The four candidates we are about to profile here –Tiffany Shedd, Sine Kerr, Tim Dunn and David Cook – have a unique but common story: they are all currently in and from agriculture. Many of you know them; they know us, or at least the Farm Bureau family because every one of them is a Farm Bureau member.

We also asked these four "aggie" candidates the same question: *What does your experience in agriculture bring to your candidate profile?*

So, let's get to know our fellow aggie candidates.



Tiffany Shedd
 Candidate for Congress in Congressional District 1

Tiffany Shedd has roots in Arizona's 1st Congressional District dating back over 100 years thanks to her family heritage. A farmer, small business attorney, firearms instructor and mother of three, she is running for Congress to

bring rural Arizona values to Washington, DC.

Shedd has spent decades as a fierce advocate for rural Arizona. She and her husband, Rodney, have farmed cotton and wheat since 1989 on the

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farm they own in Eloy. Shedd has served as a producer on the boards of various commodity advocacy groups, charitable organizations, and has successfully advocated for the private property rights for agricultural land owners.

Always proud to identify as a rural Arizonan, Shedd is an avid shooter and firearms enthusiast. She and her husband established the Central Arizona Target Shooting range in Pinal County to promote youth shooting sports. She is a 4-H certified youth pistol instructor, as well as an NRA-certified youth shotgun instructor. Shedd is a strong and prominent defender of 2nd Amendment rights.

With deep roots in the 1st congressional district and a lifetime of service to her rural Arizona community, Shedd hopes to shed light on some unique aspects of rural America and seek improved economic development for the district.

Says Shedd: I have been farming with my husband for almost three decades. This experience brings to my candidacy the lessons of family teamwork, not making excuses but figuring out how to get things done, hard work, faith that if you do the next right thing you will have a bountiful harvest, optimism, and that perfection can be the enemy of progress. Being surrounded by people who are stewards of the land has taught me that we must manage our natural resources to survive and prosper. That there is nothing Americans cannot accomplish if government stays out of the way and that producers should be rewarded not punished.



Sine Kerr Arizona Senator, running for re-election in District 13

Sine Kerr was appointed to the Arizona State Senate and sworn into office on January 8, 2018, following a vacancy of the senate seat. Her district includes western Maricopa County west to Yuma and includes a very diverse constituency including a vast amount of rural and agricultural areas.

When her father retired from the U.S. Army, he moved 3-year-old Kerr and the rest of the family to Buckeye, Arizona. Sixteen years later she married her high school sweetheart, Bill, and the two of them have since had one son and three daughters who are all now married with children. They are blessed with eleven grandchildren.

In 1980, Sine and Bill started their dairy business with 15 cows. Thanks to hard work and dedication, today they have 1,100 milk cows and 800 replacement heifers. In addition to the dairy, they grow all their forage crops on 700 acres of owned and leased farmland. She advocates frequently on behalf of Arizona farmers and ranchers whenever the opportunity arises.

Kerr also currently serves on the Buckeye Valley Chamber of Commerce Board of Directors and served as the founding Chairwoman on the Arizona Department of Agriculture's Food and Agriculture Policy Advisory Council and now serves as an ex-officio Council member working to address food insecurity issues in Arizona.

Her other passions include job growth and the economy, education and family issues, caring for and serving our veterans (five consecutive generations in her family have served in the military).

At the Arizona State Senate, Kerr serves on the Natural Resources, Energy and Water Committee and on the Transportation and Technology Committee.

Says Senator Kerr: My experience in agriculture brings a great deal of first-hand knowledge, passion, and experience to my candidate profile. I am able to bridge the gap between people who are far removed from production agriculture and share my knowledge and experience with them on a daily basis.

As a current state Senator recently serving in my first session, I was able to be the voice of agriculture on several bills with a passion that comes from knowing what the impact of certain legislation will have on our farms and ranches. When it comes to water issues, I bring an understanding of our diverse water culture and working knowledge that I otherwise wouldn't have without being a farmer myself.



Tim Dunn Arizona House of Representative, running for re-election in District 13

State Representative Timothy (Tim) Dunn was first appointed to the Arizona House of Representatives in February 2018 to represent the people of Legislative District 13, which includes the communities of Yuma, Buckeye, El Mirage, Glendale, Goodyear, Litchfield Park, Surprise, Wellton and Wickenburg. The district includes many installations that are vital to the Arizona economy, including Palo Verde Nuclear Generating Station, Luke AFB, the Marine Corp Air Station, Barry Goldwater Bombing Range and the Yuma Proving Ground as well as some of the most productive agricultural operations and fastest growing urban-industrial populous in the nation.

Tim Dunn is a 3rd-generation farmer and a lifelong resident of Yuma. Representative Dunn, owns and operates an integrated line of agricultural businesses, including Tim Dunn Farms (seed and crop production), Dunn Grain Company specializing in the sales and export of crops grown in Arizona, including garbanzo beans, black-eyed peas, Sudan grass, durum and other wheats and proprietary

seeds, and most recently, developing Dunn Plant Genetics for the development and sales of new wheat varieties, internationally.

Representative Dunn has always had the desire to grow things and to be innovative in the ever-challenging world of agriculture and business. A graduate of the University of Arizona, in Agronomy, Dunn embraced his experience growing up on the farm and enhanced them with his education to take on new entrepreneurial enterprises. Since 2011, Dunn also stepped out to create jobs in his district, having opened and continuing to operate four Sport Clips Haircut locations in Yuma County and the West Valley.

A lifelong Republican, Dunn has proudly served 4 terms as a Precinct Committeeman. He has been an active voice on issues related to agriculture. In 1999, the Yuma County Chamber of Commerce awarded him the "Agricultural Person of the Year." Representative Dunn was also appointed by the Governor to the Arizona Department of Agriculture Advisory Board (2006-2011), serving as Chairman in 2009.

He is a graduate of Project Central Class of XI and recipient of the "Outstanding Leadership Award for Public Policy" (2009) and was a "Heart of Yuma Nominee" (2009) by the Yuma Community Foundation. Dunn also served

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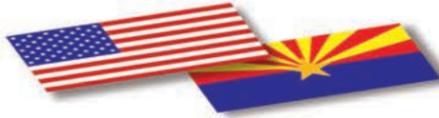
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Candidates in Contested Primaries Share Their Plans for Arizona Agriculture Before The 2018 Arizona Primary Election

This summer, Arizona Farm Bureau gathered comments from candidates in key primary races through its 2018 Primary Election Candidate Questionnaire. The agriculture-focused questions were designed to give members an overview of the agriculture-related positions held by primary candidates in competitive races.

Arizona Farm Bureau Director of Government Relations Chelsea McGuire noted, "Election season is a time when our members are bombarded with messages about dozens of issues. Arizona Farm Bureau hopes to cut through some of the noise by providing a clear and concise message from candidates in key races across the State."

Important Points to Remember

- *Candidates questioned were those facing same-party competition in key primary races.*
- *All responses are published below in alphabetical order by party.*
- *Candidates that did not respond are not listed.*

Editor's Note: In the October issue of *Arizona Agriculture*, Farm Bureau will focus on the candidates in the General Election and the races of particular importance to agriculture.



Questions for U.S. Senate Candidates

1. *Arizona's agriculture and natural resource industries are important economic engines for Arizona and our rural communities. In your opinion, what is the biggest challenge facing these industries?*
2. *What role should your office play in overcoming this challenge?*

U.S. SENATE FOR CONGRESS

Martha McSally (R)

There are many challenges facing our agriculture and natural resources industries and Arizona, but the biggest one is the burdensome and overreaching regulatory atmosphere imposed by the Federal government.

From H-2A visas, pesticide and insecticide repellents, the Waters of the United States (WOTUS) rule, and land use hoops, Arizona's farmers and ranchers are expected to comply with an extremely complicated web of rules and regulations. These requirements mean that Arizona's producers spend too much time and money complying and too little time doing what they do best.

As a Member of Congress who represents many farmers and ranchers, I have heard firsthand testimony about the challenges and costs to the economy of federal regulations. I have a proven record of fighting for our producers and stakeholders, and if elected to the U.S. Senate I will continue leading our state delegation in opposing burdensome red-tape and regulations and fostering a business-friendly climate.

Recently, I advocated and voted in favor of the Farm Bill that allows certain environmental reviews and red tape that are not applicable to be waived which saves precious time and resources for America's producers. I have also voiced my opposition to rules and regulations such as the WOTUS rule. I voted to repeal it and continue to support this Administration's efforts to roll back sweeping regulations written by unelected and unaccountable bureaucrats.

Beyond simply opposing harmful policies, we also need to foster a business-friendly climate. That's why I supported the Tax Cuts and Jobs Act which lowers taxes and provides relief from the "death tax" so that farmers, ranchers, and business owners can pass down their business to the next generation.

Dr. Kelli Ward (R)

Agriculture in Arizona succeeds in generating over \$13 billion in economic activity despite constant threats – many from nature, and some from the government. Trade, tax reform, access to water, food safety, and many more federal issues can have a serious impact on our farmers and ranchers.

Exports are critical to the success of Arizona's farms and ranches, and it is vital that we maintain and expand access to vital export markets for Arizona agriculture. Whether it's winter lettuce, beef, apples, pecans, or any other product we produce in Arizona, I want our farmers and ranchers to have the ability to sell around the world. This means we need to preserve access to existing markets and negotiate for the reduction of barriers to American ag products in those countries where they remain. Expanding access to export markets must be a key part of any trade agreement. As a United States Senator, expanding market access for agriculture will be a key component I look for in any treaty that comes before the Senate.

Kyrsten Sinema (D)

As I travel the state, I hear many of the same concerns from Arizona families. No matter how Arizonans make their living, everyone wants access to quality health care, good jobs, and a fair shot at success.

When I talk to Arizona farmers, I hear about these same concerns and also about how we can ensure continued access to markets across the world. The chaos and dysfunction of Washington is causing uncertainty for farmers and rural economies across the state.

No one wins a trade war. Arizona family farmers depend on commonsense trade policies that provide certainty, protect jobs, and strengthen rural communities. That's why I'm working across the aisle to support the Trade Authority Protection Act, which requires Congressional approval before new tariffs or trade policies go into effect, so we ensure they work for Arizona. The last thing we need are tariffs that hurt our farmers, or policies that spur our trading partners to retaliate and harm hardworking Arizonans.

Any trade plan we put forward needs to help everyday Arizonans get ahead. I'll work with people on both sides of the aisle to cut through the partisan games and get things done for Arizona.

Questions for U.S. House of Representatives Candidates

1. *Arizona's agriculture and natural resource industries are important economic engines for Arizona and our rural communities. In your opinion, what is the biggest challenge facing these industries?*
2. *What role should your office play in overcoming this challenge.*

U.S. REPRESENTATIVE FOR CONGRESS

District 1 Casa Grande, Show Low, Flagstaff, Kayenta

Wendy Rogers (R)

Arizona's congressional delegation must work to put an end to the adjudication process and federally reserved water rights.

Water sheds are an absolute mess as logging has ceased, small dog-hair pine thickets have taken over, and the Forest Service has adopted a "let it burn" attitude. Water sheds have been "managed" not by land stewards, but by judges in cases brought by the environmental community whose goal is to drive out all natural resource users.

Water sheds are vital to agriculture and urban areas of the state. Decades ago, the feds introduced the saltcedar tamarisk as an erosion control method. The saltcedar, however, has choked and infested water sheds throughout the state. The feds should be required to clean up the mess they created.

When forest reserves were created under the Organic Act, the two original purposes were silviculture and watershed management. Now both are ignored and have been replaced by recreation and wildlife concerns.

A concerted effort to revitalize water sheds should be a critical focal point of Arizona's congressional delegation. While the delegation cannot end the drought, it can push to restore watersheds, resulting in more water available for both agriculture and urban areas.

Tiffany Shedd (R)

The biggest challenge is federal overreach. We have many regulations that cause problems and don't solve them such as Waters of the US; many interpretations of the endangered species act; federal water, energy, and land use policy that does not allow stewardship by local stakeholders; as well as labor policies that leave industries shorthanded.

Arizona's Congressional delegation needs to fully understand and educate other policy makers about the impact regulations are having on our unique western state and its producers. They need to protect and defend our state and its producers against policies that cripple rural Arizona whether that is through legislation, advocacy, coalition building, correcting agencies that have overstepped their bounds, or using the office as a podium to shine national attention on our amazing industries and their side of the story.

District 2 Benson, Willcox, Sierra Vista, Douglas

Brandon Martin (R)

Constant government overreach from the federal level is the biggest issue facing Arizona's agriculture. We in Arizona are capable of managing our own land and natural resources. Arizona's congressional delegation should work to return federally controlled lands in Arizona back to the state.

Casey Welch (R)

With the rapid development of urbanization in the State, both Arizona's agriculture and natural resources industries would foresee a water crisis. I believe our water resources are threatened, and we need to expand our conservation programs and increase efforts to reinforce our water supplies. The economic, social and environmental sustainability of Arizona State depends on water availability and accessibility. The State needs to augment support for sustainable water resources programs that don't lean in favor of urban or rural areas but work together to create a feasible solution for all.

With the rapid development of urbanization in the State, both Arizona's agriculture and natural resources industries would foresee a water crisis. I believe our water resources are threatened, and we need to expand our conservation programs and increase efforts to reinforce our water supplies. The economic, social and environmental sustainability of Arizona State depends on water availability and accessibility. The State needs to augment support for sustainable water resources programs that don't lean in favor of urban or rural areas but work together to create a feasible solution for all.

Matt Heinz (D)

The biggest challenges currently facing our agriculture and natural resource industries are the corporatization of these industries as well as the complications that arise from our currently chaotic trade policy. Small farms, which had been for decades the backbone of our agricultural industry, are being bought out and rolled over by the desire for corporate profits and influence. With that comes a loss of a way of life and the threat of stagnation in terms of agricultural development.

Our current trade conflicts run the risk of damaging our relationships with key partners and allies and will ultimately hurt the pocketbooks of tens of thousands of individuals working in agriculture related fields. Small farms are paying the price for this posturing and it is deeply concerning.

The Arizona congressional delegation should play an active role both in terms of trade policy and oversight for our agriculture industry. Members of the delegation should be consistent advocates for our economy by working with federal and local departments to ensure that the needs of the industry are well represented. I also strongly believe that expanding and improving access to broadband is critically important overall, but especially for our rural farming communities.



District 2 (Continued)

Ann Kirkpatrick (D)

Arizona's agriculture and natural resource industries have a major challenge in finding a reliable, legal workforce to make up for a shortage of labor in certain regions of our state. The demand for farmworkers in Arizona has been steadily growing for years. No farmer should ever have to look into their fields and watch their crop rot because people are unavailable to harvest it. That is why I am an advocate for guest labor reform that is sufficient and productive for the entire Arizona agricultural community resulting in a steady and reliable flow of workers.

Guest labor reform has not been addressed by our federal government in more than a decade and is vital to farming operations, especially on farms in Arizona's second congressional district. Since my first term in office, I have consistently joined with Arizona's business owners, farmers, ranchers and so many others in supporting comprehensive immigration reform that secures our border, keeps families together, but also addresses the labor workforce needs of Arizona's agricultural economy. Specifically, guest labor programs need reformed to increase a sufficient and reliable flow of workers, as well as be developed with input from business owners, farmers, ranchers and farm workers. Additionally, Arizona's congressional delegation needs to put politics aside and work together to significantly increase opportunities for our states farmers. We need to elect principled leaders who have the ability to break the gridlock in Washington and find common ground to pass real solutions that create jobs and boost our economy.

Barbara Sherry (D)

As the population grows, the demand for water raises exponentially, while the supply decreases with environmental changes, this issue will be the number one facing our Farmers and Ranchers.

Arizona's congressional delegation should promote education about water-saving methods like hydroponics and drip irrigation, then subsidize and create incentives for industries to use these methods. One pound of hydroponic barley grass uses one tenth the amount of water that it takes to grow an equal amount of hay. Drip irrigation can use less water than traditional irrigation. Methods for saving water are well-understood, but those in rural communities may not have the knowledge or the resources to implement them. Eighty-five percent of rancher in Cochise County make \$25,000 or less, and without assistance cannot implement an expensive method such as drip irrigation or hydroponics. Another thing that Arizonans can do is decrease the production of pecans in southern AZ. A pecan tree can live for 100 years, but it takes seven years to produce one pecan. It's the responsibility of Arizona's congressional delegation to work with these industries to save water for the sake of the working people and for the land itself. These industries cannot survive without drastic measure to conserve water.

District 9 Tempe, Mesa, Arcadia

Dr. Steve Ferrara (R)

Our dysfunctional immigration system is taking its toll on the nation in many regards, but here in Arizona it's also adversely affecting our agriculture industry. Thanks to our recent economic renaissance, our economy has created more jobs than there are workers to fill them based on both numbers and skill sets. This magnifies the long overdue need for holistic immigration reform that provides border security yet supports our economy. This is a problem that must be addressed by Congress, and since Arizona has such a uniquely vital interest in this policy our delegation should lead the way. We must expand the visa limits while streamlining and simplifying the H-2A program for agricultural foreign workers. A successful plan will be sensitive to the seasonal and geographically varied nature of agriculture work. Arizona's agribusiness industry provides over \$23 billion in economic impact to the state and supports roughly 140,000 jobs in mostly family-owned enterprises. As a doctor, I understand the bigger picture: these growers provide Americans with healthy foods at affordable prices. It's crucial that Arizona's congressional delegation ensures that these job, health, and wealth creators have an efficient and reliable source of labor so that they can continue to thrive.

Greg Stanton (D)

As the Mayor of Arizona's largest city I learned that when our rural communities flourish so do our urban communities and vice versa. Therefore, while Congressional District 9 is completely urban, the health of our rural communities and the continued growth of the economic activities that drive them is a vital concern to me. In my view, the biggest long-term challenge that our agricultural and natural resources industries face is one that we all share, and that is long-term water security. Over the past decade we have made great strides in building effective and innovative water storage and management strategies and, once in Congress, I look forward to continuing to work with these vital Arizona industries and our rural communities to ensure no one is left out of these discussions.

I support the drought contingency plan and process in which all of Arizona's key interests, both urban and rural are adequately addressed. Arizona has had great leaders in Congress to advocate for our interests during difficult water negotiations and I look forward to continuing that essential, bipartisan tradition. It's critical that the outstanding, long-term water planning that's been done in Arizona is protected in any future multi-state discussions.



Questions for Governor Candidates

1. Arizona's agriculture and natural resource industries are important economic engines for Arizona and our rural communities. In your opinion, what is the biggest challenge facing these industries?
2. What role should your office play in overcoming this challenge?

STATE GOVERNOR CANDIDATES

Doug Ducey (R)

The challenge continues to be the overreach and difficulties created by government. My Administration has reduced regulatory burdens and invited natural resource industries to help Arizona improve business. My job as Governor is to work with the industry, and my staff, so that we have sound policy that serves businesses and the public in our state and the nation.

Our efforts have included or resulted in:

- Convening face-to-face meetings with agriculture leaders and USDA Secretary Sonny Perdue to improve federal agriculture policy and border issues;
- A successful challenge with other states on the Waters of the United States (WOTUS) Rule and a coordinated effort with industry and the Arizona Department of Environmental Quality (ADEQ) to lead in redefining WOTUS with the Environmental Protection Agency;
- A successful challenge with other states on the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) 108(b) Rule that would have devastated the mining industry;
- Working with the agriculture industry on legislation and rules required to implement the Food Safety Modernization Act (FSMA) in Arizona through the Arizona Department of Agriculture (ADA) - and not the federal government;
- Eliminating 121 unnecessary regulations at the ADA;
- And moving numerous ADA processes and services online.

Steve Farley (D)

The biggest issue facing Arizona's agriculture and natural resources industries today is water issues, especially due to climate change. Water affects everyone in Arizona and virtually every industry.

Since Arizona's statehood, pumping and diversions have severely and negatively affected major groundwater basins and seriously degraded five of Arizona's major perennial rivers: the Colorado, Gila, Salt, Santa Cruz, and much of the San Pedro. Additionally, future perennial flow in the upper Verde River is deeply threatened. Researchers predict that in 2050 groundwater demand in seven river basins will exceed base flow, thus endangering the Agua Fria, Babocomari, San Pedro, upper Verde, and Little Colorado Rivers. One indicator of the declining health of Arizona's rivers and streams is the status of native fish populations.

Reduced river flows and deterioration of riparian habitats have detrimental effects on hunting, fishing, boating, birding, and other water-based recreational activities that significantly contribute to Arizona tourism – a growing \$20.9 billion industry bringing revenue from outside Arizona.

Arizona's Governor should play a very active role in preserving our state's water and natural resources and curbing the effects of climate change.

To prepare for the future, as governor, I will serve as a convener of the best and brightest minds to fix the issue at hand. I plan to follow the example of Bruce Babbitt as he developed the Groundwater Management Act of 1980 by bringing all the stakeholders together in public forums and making sure everyone is at the table, not just people handpicked for a pre-determined outcome.

This way, the public respects and follows the legislation that results, and we can move forward together.



Questions for State Senate and State House of Representatives Candidates

1. Arizona's agriculture and natural resource industries are important economic engines for Arizona and our rural communities. In your opinion, what is the biggest challenge facing these industries?
2. What role should your office play in overcoming this challenge?

STATE SENATE CANDIDATES

District 6 Flagstaff, Payson, Snowflake

Sylvia Allen (R)

The biggest challenge facing the agriculture community is the potential for cities and the State to amend the Groundwater Management Act to take rural Arizona's, and specifically, the agriculture community's water. I am especially concerned that farmers in Pinal County, Yuma County, and other rural counties could be negatively impacted by state efforts to avoid a shortage on the Colorado River.

I am also concerned that federal agencies will continue to use their regulatory power to threaten the agriculture community. Even with a pro-business administration, agency administrators need to be watched carefully, and we should work to ensure that the current administration remains in office to avoid future harmful regulations.

The Legislature needs to assert its role in water policy and ensure that state agencies are working with, rather than against rural Arizona and the agriculture industry.

District 12 Gilbert, Queen Creek, San Tan

Eddie Farnsworth (R)

Having been raised by a farmer and while growing up spending many hours working on the farm, I understand the importance of agriculture and the many challenges that agriculture faces. With that said, I believe the biggest issue facing agriculture is water.

Arizona's drought has lasted for nearly two decades and has resulted in a marked reduction in water reserves available to Arizona. It is estimated that the record-low snowpack levels in the Colorado River Basin will result in only a 42 percent of the long-term average runoff into Lake Powell. Looming on the horizon is a federal shortage call on the Colorado River which would further restrict surface water available to Arizona agriculture that relies upon Colorado River allocations. This type of shortage declaration is unprecedented and would have a significant, if not devastating, impact on Arizona agriculture.

The Arizona Legislature must consider all options in confronting the imminent water crisis and be prepared to deal with a shortage call.

First, Arizona must adopt water conservation measures that will address the priorities of water usage if a shortage call is issued. The water conservation plan should include a change that removes Arizona agriculture as the first industry to receive water reductions. We all like to eat and it takes a lot of water to bring agricultural products to market. We must make agricultural access to water a top priority. Non-essential urban water use, such as watering lawns, should be prioritized at the bottom of the use list.

Second, Arizona should reduce the need for water by proper forest management. Arizona must pressure the feds to thin overgrown forests and reduce wildfires.

Third, Arizona should continue to explore alternative sources of fresh water. Though Desalination faces some hurdles, it could provide a means to desalinate Arizona's significant brackish aquifer reserves.

Finally, Arizona must work in cooperation with the other Colorado River Basin states in coming to a solution that is a win-win.

District 13 Buckeye, Tonopah, Wellton, Yuma

Brent Backus (R)

The biggest challenge? WATER.

AZ legislature needs to work with the Federal Government and the western States to seek inter water basin transfers to feed to CO river system.



District 13 Buckeye, Tonopah, Wellton, Yuma

Sine Kerr (R)

I believe the greatest challenge facing agriculture and our natural resources industries is water. Access to a dependable supply of water needed for our farms, ranches, mining, and other natural resources industries is absolutely critical to their ability to stay in business and remain viable and sustainable. Our rural communities benefit from a thriving agriculture and natural resources industry due to the many support businesses that are dependent upon those industries for economic success.

The role the legislature can play in overcoming this challenge is to understand the priority we need to give to our various water concerns and issues across the state. Water legislation takes time and must be carefully crafted so that no harm is done to one region while trying to resolve an issue in another area of the state.

It's vital that stakeholders have the opportunity to participate in the legislative process. This allows transparency, accountability, and industry connection for the best chance of successful water policy.

District 14 Safford, Willcox, Sierra Vista

David Gowan (R)

The biggest challenge is the future of Arizona's water supply, which is the greatest natural resource asset needed to promote and grow Arizona's \$23 billion agricultural industry. With Lake Mead below the 150 ft. mark leaving us dangerously close to a level that can trigger federally mandatory cut backs of our share of the Colorado River supply that feeds our major population areas of the State, Arizona would be the first to loose out. This can have drastic effects on our farmers, ranchers, and rural regions, as the search for more water in our State can substantially impact them, which produce our food. The Legislature can do something and must do something to always protect our water rights. It will take leadership and tenacity to fight back for those water rights. Just as I did as your State Representative in 2015 when I fought and won legislation that created the first public College of Veterinarian Medicine in our State at the University of Arizona to help the needs of our rural and agriculture communities; I promise, as your Senator in LD14, I will be that fighter, who will protect our rural water supplies with all my strength and power.

Drew John (R)

Thank you for the opportunity to speak of my passion for the agribusiness industry and quality of life. I do miss living the life of farming and ranching, but I do have the opportunity to help others have that quality of life to prosper and enjoy.

Property rights seem to always be the overall threat to farming and ranching across the country. Here in AZ our biggest threats currently are water rights and the negative effects of illegal immigration on our ranches in my Legislative District in Southeastern AZ.

Legislatively and personally we need to support our President on immigration reform and border security. Our state must take back the control of water within our state and develop our own legislation and policies to preserve and protect the individual property rights.

Our state needs to develop our own programs within our existing departments to manage our own endangered species, environmental protections and develop a proper business plan to take back our federal lands.



STATE HOUSE OF REPRESENTATIVES CANDIDATES

District 5 Mohave Valley, La Paz Valley

Jennifer Jones-Esposito (R)

Water in the desert is the most important issue and the biggest challenge facing farmers and ranchers in rural Arizona. Only 18.2% of land is privately held, with only another 12.7% being State Trust land. The remainder is federally controlled and there is nothing preventing the BLM or other federal agency from preventing access to water, or leasing land to commercial enterprise which might deplete available ground water. Arizona legislators must demand control of our public lands per the American Lands Council and work with Coalition of Western States as a united front to boot the feds off our land. Representative Brenda Barton's bill to do this was vetoed by Governor Ducey. The legislature needs a super majority of like minded conservatives to override a veto. Ducey's Primary challenger Ken Bennett strongly supports Arizona controlling it's public land, and I look forward to the prospect of working with him on this and other issues.

Leo Biasiucci (R)

I think the biggest challenge facing Arizona's agricultural and natural resource industries are regulations. It is important that we allow these industries to thrive. When overregulation exists, these industries suffer, and in turn the Arizona economy suffers. These industries, and many others, do a great job of regulating themselves. We still need to make sure we have some oversight, but as Legislators, we need to do what we can to remove the unnecessary regulations that are negatively impacting our industry.

Paul Mosley (R)

I was just in a meeting in Kingman, Arizona for over five hours about the challenges that our state faces when it comes to water. As a legislator I will always defend the right of the farmers and ranchers. I have always and will always support legislation that helps ranchers and farmers especially when it comes to water. My first priority will be farmers and ranchers.

Agriculture is the life blood of our society, the number one export and 20% of the GDP. Farmers & Ranchers are good stewards of the land and I will work hard to support and help the ranchers and farmers of Arizona to provide food for all Americans. We need to teach the rising generation the importance of agriculture. Everything that we have either comes from mining or farming.

District 6 Flagstaff, Payson, Snowflake

Bob Thorpe (R)

Thank you! I am so proud of our hard working citizens on Arizona's 15,000 farms and ranches, contributing over \$10 billion annually to our growing economy, feeding and clothing our citizens here, across our nation and around the world. This year, I was honored to run a bill and include in the State budget the long overdue livestock inspector's pay raise, to better compensate and thus help recruit and retain these important public servants.

One of the biggest challenges facing agricultural will continue to be available water resources within our arid state. Any changes to water policy must originate and be agreed upon by our AG stakeholders, and not be imposed by bureaucrats, the Governor's office or within the halls of the State Legislature.

District 11 Maricopa, Stanfield, Marana

Howell "Jonesy" Jones (R)

Thank you for the opportunity to submit a few words on issues that might concern you and federation members. From talking to people in the district I have found water to be one of the issues everyone has a stake in. I am not a politician and have never held office before, I don't have a lot of the facts on issues including water. I believe most laws, policy's, etc. should be looked at every few years epically water issues, to determine need and update as needed. What I have seen in other states is farm and ranch land being bought up by developers. We can never let Arizona lose it's farm and ranch reputation. I look forward to speaking with people in your industry for find out any and all issues the state might be able to help them with.

Mark Finchem (R)

Thank you for writing and for your timely questions. As a consistent supporter of the agricultural agenda in Arizona my voting record over the last 4 years points to my recognition that we have big problems that will require innovative solutions, while keeping government small so the people can remain big.

With regard to your question, "In your opinion, what is the biggest challenge facing these industries?" I agree that Arizona's agriculture and natural resources industries are important economic engines for Arizona and our rural communities. Of course without water, there is no agriculture. As a policy setting body, it is up to the Legislature to set water policy that balances the needs of our urban and suburban communities with the ability to feed the people who live within them.

What to do about the problem, or in your words, "What role should the Arizona's Legislature play in overcoming this challenge?" I believe we must settle the long standing disputes over water, and seek meaningful, productive, infrastructure improvements that will increase both supply and capacity to deliver water to central and southern Arizona. One example is the employment of treatment technologies -desalination for one- of brackish water in multiple locations around our state. Another opportunity is one that the Israeli government has already solved, and that is increased supply of water through oceanic desalination. We are now in a "new normal," and the natural forces that we have relied upon in the past have changed. With the abundance of electric power brought on by the proliferation of "green" technologies, we have the opportunity to adopt an "all of the above" water strategy, that will supply the needs of agriculture and of urban and suburban communities. To accomplish that, we need a smart plan that our sister states and the Federal partners can work from. I believe that is the role that the Arizona Legislature should lead in.

I would be happy to talk more about an "all of the above" water supply strategy with you and the Farm

Bureau members at your convenience.

Barry McCain (D)

Hi. I am Barry McCain a candidate for the Arizona House of Representatives from Legislative District 11. The Arizona Natural Resources that are Arizona's biggest challenges, in my opinion are: 1. Our People 2. Water 3. Mining Metals 4. Timber 5. Land Management and 6. National Parks. The Arizona Legislature must work together to overcome all challenges and to pass bipartisan Legislation for the common good to protect each Natural Resource for each to be sustainable for posterity. To get the Arizona Legislature to work together for the common good of our great state is the biggest challenge as seen in our Arizona history. For too long we have had a land of US versus Them and I am of the mindset that we are all one that have a common goal to build for our youth and our future. We must elect people who understand that it is not about politics and understand that the common good and fairness is a must. I believe we can do it if we all just take the time to listen and learn from each other. I need your help and your vote to bring about a new direction for our district.

Hollace "Holly" Lyon (D)

Rapid growth and development continue to cause competition for land and water use. According to the 2006 88th AZ Town Hall report, "Current levels of air and water pollution, inadequate water supplies in some areas, and the loss of natural habitats, biodiversity and agricultural lands raise concerns that Arizona may have exceeded its carrying capacity in these areas."

Twelve years later, our population is up 18 percent and we are still rapidly developing.

My tendency is to minimize Legislative involvement as much as possible, while creating the framework and incentives, that allow localities and counties to collaborate and self-regulate their planning and execution. Where needed, the Legislature should create or strengthen mechanisms for Arizona to be fully engaged and active with the Western States Water Council and other regional planning cooperatives. All stakeholders must have a seat at the table and Arizona must speak with one voice in the region.

District 12 Gilbert, Queen Creek, San Tan

Travis Grantham (R)

In my opinion the biggest challenge facing Arizona's agriculture and resource industries is over regulation and bureaucratic rulemaking that makes it difficult and costly for them to do their jobs. As we all know, Arizona is mostly made up of federal and state land that is controlled by the government. Farmers, ranchers, foresters and all natural resource related industries need affordable access to the states vast natural resources so that they can be responsibly and efficiently developed. Over protection of our forests and rangelands has led to catastrophic fires which has destroyed many of the resources and consumed much of the groundwater. Arizona must take an active role in managing these lands and demand that the federal government streamline processes and open more acreage up to our agriculture and resource industries so that the lands can be properly utilized.

The Arizona legislature should strive to expedite approval processes on state land and ensure that the regulatory environment in Arizona is one that is conducive to doing business. By eliminating burdensome environmental law, easing access to resources and by ensuring there is ample water available to the agriculture and natural resource industry the Arizona legislature can create an environment that allows the industry to flourish. Additionally, keeping taxes low on businesses and in our rural areas will help to incentivize more development in the agriculture and natural resource industry creating more jobs and allowing for better management of our lands.

Blake Sacha (R)

There are many challenges facing these important economic engines including trade, labor resources, water and growth. I believe that responsibly and effectively dealing with growth is the biggest issue. Growth creates pressure on water, trade, labor availability, infrastructure investment, use of public lands and many other important issues.

The Arizona legislature has an important role to play in enabling responsible and effective growth. Stopping the sweep of user funds, especially highway user funds are an important action. Adequately maintained roads and highways are critical



District 12 (Continued)

to efficient commerce. Agreeing on a drought contingency plan and providing additional certainty regarding water usage will also be very important. Trade is critical to our economy and our state must continue to play an influential role in updating trade agreements to reflect our unique needs. Immigration policy needs to be addressed at the federal level and Arizona needs to be a strong partner. The legislature also needs to keep Arizona government limited, so Arizona remains a place of opportunity for those reaching for the American dream. The various divisions of government (city, county, state) have areas of responsibility. They each need to stay in their lane and effectively and efficiently get their work done.

Warren Petersen (R)

I believe the biggest challenge facing the agricultural and natural resources industry is an environment of excessive red tape and regulation. Many people have lost sight that government's role is to protect our rights. That includes the right to run our businesses without excessive government over reach. A desire to push back on burdensome regulations is one of the biggest reasons I ran for office. I understand that everything we eat, wear and use comes from materials that were grown or mined. Food comes from farmers, not Fry's!

Unfortunately, we have radicals at the Capitol that believe that we need to regulate the agricultural community out of business. While some may be well intentioned, they don't realize they are literally biting the hand that feeds them. I have the greatest respect for my friends who are farmers. I see them as representing everything that is great about our country. They are hard-working God-fearing people who love this state and contribute tremendously to the community. The legislature needs to have a spirit of gratitude and respect towards the agricultural community not just in word, but in deed. That means running bills that keep government out of the way, so farmers can provide us with the products we all need.

District 13 Buckeye, Tonopah, Wellton, Yuma

Joanne Osborne (R)

I believe the biggest challenge facing Arizona's Agriculture and Natural Resource industries first and foremost, is water. Our state has been in an 18-year drought and a Shortage Declaration on Lake Mead is anticipated in the near future. The district I would like to represent, LD13, encompasses the heart of Yuma Agriculture. I have been on the Arizona Municipal Water Users Association for the past two years and understand the tough decisions that need to be made. The second item affecting agriculture is media and the harmful messaging being spread. While governments role is to keep its citizens safe, there tends to be a great deal of information that is contrary to the facts. As examples, GMO's, animal production, food safety, and the like.

The role of an Arizona Legislator in this next year will need to find solution to the Drought Contingency Plan, the Sunset of Effluent Water Storage, and work collaboratively with the cities & media to show the Nation we are efficient, we are innovative, and we conserve water.

ARIZONA CORPORATION COMMISSION

Rodney Glassman (R)

Water is the biggest issue facing our state and the Corporation Commission, which regulates Arizona's private water providers, will play a critical role in Arizona's water future. As a former Arizona State Farm Bureau board member, member of a three-generation farming family in Central California, and Air Force Veteran with my PhD in Arid Land Resource Sciences (water) from the University of Arizona, I'm uniquely qualified to serve as a voice for agriculture on the Commission.

I grew up in production agriculture and know that for many parts of our state, agriculture is the basis for the local community. I understand, first-hand, the relationship between agriculture, economic development, conservation and the entities supplying power and water. Most folks have only a drive-by sense of how agriculture impacts the creation of capital.

Agriculture needs affordable and reliable water and power and that requires regulators who are informed, impartial, and forward-looking. I'm the only candidate with a plan to restore integrity at the Commission through adoption of the Arizona Code of Judicial Conduct. I've also made long-term planning, with an emphasis on water, the central element of my campaign. Everyone talks about it, and I've got the know-how to get it done.

Bill Mundell (D)

The high cost of electricity is the challenge the Corporation Commission has primary and direct jurisdiction over. The challenge the Commission has indirect and secondary jurisdiction over is water availability and sufficiency for all customers, including agriculture and natural resources industries.

In recent years, the Commission has unjustly raised electricity and water rates on agriculture, residential customers, schools, and businesses. Like I did for 9 1/2 years when I was a Commissioner, I will make sure that all customers, including agriculture are protected from unjust rate increases. I will encourage conservation, so that sufficient water is available for all customers, including agriculture, especially in areas like Pinal County.

Kiana Sears (D)

I believe that the biggest challenge facing Arizona agricultural industries are the foreign companies that now operate in Arizona. The reason these foreign companies are a problem is because they are siphoning natural resources away from companies that operate in Arizona for Arizona. An example of this is alfalfa farmers that send their exports overseas to the Middle East and China. These companies come to Arizona in order to obtain low cost water and other resources, and have little economic benefit for Arizona. This makes water, which is already a scarce commodity, more difficult to obtain. Because this practice has begun relatively recently, Arizona does not have the policies to handle these incoming companies.

The Arizona corporation commission needs to reform its policies in regards to agricultural and industrial industries to protect Arizona companies and resources. The main aim of reforming these policies would be to prevent such companies from water farming in Arizona. Frameworks can be established to raise the price of natural resources use to companies that are specifically looking to export large amount of products that absorb water and nature resources to other countries.

SUPERINTENDENT OF PUBLIC INSTRUCTION

Dr. Robert Branch

I live in the farming community of Waddell, Arizona, and I know that the five largest challenges facing Arizona's agriculture and natural resources industries are:

1. Labor
2. Water
3. Labor
4. Labor
5. Labor

Having a sustainable, skilled, and engaged workforce is paramount to the future of Arizona's agriculture and natural resources industries.

I am running for the office of Superintendent of Public Instruction for the State of Arizona. The Superintendent of Public Instruction needs to work in concert with all industries to help build a sustainable, skilled, and engaged workforce. The Superintendent of Public Instruction needs to work with Arizona's agriculture and natural resources industries to educate our students to careers in Arizona's agriculture and natural resources industries. Many of the K-12 educational tools and Continuing Education Units (CEU) that have been developed by the AZDA can be utilized in this effort. It is also imperative to grow Arizona's Joint Technical Education Districts (JTED), Career and Technical Education programs (CTE), along with schools like West-MEC; to meet the needs of agriculture and natural resources industries and build a sustainable, skilled, and engaged workforce for Arizona's agriculture and natural resources industries.

Kathy Hoffman

With our rapidly changing economy, our agricultural workers are often some of the most impacted. This particularly true when we consider the tremendously volatile ups and downs of the stock market, which heavily impacts both the natural resource and agriculture industries. One has to look no further than the effects of the threatened "trade war" with China has had on many local farmers. As a teacher, I believe we need to begin engaging students with these issues and invest in the agricultural education programs in our schools.

Arizona's education system can help to overcome these challenges by first recognizing them, and then working with experts in the field to create solutions. I believe that with a Superintendent and school board who are responsive and respectful of these issues, we can create programs that help educate students on these issues and offers students opportunities to enter the field with a background knowledge in agriculture and natural resources if they so choose. Many such programs exist across the nation but, unfortunately, they are dwindling. With an increase in funding and focus, we can begin to address these issues through well-developed programs in our education system. We must begin looking toward the future and I know that Arizona's future starts in our schools.

Frank Riggs

The biggest challenge facing Arizona's agriculture and natural resource industries is the regulatory restrictions placed on those industries, especially at the federal level. Zealous environmental organizations have sought to limit the use of private property as well public lands to produce the food and fiber products that are vital to our economy and mankind's very survival. Only 17.6% of all land in Arizona is privately-owned. As Arizona's population continues to grow, we must ensure that increasing urbanization does not encroach upon our resource-based industries or reduce essential water supplies needed to sustain those industries. We must also ensure that federal and state forest lands are selectively harvested for fire suppression purposes and the health of the forests and watersheds.

We should educate our students on the vital importance of our agricultural and resource industries, dating back to our country's founding. They should learn about the source of the products they use and consume, from the food products used in school meals to pencil and paper in the classroom. They should also learn about the 5th Amendment protection against private property takings as part of basic civics instruction on our country's founding documents and principles as a Constitutional Republic.



Don't forget to vote



Rivadeneira

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the kidneys attempt to filter them out, and this eventually causes hemolytic uremic syndrome (HUS), often times making the infection deadly.

Arizona Agriculture: Should the federal agencies have a better way of tracking or monitoring E. coli and any other foodborne diseases?

Dr. Rivadeneira: Like many other pathogens, *E. coli* is a reportable disease. So, if you go to the doctor or a hospital, and they find that you test positive for *E. coli*, they are required to report that to the Centers for Disease Control (CDC). Many infections are hugely underestimated because, let's face it, most of us don't go to the doctor if we are vomiting or have diarrhea. We wait to see if it passes. It has to be really bad for us to go see a doctor. And since many illnesses are self-limiting, especially when you are a healthy adult, they work themselves out over a period of time, so you never see a doctor and you never receive an actual diagnosis. Basically, without forcing every person who has diarrhea to poop in a cup for testing, there may be no better way to track foodborne illness than the current method.

But let's talk about traceback, which is the process of figuring out which foods people ate in the weeks prior to being confirmed that they have *E. coli* or another foodborne illness, and tracing that food back through its life to its source. Everyone in the farm-to-fork continuum is supposed to keep documentation for one-step back and one-step forward, meaning that they know who they received the product from and they know who they gave it to. As a result, you should be able to ask a person what brand of lettuce they ate on a particular date and which store they purchased it from, and you should be able to trace the lettuce back to its origin, thereby identifying every company that touched the produce along the way, including the grower, harvester, processor, shipper, distributor, supermarket, etc.

During the latest *E. coli* outbreak, there seemed to be some confusion about what happened with product after it arrived at some of the processors. The reason for this is that lettuce and other vegetables from different fields often get combined to make

mixed bagged salads, and it is possible to lose track of each crop at that point. So, in that regard, there are some points along the supply chain where improvements could be made for traceback purposes.

Arizona Agriculture: You've been studying migratory bird patterns and wildlife in general. Will there be future technologies to help us better protect against animal droppings found in fields? Or, will this be the ongoing challenge?

Dr. Rivadeneira: Here in Arizona, the vast majority of our fresh produce is grown in open air fields, and many, like those in Yuma, also have open irrigation sources in the form of canals that provide fresh water from the Colorado River. It's a huge feat to prevent animal intrusion, but our farmers do everything they can to keep the produce safe. They use visual, auditory, olfactory, reproductive, tactile, and lethal deterrents, as well as natural deterrents like falconry. Recently, people have been proposing the use of technology like autonomous drones to protect fresh produce fields, but that is not currently an economically feasible option.

The one thing we know for sure is that there is no one solution to the issue of animal intrusion so we are looking toward the principles of Integrated Pest Management to help us. I have recently been working with a grower in Mexico who has implemented some simple but highly effective habitat enhancement techniques. He has demonstrated amazing results by simply improving wild habitat surrounding his fields. In the past 2 years since he started the improvements, he has significantly decreased animal intrusion into his fields to almost zero, and he has decreased his use of pesticides in some fields by 70%. I am eager to find growers here in Arizona who will allow me to implement the same practices locally!

While technology is great and can surely contribute to many aspects of farming, I think the best way to manage nature is by using nature to our advantage through habitat enhancement, ecosystem development, and establishment and protection of ecological



Dig Deep

By Stefanie Smallhouse, Arizona Farm Bureau President

I don't generally watch for directional signs at the airport as I routinely make my way from the gate to the sky train, but last week a few signs caught my attention. There was a gathering of about six or seven families in the receiving area, waiting in earnest holding hand made posters with names and heartfelt words of welcome. I glanced behind me and noticed a stream of service men and women heading out of the terminal. I've seen this before and given it a fleeting thought, but on this day, I decided to stop and watch this coming home unfold. Wives stretched their necks and stood on their tippy toes to see as far back in the swarm of people as possible and the kids of all ages were bubbling with energy. I don't know where these soldiers were coming from, but when I saw a toddler run as fast as her little legs would take her towards a Dad she'd been separated from for who knows how long, a teenage girl wipe her eyes in a bear hug and a woman literally jump into the arms of her husband, I was struck with a sobering gratitude for their service.



Sacrifice carries deep meaning but for military families it's routine. It's routine not because its easy, but because its expected, accepted and hardly acknowledged by all of us reaping the benefit. Our friends and foes around the world know the strength of our military and the willingness of our men and women to serve in defense of our ideals. This alone deters most advances against the USA.

Right now, China, Mexico, Canada and the European Union are testing the fortitude of American agriculture in somewhat the same way and our willingness to bear down and absorb the punches of this trade war we now find ourselves in. President Trump has asked us, the farmers and ranchers, to stand strong for our Country's future. Stand for the long-term protection of our technologies, production of raw materials and fair-trade practices. This certainly is not the first time we have been called upon to sacrifice for the good of the country, but this ask is less tangible, more complex and will take decades to recover. As I write this, Brazil is advancing its infrastructure; building what is known as a "grain train" across their country to facilitate grain delivery to China. The European Union is negotiating dairy trade with Mexico to fill the vacuum we have recently created and just signed their own bi-lateral FTA with Japan. There are dozens of examples of how world agricultural trade is quickly shifting, with countries competing for market share. There is no doubt that these countries, every one of them, have taken advantage of our farmers and ranchers – of us. They manipulate markets,

control production, exceed WTO subsidy allowances, steal intellectual property and espouse unsubstantiated phytosanitary concerns to give them an edge over American agriculture. Little by little these cuts make us weaker; boiling a frog comes to mind.



We have been told by trade officials there are options for market expansion to other countries while the Administration moves away from multi-lateral agreements to bi-lateral negotiations, and

China's consumption is so massive that they too have much to lose by an extended food fight over trade. The Administration is sympathetic to our complaints of unnecessary regulation and has walked many of those back in a short amount of time. Just recently we received word from Dave Ross, Assistant Administrator for the EPA Office of Water, that the new WOTUS rule is under internal review and is narrowed and true to the intent of the Clean Water Act. He sees opportunity for farmers and ranchers to be a partner in solving environmental challenges rather than an adversary. These are all positives for our industry and will relieve some strain on our livelihoods.

This is a very difficult time in agriculture to contemplate bearing the weight of a war of dollars and cents on our shoulders. Both Arizona Farm Bureau and American Farm Bureau have strongly expressed to the Administration and our members of Congress that this trade war was felt by our family farms and ranches before the first shot was even fired and the impact is getting more intense.

Retired Navy Seal Commander Rorke Denver recognized the important relationship between food security and military security when he said to a large auditorium full of America's farmers and ranchers, if farmers do their job, then it makes our job much easier.

We appreciate the administration's efforts in the way of the \$12 Billion aid package to offset the impact of the tariff and slow trade negotiations. But, that is a short-term solution to what could be a very long-term problem.

We'll do our job; we'll dig deep but we need a plan Mr. President. We will need multiple "wins" in other areas of the world to keep us productive during the worst of this, we will need continued support from the Administration in other areas of concern. Patience is a necessity in our industry, but that doesn't mean it will not grow thin. Americans cannot eat a sheet of aluminum or a micro-chip. 

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Candidates

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a 2-year term on the Arizona Community Foundation Board of Directors in the mid-2000's.

Representative Dunn still resides in his hometown of Yuma, along with his wife, Eileen, and sons Kirk (25) and Timothy Ty (22).

Says Representative Dunn: There are two distinct collections of experience that I believe qualifies me as a stately legislator. Firstly, my experience as a farm operator, owner of Dunn Grain and developing Dunn Plant Genetics. I, like most small business owners, face daily challenges, that need to be addressed and look for solutions to make an operation as efficient as possible. Even as the leader, I rely on the opinions of many individuals involved in producing a profitable crop, selling and processing products to ship both nationally and internationally. I need to identify issues, new opportunities, knowing what questions to ask and where I should be prioritizing my time to ensure the best outcome. Knowing who to trust and rely on is a valuable commodity at the state legislature. With ranching friends and family, statewide, having farmed in central Arizona and Yuma, I know first-hand the severity of Arizona's drought dilemma and those tough, diverse choices we will be facing concerning water, statewide.

Secondly, having served over the years on the Yuma County Farm Bureau Board, then as 2nd Vice President of the Arizona Farm Bureau and the some-12 years as First Vice President with this organization, representing Agriculture and rural Arizona has honed my perspective and provided me with invaluable insight, experience and relationships that have greatly aided me in coming up to speed and succeeding this first session. My candor and confidence in conversations and negotiations with the Governor, house leadership and fellow legislators is a true asset that comes from my Farm Bureau experience. I understand the role of those who advocate for their position on issues they may have. It is important to understand both sides of an issue when making an educated decision. Trust but verify. I know the limited voice agriculture has had at the capital. I work with the rural caucus to capitalize our common interest to strengthen our voice. The issues and conservative values for Legislative District 13 run true throughout rural Arizona.

Agriculture is a heavily-regulated industry rife with government over-reach at all levels. I feel it is my time to stand up to be a voice for agriculture and rural ideals in the State of Arizona and Legislative District 13. I believe I have the skill-set to continue to advocate with passion and serve on behalf of my fellow Arizonans.



David Cook
Arizona House of Representative, running for re-election in District 8

David Cook was born in Ponca City, Oklahoma in 1968 into a farming and ranching family and was active in 4-H and FFA. He moved to Arizona in 1985 and graduated from Miami High School in 1986. After working several years in the electrical apparatus field and helping farmers with irrigation pumps and controls, he moved back to Globe and worked for the Department of Corrections. After twelve years and receiving numerous achievements within the department, Cook retired with the rank of Sergeant to peruse his own business of ranching. In the year 2000, David and his wife, Diana, began DC Cattle Co L.L.C. David and Diana have two children David Jr (16) and Maria (15) who currently attend Miami High school and are enrolled in several sporting and school activities. The entire family works on their Globe ranch together.

Cook has attended several community colleges (Eastern Arizona, Rio Salado, and Central Arizona College). He is a proud graduate of the Arizona State Universities' Certified Public Manager Program. He has served on the Arizona Cattle Growers' Association (ACGA) Executive Committee and Board of Directors, as Federal Lands Chairman for the ACGA, as the Federal Lands Chairman for the National Cattlemen's Beef Association, is a past Young Cattlemen's Conference Chairman, board member of the Globe Miami Chamber of Commerce, on the Southern Gila County Economic Development Corporation, is a past President of the Gila County Cattle Growers' Association, past President of Gila County Sheriff's Posse, and is a past President of the Cobre Valley Republican Club. Cook currently holds positions on the Gila County Cattle Growers' Board of Directors and the University of Arizona Cooperative Extension Advisory Board.

Says Representative Cook: Being in agriculture, especially ranching, makes you aware of not only the business and financial aspects of the industry, but other things such as government regulations and the limitations that are put on producers. Having this experience and sense of why and what part of government is necessary, and what is not, allows me to protect and stand up for hard-working farmers and ranchers to preserve their freedoms. 🐾

🐾



We're High on Hemp (But It's Not What You Think!)

By Chelsea McGuire, Arizona Farm Bureau Government Relations Director

A few weeks ago, I had the pleasure of speaking about Arizona's new industrial hemp program on KJZZ. Once the radio interview dropped, I did what any mature professional would do – I sent it immediately to my dad (basically, the adult equivalent of coming home and putting your latest drawing on the refrigerator).

Though he was excited to hear the radio spot, I could tell by his response that he was a little unsure or hesitant. I was finally able to get to the bottom of his less-than-enthusiastic response when he told me that even though it was a good interview, he never thought he'd see the day when his daughter was advocating for farmers to grow drugs in her home state.

Turns out, I needed to do a little more educating right in my own back yard!

Rope, Not Dope

Understandably, many make the same connection my dad made, thinking that industrial hemp is just another name for a recreational drug. But in reality, industrial hemp is completely outside the realm of illegal pharmaceuticals. Instead, hemp is a fiber crop. By definition, it has to contain an extremely low concentration of the mind-altering compound THC, so it can't be used for narcotics purposes. (So, when we say that we're high on hemp, we don't mean it the way you think!)

The reason we are so excited about this crop here at Arizona Farm Bureau is the abundance of potential it holds for Arizona's agricultural industry. First, hemp is a plant that thrives in climates like Arizona's. It's heat tolerant and requires minimal water. Some estimate that once the crop goes into production, our farmers may be able to harvest as many as four cuttings per year, which would make Arizona the ideal state for a thriving hemp seed industry.

Second, and even more important, there's a ready market for industrial hemp and the products it can make. I've heard it said that none of us can go a day without touching something made with hemp, and that's not too far off. In addition to textiles, paper products, building materials, car parts, and more have all been developed to include industrial hemp components as an affordable alternative to other inputs.

Up until now, little, if any, of that hemp was grown in the US – and none of it was grown in Arizona. But if some Arizona farmers have their way, that will all change starting August 2019. Thanks to last session's legislation establishing the new industrial hemp pilot program, the Arizona Department of Agriculture (AZDA) has already set the wheels in motion to write the rules for growing the crop, create a licensing program, develop a fee schedule, and create an Industrial Hemp Advisory Council. Over the next 12 months, the infrastructure for Arizona producers to take advantage of the growing industrial hemp market will be put into place.

What's the Big Deal?

Why must the industry do so much work before we can grow this crop? It's all because of that misconception that industrial hemp is a drug, not a fiber crop. Due to that misunderstanding, industrial hemp was placed on the list of federally controlled substances. It's therefore illegal to grow it in the United States. But, in recognition of the competitive disadvantage that gives to American farmers (and of the fact that industrial hemp isn't a drug), Congress wrote provisions into the 2014 Farm Bill allowing states to adopt industrial hemp production programs. The licensing, fees, and council that AZDA is working to establish are all to ensure that Arizona's program complies with the federal rules for growing hemp – and therefore, that our farmers aren't at risk.

It's also worth noting that industrial hemp isn't just getting attention in Arizona. Thanks to Senate Majority Leader Mitch McConnell, provisions in the Senate's version of the 2018 Farm Bill would remove industrial hemp from the controlled substances list once and for all. By making industrial hemp a legal crop across the nation, this farm bill could make it even easier for our growers to grow this in-demand product without having to jump through seemingly endless federal hoops.

Arizona Farm Bureau is encouraged by our state's choice to be among the pioneers of this growing industry, and by recognition from decisionmakers in Washington, D.C. that our farmers deserve access to this market. No one is better at innovation than our farmers and ranchers, and this is just one more way to turn that innovation into an economic opportunity.

For more information on AZDA's industrial hemp pilot program, go to <https://agriculture.az.gov/plantsproduce/industrial-hemp-program>. 🐾

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Help us spread the word about the important role of grain in Arizona's agriculture.

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Election 2018

Dates to Remember

Election Date	Voter Registration Deadline
Primary Election August 28, 2018	July 30, 2018
General Election November 06, 2018	October 09, 2018



Summey to Serve as Ag in the Classroom Manager

We are pleased to announce the hiring of Tori Summey as Arizona Farm Bureau's Ag in the Classroom Manager. Summey joins Katie Aikins and our Team of Interns as they work to expand the reach and impact of our Ag in the Classroom (AITC) Program.

Summey is a born and raised Arizonan who has a passion for promoting agricultural literacy.

Summey grew up a city kid and found her love of the industry and appreciation for Arizona's hard-working farmers and ranchers while attending high school at Arizona Agriculture and Equine Center (AAEC) Paradise Valley Campus. Since then, she has served as an Arizona State FFA Officer, an Arizona and National Beef Ambassador, an elementary school 4H Leader, and a Collegiate Agricultural Ambassador. Her time as an Intern for Arizona National Livestock Show, Arizona Beef Council, and Agricultural Marketing Services at the USDA in Washington D.C. strengthened her knowledge of the industry and deepened her passion to promote it.



Tori Summey

Through her studies, Tori served as a research assistant for the University of Kentucky's Agricultural Education department, where she facilitated a multicultural teaching methods undergraduate course and has conducted research aimed at building agricultural literacy regarding safe farming practice and food justice and nutrition. Her research and interests also led her to work more closely within the community, serving as a leader for several agricultural literacy grants in partnership with the Tweens Nutrition and Fitness Coalition. Summey holds a B.S. in Agricultural Economics and an M.S. in Agricultural Education/Community and Leadership Development.

Summey believes in the future of agriculture and the ability to promote STEM education and learning through its applied context. We are excited to have Tori on our Team! 🚗

Don't Miss Your County Farm Bureau Annual Meeting!

Influence Policy, Elect Leaders, and Have a Great Time

By Staff Reports

One of the highlights of the Farm Bureau year is the County Annual Meeting. Members can spend time with fellow farmers and ranchers from their area, hear from a speaker or two, and work on solutions for the issues affecting agriculture. In addition, members get to elect leaders for their county Farm Bureau as well as who will represent them as delegates at the state annual convention in November.

If nothing else, you should go for the food, which is always guaranteed to be excellent at a Farm Bureau meeting!

During the summer, Policy Development meetings are held in each county to surface issues and solutions for Farm Bureau to work on. Hopefully you were able to attend yours, or will be able to if your county has yet to meet.

Once a suggested solution is approved by your fellow members as official Farm Bureau policy at the County Annual Meeting, you are no longer a single voice in the field. You now have the power of Farm Bureau behind you, and that is a formidable force for getting things done.

John Boelts is 1st vice-president of Arizona Farm Bureau and chair of the Policy Development Committee. "Farm Bureau is the Voice of Agriculture because we speak for our members. I encourage all Ag members to have their voices heard by attending their county's policy development and Annual meetings," says Boelts.

County Annual Meeting information is available online at www.azfb.org in the Calendar of Events under the Events tab. Select your county in the top right drop-down and look in August or September.

To discuss this further or to get involved, contact Christy Davis at 480.635.3615, Amber Morin at 480.635.3611, and Ana Otto at 480.635.3614. 🚗

Arizona's Desert Durum® is One Amazing Story

By Julie Murphree, Arizona Farm Bureau Outreach Director

Arizona grows world-renowned wheat, Desert Durum®! Because of its consistent quality, our Desert Durum® keeps global markets coming back for more. Here's why.

The phrase "Desert Durum®" has been trademarked with the U.S. Patent office under the ownership of the Arizona Grain Research and Promotion Council and the California Wheat Commission.

As a result, only Desert Durum® grown in Arizona and California qualifies for the Desert Durum® trademark.

The special wheat is produced under irrigation in the desert valleys and lowlands of Arizona and California.

These are regions of high temperatures (May-June temperatures average 32C) and low rainfall (annual precipitation averages less than 200 mm).



Desert Durum® wheat is planted November through February and harvested in May and June.

Desert Durum® enters the market up to three months ahead of the spring durum crops harvested in other North America durum-producing areas.

Desert Durum® is delivered "Identity Preserved" to U.S. domestic and export markets, a system that allows buyers to purchase grain of varieties having intrinsic quality parameters specific to their needs.

Annual production requirements can be contracted ahead to experienced growers using certified seed and then "identity" stored for season-long shipment at the buyers' schedule.

Desert Durum® averages an annual export rate of 50%, especially exported to Italy to make pasta.

A local brewer, Arizona Distilling Company, produces Arizona's first ever grain-to-bottle whiskey. Made with Desert Durum® wheat, it maintains a unique balance of sweet and spicy, where molasses, pecan pie, caramel and black mission figs tame the noticeable bite of peppercorn, allspice and cinnamon, says the Arizona Distilling Company website.

Desert Durum® is highly regarded for its protein strength allowing a variety of different pasta shapes!

Ultimately, we, here in Arizona and California, believe our Desert Durum® holds celebrity status on the world market, certainly with Italy. This, the country, that knows pasta!

Our ideal climate for creating a quality wheat means a bright future for Arizona and California agriculture, certainly with grains. 🚗



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Don't forget about the Built Ford Tough F-150 Sweepstakes!***
Text the word SWEEPS to 46786*** to enter!

*Program 36238: \$500 Bonus Cash offer exclusively for active AL, AR, AZ, CA, FL, GA, IL, IN, IA, KS, KY, LA, MI, MS, MO, NE, NM, NC, ND, OH, PA, SC, TN, TX, VA Farm Bureau members who are residents of the United States. Offer is valid through 1/2/2019 for the purchase or lease of an eligible new 2017/2018/2019 model year Ford vehicle. Not available on Shelby GT350®, Shelby® GT350R, Mustang Bullitt, Ford GT, Focus RS 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 member for 30 consecutive days prior to purchase. Limit one Bonus Cash offer per vehicle purchase or lease. Limit of five new eligible vehicle purchases or leases per Farm Bureau member during program period. See your Ford Dealer for complete details and qualifications.

**NO PURCHASE NECESSARY. A PURCHASE WILL NOT INCREASE YOUR CHANCES OF WINNING. MUST BE LEGAL RESIDENT OF U.S. OR D.C., 21 YEARS OR OLDER WITH VALID DRIVER'S LICENSE TO ENTER AND A CURRENT FARM BUREAU MEMBER. ADDITIONAL RESTRICTIONS MAY APPLY. Void where prohibited. Sweepstakes ends 9/30/2018.

***Autodialed marketing messages will be sent to the number provided. Consent is not a condition of purchase or entry. Message and data rates may apply. For entry and official rules with complete eligibility, prize description and other details, visit www.fordfarmbureauadvantage.com.



Rivadeneira

continued from page 7

corridors. Wildlife will be an ongoing challenge for our growers, but I do not believe that it is insurmountable. We just need to think outside the box by incorporating Integrated Pest Management methodologies, and I think we will find much better ways to manage wildlife than what we are currently using.

Arizona Agriculture: The farmers initiated the Arizona Leafy Greens Marketing Agreement (LGMA) and now we have the federal Food Safety Modernization Act (FSMA) that in Arizona is enforced through the Arizona Department of Agriculture under FSMA's Produce Safety Rule. FSMA took much of its standards from LGMA, though it's relatively basic compared to the more robust standards of LGMA. What else can our farmers be pushing the federal government to change/improve or drive to protect consumers?

Dr. Rivadeneira: I think our farmers consistently go above and beyond to protect consumers. Arizona (and California) farmers lead the nation in food safety with worker health and hygiene training, water testing, animal deterrents, use of certified biological soil amendments, pre-harvest pathogen testing, auditing, and documentation. Since my work focuses on pre-harvest food safety, I do not know as much about what happens after the crop leaves the field, but from what I understand, it doesn't appear that the rest of the farm-to-fork continuum is regulated in terms of food safety as strictly as farmers are regulated. In addition, I think end users, including restaurants and actual consumers, have to take responsibility for themselves once fresh produce arrives in their own kitchen. Every one of us chooses to take risks every day. We leave our home, get into a vehicle, buckle up, and drive away. We know we could get into an accident, we know we could die. But we get in the car anyway, and we do everything we can to keep ourselves safe. There are so many aspects of our lives in which we accept a certain level of risk, but for some reason, people do not accept the same risk and implement the same precautions when it comes to their food. It is unreasonable to think that there is zero risk in eating fresh foods that are grown outdoors, that require specific temperatures to remain fresh, that are handled by numerous people, and that are potentially transported long distances. If you are putting something in your body that you are preparing in your own kitchen, regardless of where it originally came from or what it is (meat, vegetables, legumes, etc.), I believe you need to take responsibility to know that it is safe to eat. If you run a restaurant, the last thing you want is for your customers to become sick so the final responsibility lies on you and your staff. If you are the last person to handle food before it goes in someone's mouth, including your own mouth, then you have final responsibility in making sure it's safe.

So, to answer the question about what farmers should do to get the government to better protect consumers, I would say that farmers have done and continue to do an amazing job at maintaining the highest food safety standards, and that's what they should continue to focus on. If farmers are expected to fight for consumer safety, then shippers, processors, harvesters, restaurants, and everyone else involved in the farm-to-fork continuum should have to do that too. I find it baffling why so much falls on the shoulders of the farmers when it comes to food safety. That's where it starts, but that is certainly not where it should end. Feeding our country is a group effort, and the best way to protect consumers is for each player to maintain the highest standards regarding their own responsibilities.

Arizona Agriculture: Are growers regularly going to you and other scientists to learn more and apply technology?

Dr. Rivadeneira: I feel like most growers in the Yuma area know that the University of Arizona Cooperative Extension is here to help them. As an Extension Specialist, my only job is to help growers with food safety concerns. My research is always based on their needs, and the outcomes from my research are designed to give them solutions, or at least options. There are a handful of farmers who I meet with regularly, and we explore current and upcoming issues so I can know what kinds of grants to apply for and what kinds of research are needed.

Most fresh produce growers are pretty savvy when it comes to science and technology, so they are open to research and to trying new techniques and methods, even those that I present to them that are considered a little outside the box. During the recent *E. coli* outbreak, industry reached out to us at Cooperative Extension for expertise and assistance in identifying the source of the *E. coli* contamination, and to examine a number of variables, including weather-related concerns. They know that we conduct unbiased research, and will do our best to give them answers. In addition, working groups have been formed to seek out the root cause of the outbreak, including the Leafy Greens Food Safety Task Force and the Desert Food Safety Consortium. The Task Force includes people from industry, research, and regulatory agencies, and includes sub-working groups to cover specific areas of concern related to the outbreak.

Arizona Agriculture: Do you see value in FDA's decision to name a farmer related to the recent *E. coli* outbreak in romaine, and not name a shipper or distribution network that consumers might recognize?

Dr. Rivadeneira: In my opinion, it was not appropriate for FDA to name a single farm during the recent *E. coli* outbreak since they could not identify exactly where and when the lettuce was contaminated. They reported the name of the farm who simply grew the lettuce, which seems pointless because it does not benefit public health in any way. Since that's the case, it seems odd that they didn't name everyone involved in the entire distribution network. The public read the update on the FDA and CDC websites identifying the farm who grew the lettuce, or they heard it on the news or read it in the newspaper, and that name stuck in their heads. It didn't matter that the next sentence stated that they couldn't determine if the contamination happened on the farm and they couldn't pinpoint where the contamination actually occurred. The damage was done. The farm they named is one that not only participates fully in the implementation of food safety practices, but they are a leader in food safety in Yuma, actively participating in a leadership role on the Yuma Safe Produce Council, and maintaining exemplary records of their food safety efforts. So, I find it frustrating that they would name any individual farm.

Arizona Agriculture: You said something to me the other day at a "Foodie" forum that I thought was meaningful. "Our U.S. farmers are daily feeding millions." Please expand on this point?

Dr. Rivadeneira: During our peak growing season, approximately 1,000 to 1,200 trucks transport leafy greens out of Yuma on a daily basis. I can't even grasp the total number of people who eat fresh leafy greens from Yuma from November through March every year. Despite this astronomical number, we have only had one foodborne

outbreak traced back to Yuma's leafy greens, and the source was never confirmed. Did we grow lettuce in Yuma that was identified as a potential source in the recent *E. coli* outbreak? Yes. Did it get contaminated while it was in the field or at any point while it was in Yuma? No one knows. While the FDA claims to have found the same *E. coli* strain in a canal that provides irrigation water to Yuma agricultural fields as was identified in the outbreak, that still doesn't tell us the source. The water did not contaminate itself.

With the millions of pounds of leafy greens that our farmers supply to people across the nation, I think it's pretty miraculous that not a single outbreak has been confirmed from a definitive source in Yuma. It's tragic that people recently got sick from lettuce that was grown here. I know how painful it is to have a serious foodborne illness. I had *Salmonella* in 1986. I was hospitalized with my organs failing, and I remember that the pain was so bad that I didn't want to live. I suffered for 20 years with residual issues related to that infection. I say that not for sympathy, but so that people will know that I genuinely understand the physical and emotional pain associated with foodborne illness. I just hope that everyone remembers that the actual source of the recent *E. coli* outbreak has not yet been definitively found, and this fall when we start leafy greens production again, farmers will be doing everything they have always done to keep leafy greens safe, plus taking additional precautions. The majority of our growers, despite the fact that they are large commercial farms, are owned by families who are involved with every aspect of production, often feeding their product to their own families. They are real people who care about what happens to the people who consume the food they grow. They take pride in their work and in their efforts to provide safe fresh produce to our country. I hope that consumers will not let this incident change their view of Yuma growers who have always grown the best winter vegetables in the country!

Arizona Agriculture: From the perspective of a scientist, what else could we be communicating to the public?

Dr. Rivadeneira: It's important for the public to know that growers are doing everything they can to help find the root cause of the outbreak. I have been interviewed by several media outlets asking if growers are playing any role in the outbreak investigation. I think the public wants to know where growers stand, what role they are playing, and what they are doing in anticipation of our upcoming leafy greens season. There is always a question of how much transparency is good or effective during an outbreak, and that will have to be something that each grower decides for him/herself. But the public wants to know that growers are protecting them and their families so I think sharing that information is critical.

Arizona Agriculture: Does science show that *E. coli* carried in the water, then absorbed into the soil and taken up by the plant could cause *E. coli* to be present in the plant?

Dr. Rivadeneira: My understanding from other UA agricultural experts is that it is unlikely that *E. coli* from irrigation water is taken up in the roots of plants, resulting in the contamination of plant tissue. The concern with having *E. coli* O157 in irrigation water is that it could touch the edible portion of the plant, possibly through overhead irrigation, and that could potentially cause contamination. There are many other variables that could also result in *E. coli* contacting and/or surviving on plant tissue, including wind, temperature, the presence of animals, etc.

Arizona Agriculture: If *E. coli* is confirmed in the canals, why have we not had a rash of outbreaks in Yuma and elsewhere? If it's that pervasive in the water (which is not yet confirmed with all scientific certainty), where's the data to support a widespread problem?

Dr. Rivadeneira: My colleague, Dr. Channah Rock, who is a Water Quality Specialist with the University of Arizona Cooperative Extension, is better suited to answer this question, but I will give you my take on it. The recent outbreak of *E. coli* O157 was tragic, and everyone is working very hard to find the root cause of the contamination. Based on testing results from the FDA, people are concerned that there is *E. coli* O157 in the canal water that growers use to irrigate crops. Growers test for generic *E. coli* in irrigation water frequently during the growing season, but generic *E. coli* tests do not directly test for *E. coli* O157, which is the pathogenic *E. coli* related to the recent outbreak. So, it is certainly possible that *E. coli* O157 has gone undetected in canal water.

But as you mentioned, why have we not had an issue with it until now? Well, there are a couple of things to consider. First, the samples that the FDA collected that tested positive for *E. coli* O157 were huge! Their samples were 50L (liters) compared to the 100mL (milliliters) that are usually collected. That means they collected 500 times the normal sample size! It's like comparing a bottle cap full of water (normal sample size) to a bathtub full of water (FDA sample size)! This tells us that the prevalence of *E. coli* O157 in the canal water is probably pretty low since it took such a large sample to be able to find it. With such low levels, a combination of natural die-off in the environment and our standard measures for ensuring produce safety probably protected consumers. Secondly, we don't know where in the canal the positive samples were collected so it could be confined to a specific area, which would limit exposure. And third, growers go to great pains to ensure that fresh produce leaving their fields is safe by following, and often going beyond all the rules and regulations placed on them by the Leafy Greens Marketing Agreement and the Food Safety Modernization Act.

Farmers monitor and maintain their fields, train their workers, and conduct extensive testing so that any potentially contaminated produce never leaves the field. While I don't know if we will ever find the root cause of the recent *E. coli* outbreak, growers are already preparing to implement whatever corrective actions they believe will help to further protect the crops. Much more environmental sampling, potentially over the long term, will need to be conducted to search for answers. I hope that industry will depend on me and other experts at the University of Arizona to conduct sound science that will give them potential answers to this outbreak. 🍌

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Policy Development
is Our Game**

Go to azfb.org and select "Public Policy" to Review our Policy book!





Feeling Creative? Have your Artwork Displayed in Washington D.C.

Enter the 2018 Arizona Farm Bureau Photography Contest

Anyone who has ever taken a photograph in their life has taken good pictures because, photography, like any art, is meant to capture a moment, convey a feeling, tell a story.

Your photo entry for this contest should tell a story about Arizona agriculture.

Rules

We don't like a lot of rules but there are a few.

First Rule

It doesn't cost anything to enter!

Who can enter?

The contest is open to any amateur photographer who is a regular agriculture member of a County Farm Bureau in Arizona.

Contest Dates

The contest begins August 15, 2018 and ends September 15, 2018. Electronic entries must be received by 11:59 p.m. PST, September 15, 2018. Entries become the property of the Arizona Farm Bureau Federation and will not be returned. Winners will be contacted via email by October 15, 2018 with details regarding awards. Winning photos will be framed, displayed and auctioned off at the Arizona Farm Bureau Annual Meeting in November.

Entries

All entries, must be submitted in digital format via email to peggyjogoodfellow@azfb.org. Complete the contest form and upload your entry. Mailed entries will not be accepted.

- Submit high resolution (no less than 300 ppi) photos in jpg or tif image formats. Send the largest format possible at 300 ppi.
- Entries must be original, unpublished, and non-professional (We define a professional as anyone who profits from their entry in any way other than contests).
- Entries thought to be outside of the above criteria may be removed from consideration without the entrant being notified.
- Entries must not contain material that violates or infringes the rights of another, including but not limited to privacy, publicity or intellectual property rights, or that constitutes copyright infringement. Again, these photos need to be the work of the actual photographer submitting them.
- All photos given to Arizona Farm Bureau may be used for free for commercial and non-commercial use.

Judging

Judges will be from around the state, selected at the sole discretion of the Arizona Farm Bureau. The judges may or may not be professional photographers nor are they necessarily trained in the ways of artistic presentation or composition. Judges will simply select the entries that strike them most for whatever reason. Decisions of contest judges are final.

Now for the important stuff!

Prizes

Selected because it must exemplify or clearly illustrate Arizona agriculture, the first-place winning photo will be placed on display at the American Farm Bureau Federation in Washington D.C. on the Wall of States, artwork from across the country. The completed artwork will be mounted in a 31.5" x 40" professional frame. The top four photos will be awarded the following prizes.

First prize: \$500 and the chosen Washington D. C. Wall of States winner
Second Prize: \$200 Third Prize: \$100 Fourth Prize: \$50



Arizona Farm Bureau Federation Photo Contest Entry Form

Name _____

Address _____

City _____ State _____ Zip _____

E-mail _____

Phone _____

County Farm Bureau _____

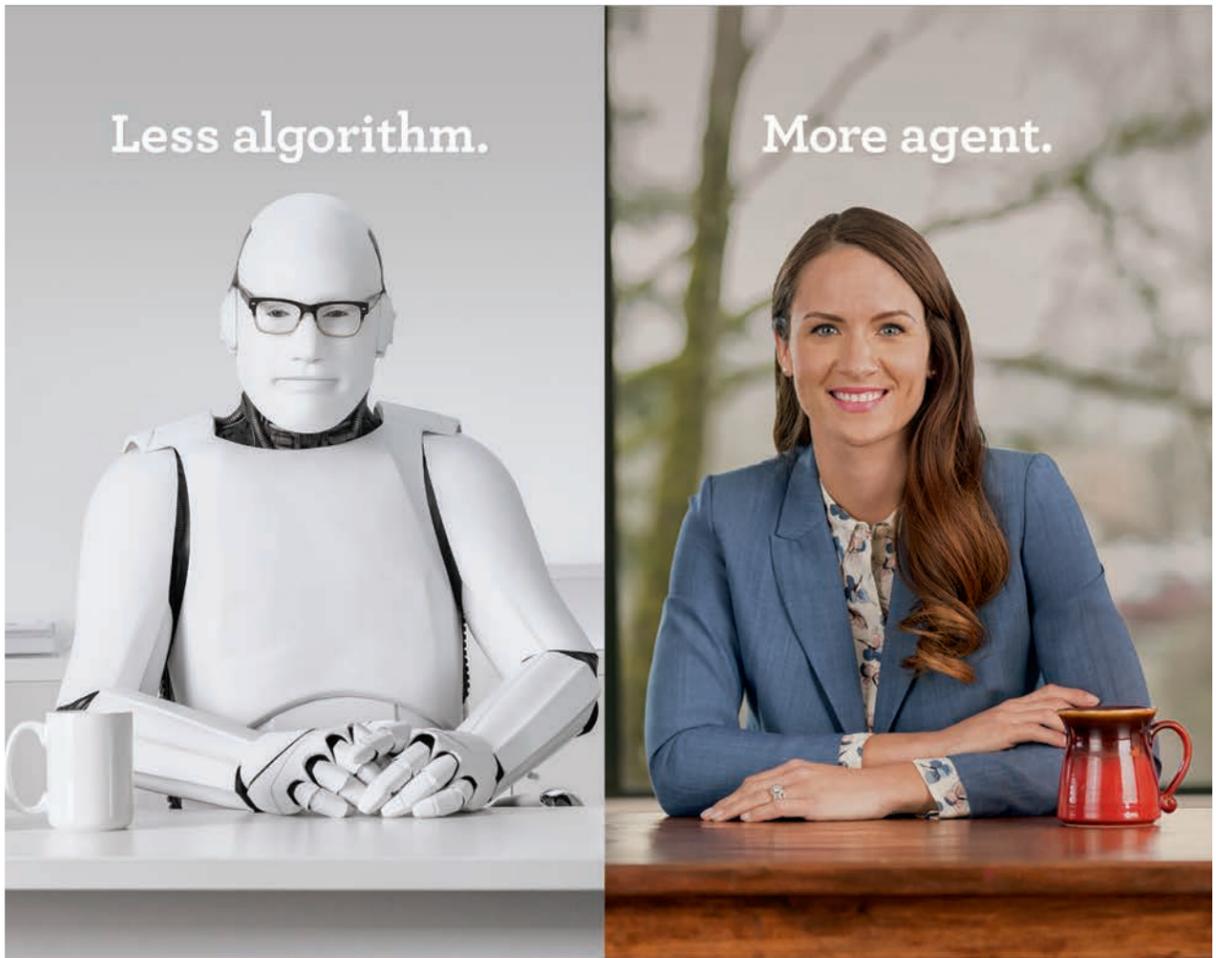
Member # _____

I hereby consent to the use of my entry submitted to the 2018 contest sponsored by the Arizona Farm Bureau for the purpose of publication, news, advertising, trade or any other lawful use or reproduction. If requested, we can send the application via email.

Signature _____ Date _____

Prize winners agree to hold harmless and release AZFB, its staff, officers, and affiliated entities from loss, claim, injury, damage or expense, including, but not limited to reasonable attorney's fees and costs, which are in any way connected or associated with the use of any prizes or prizes received from AZFB

Winners may be required to sign an IRS Form W-9 or equivalent. We will give photographer attribution. AZFB may, without offering any consideration to or obtaining the permission of its submitter, use any such photograph for any purpose, such as publishing it in Arizona Agriculture or Choices, posting it on AZFB Web site, reproducing it for AZFB use, or selling it at a Farm Bureau auction.



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Sure, computers can be helpful, but when it comes to creating a customized plan for your future, nothing can really replace a human. Together, we'll create a plan that's right for you, not anyone else.

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