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Arizona Agriculture

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CONVERSATION ABOUT HARNESSING THE POWER OF INFORMATION IN BATTLING BUGS: DR. PETER ELLSWORTH

By Julie Murphree, Arizona Farm Bureau Director of Strategic Communications

In the ever-evolving world of agriculture, where pests pose constant threats to crop yields and sustainability, Dr. Peter C. Ellsworth stands at the forefront of innovative pest management.

As a Professor of Entomology and Extension Specialist at the University of Arizona, Statewide Integrated Pest Management (IPM) Coordinator, and Director of the Arizona Pest Management Center, Ellsworth has dedicated his career to developing science-based solutions that balance ecological integrity with economic viability. His research dives deep into the biology and behavior of pests like the whitefly, Lygus bug, and pink bollworm, unraveling their interactions with crops to devise sustainable control strategies.

Leading multidisciplinary teams and fostering collaborations across borders—such as through the Mexicali Cotton IPM Project—Ellsworth's work, backed by over 160 publications, has reshaped IPM practices in Arizona and beyond.

If not conducting research, you'll find Dr. Peter Ellsworth instructing in Integrated Pest Management. Says Ellsworth, "Agriculture is applied ecology."

In this exclusive interview, we explore his insights on advancing conservation biological control, navigating resistance management, and shaping the future of pest management in a changing world.

Arizona Agriculture: What Does Integrated Pest Management Mean to You?

Dr. Ellsworth: By definition, Integrated Pest Management (IPM) is a strategy that assembles and integrates information and tactics to manage pests while minimizing risks to human health, the environment, and the economy.

But to me, IPM is more than a strategy—it's a way of thinking. It's science-led and people-driven, grounded in ecology, risk management, and decision-making. IPM harnesses the power of information and brings it into the field, into the hands of growers and pest control advisors (PCAs) who must make smart choices every day.

It's not something you'll see advertised on a bag of produce. But every successful grower uses IPM—even if they don't always call it that. They have to. It's how they engineer biological systems to work in their favor. And I do mean engineer. Growers are ecological engineers. They raise living organisms—plants and animals—within ecosystems that include both threats and allies. They make decisions about inputs and interventions, always balancing cost, benefit, and risk.

The brilliance of IPM is in its simplicity: **make the best decision possible with the best information available.** It's not about eliminating every pest. It's about managing systems to achieve economic goals while maintaining ecological balance.

This idea transformed me as a young student. During an era when DDT was king and "womb to tomb" spraying was typical, IPM introduced a radically different philosophy: management over elimination, integration over singular silver bullets. That idea has endured for over 65 years—and continues to evolve. It's durable, flexible, and still ahead of its time.

Arizona Agriculture: How Did You First Get Involved in IPM?

Dr. Ellsworth: My journey started in the classroom—an ambitious undergrad, I petitioned my way into a graduate-level course in IPM. That experience culminated in a senior project on sunflower IPM in New Hampshire, and I threw myself into the classics of applied insect ecology. Lots of book learning.

But the real education began later, standing in an Arizona cotton field overrun with whiteflies. Growers were desperate for answers. They had just come off one of the worst pink bollworm outbreaks in history—and now this. The new, invasive whitefly fouled cotton lint with sticky, sugary honeydew, turning fields black with sooty mold. Arizona's reputation for premium cotton was unraveling.

There were more questions than answers. What was this insect, exactly? How did it behave? How many were too many? What made it thrive—and what could stop it? From the ground up, we began building the foundations of a program that would someday turn this overwhelming pest into a manageable, even minor issue. But at the time, all we had were questions,

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USDA OPENS ECONOMIC ASSISTANCE SIGN-UP FOR FARMERS

By Daniel Harris, Arizona Farm Bureau Government Relations Manager

The U.S. Department of Agriculture (USDA) is now accepting applications for economic assistance under the Emergency Commodity Assistance Program (ECAP), aimed at helping producers impacted by a challenging agricultural economy. Farmers have until **August 15, 2025**, to apply.

The assistance, authorized by Congress in the December 2024 Continuing Resolution (CR) with a total of $10 billion allocated, is targeted toward alleviating hardships resulting from declining commodity prices and rising input costs. Eligible commodities include corn, wheat, sorghum, barley, upland and extra-long staple cotton, rice, peanuts, soybeans, various oilseeds, dry peas, lentils, and chickpeas.

Payments are acreage-based, utilizing predetermined rates per commodity—for instance, corn at $42.91 per acre, upland cotton at $84.74 per acre, and wheat at $30.69 per acre. Prevented planting acres qualify for assistance at half the designated rate.

To expedite and simplify the ECAP application process, USDA's Farm Service Agency (FSA) will distribute pre-filled applications to producers who reported the 2024 acreage. Producers can also apply online at fsa.usda.gov/ecap or visit their local FSA office.

Secretary of Agriculture Brooke Rollins emphasized the importance of swiftly delivering this aid saying, "Producers are facing higher costs and market uncertainty, and the Trump Administration is ensuring they get the support they need without delay."

American Farm Bureau Federation President Zippy Duvall welcomed USDA's timely action, recognizing the critical need for economic assistance saying, "This emergency assistance is critical in helping farm families navigate an agricultural economy under severe strain, ensuring they can continue to make ends meet until market conditions improve."

USDA will initially distribute payments using an 85% factor to ensure available funding is not exceeded. Additional payments may follow, contingent upon remaining resources.

Producers must ensure their acreage reports for 2024 are filed by the August 15 deadline. Necessary forms include FSA-578 (Report of Acreage), Form AD-2047 (Customer Data Worksheet), and the new Form CCC-943, among others. Those unsure of their documentation status are encouraged to contact their local FSA office.

Farmers can estimate potential payments using USDA's ECAP online calculator at fsa.usda.gov/ecap.

For additional details or to apply, producers should visit fsa.usda.gov/ecap or connect with their local county FSA office.

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AG-TO-URBAN WATER TRANSFERS: EMPOWERING ARIZONA FARMERS

By Daniel Harris, Arizona Farm Bureau Government Relations Manager

Arizona's farmers have long navigated water challenges, but the "Ag-to-Urban" water transfer proposals present a unique opportunity to shape our state's future. Senate Bill 1611 (SB 1611) and House Bill 2298 (HB 2298), sponsored by Sen. T.J. Shope and Rep. Gail Griffin, build on the 1980 Groundwater Management Act's vision to incentivize voluntary transitions from high-water-use agriculture to lower-water-use urban development in the Phoenix, Pinal, and Tucson Active Management Areas (AMAs).

These bills offer farmers a flexible, market-driven exit strategy, rewarding stewardship while addressing urban housing needs. In contrast, the Arizona Department of Water Resources' (ADWR) rulemaking proposal under Governor Katie Hobbs imposes restrictive conditions that limit farmers' options. For Arizona Farm Bureau members, SB 1611 and HB 2298 align with your interests by prioritizing certainty, conservation, and economic vitality. This article demystifies the legislative path and explains why it's the right choice for Agriculture.

The 1980 Groundwater Management Act aimed to manage Arizona's groundwater by encouraging sustainable land use transitions that preserve the market value and property rights of Agricultural land, a promise SB 1611 and HB 2298 fulfill. These bills address the dual crisis in AMAs, groundwater reliance and a 2023 moratorium on new subdivisions exacerbating housing shortages.

These bills offer an incentive to farmers to voluntarily retire IGFRs, transferring water allocations to urban developers via transferable "Physical Availability Exemption Credits" (PAECs). This reduces groundwater use while paving the way for housing growth, ensuring farmers benefit from their historical water rights.

The legislative proposal amends Arizona's Groundwater Code, allowing farmers to relinquish IGFRs for PAECs, which developers would use as an equivalent alternative to proving a 100-year groundwater supply under the Assured Water Supply (AWS) program. Land irrigated at least once in the past five years qualifies, maximizing potential participation. Targeting 425,232 acres across AMAs, the plan could support up to 1.06 million homes.

Flexible replenishment requirements (33%–100% based on credit volume) enable greater water savings than ADWR's proposed static 50% minimum. These credits would be issued within a 90-day streamlined process, offering farmers a clear, predictable path.

As of April 2025, both bills are advancing toward full chamber votes.

ADWR's rulemaking, still in draft form, integrates with the AWS program but imposes restrictive conditions. It requires land to be actively irrigated three out of five years, and offers non-transferable Physical Availability Conservation Credits (PACCs) tied to specific projects. Targeting 133,100 acres in Phoenix and Pinal AMAs for 150,000–400,000 homes, it maintains current replenishment requirements without enhancing water savings. Extensive ADWR oversight and hydrological modeling add bureaucratic hurdles, shrinking farmers' options and disincentivizing conversions. This regulatory rulemaking approach, subject to change with each administration, lacks the certainty farmers need.

SB 1611 and HB 2298 stand out for their farmer-centric design. The one-year eligibility threshold ensures broad participation, unlike ADWR's three-year rule. Transferable PAECs create a fair market, allowing farmers to maximize land value without restrictive project ties. The legislative path's certainty, rooted in statute rather than fluctuating regulations, empowers farmers to plan confidently. By leveraging market flexibility and scale, it accelerates the retirement of irrigation rights, achieving substantial groundwater reductions while supporting rural livelihoods and urban growth.

Misconceptions about Ag-to-Urban need clarification. It's not a mandate, participation is voluntary, preserving farmers' autonomy. It's not a water grab; urban uses would use less water, and replenishment ensures sustainability. Nor does it threaten agriculture's heritage; targeting only a fraction of farmland, it enables farmers to reinvest proceeds to modernize or relocate. Challenges remain, including concerns about aquifer strain, which the bills address through robust replenishment, and potential pressure to sell, where the Farm Bureau must advocate for fair market protections. Political risks, like a veto from Governor Hobbs, loom, but bipartisan support fuels optimism.

The Arizona Farm Bureau supports SB 1611 and HB 2298 for empowering farmers with a voluntary, flexible exit strategy that balances water conservation with economic vitality. We urge members to advocate for legislative passage, ensure protections against coercive sales, and engage with ADWR's rulemaking as a fallback. This is your chance to lead Arizona's water and housing future. Visit azfb.org or contact your local representative to stay informed and amplify farmers' voices.

HE LED WITH QUIET STRENGTH AND UNWAVERING DEDICATION

By Julie Murphree, Arizona Farm Bureau Director of Strategic Communications

Gerald Flake, a fourth-generation rancher from Snowflake, Arizona, was a pillar of his community and a steadfast advocate for agriculture, whose legacy resonates through decades of service to the Arizona Farm Bureau. He recently passed from this life to the next surrounded by his family.

Serving as Navajo County Farm Bureau President and Second Vice President of the Arizona Farm Bureau, Gerald Flake was a tireless voice for farmers and ranchers.

Born into a family rooted in the rugged landscapes of Northern Arizona, Gerald raised cattle with a deep respect for the land and a commitment to preserving the ranching way of life. Alongside his beloved wife, Arlene, to whom he was married for 59 years, he raised eight children, instilling in them the values of hard work, integrity, and community.

AN ARIZONA AGRICULTURE LEGACY

Gerald's contributions to agriculture extended far beyond his ranch. A graduate of Arizona State University with a degree in Animal Husbandry, he brought knowledge and passion to his roles as County Supervisor with the Farmer's Home Administration USDA and a farm supervisor at Snowflake pig farms.

SEE **STRENGTH AND UNWAVERING DEDICATION***PAGE 5*

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FEEDING THE ECONOMY: ANOTHER ECONOMIC RESOURCE

By Julie Murphree, Arizona Farm Bureau Director of Strategic Communications

In a nation where food is both a necessity and a cultural cornerstone, the Feeding the Economy organization advocates for the U.S. food and agriculture sector with a strong agriculture slant. This coalition, supported by a diverse group of 36 food and agriculture groups in 2025, illuminates the immense contributions of these industries to the American economy and way of life. Through its annual "Feeding the Economy" report, the organization provides a comprehensive, farm-to-fork analysis of how this sector drives jobs, wages, and economic output across the country, while emphasizing its resilience amid ongoing challenges.

According to the organization, America's food and agriculture sectors are responsible for $9.5 trillion, or about 20%, of the country's economic activity.

WHAT FEEDING THE ECONOMY DOES

The Feeding the Economy initiative is more than just a data-driven project—it's a celebration of the interconnected web that sustains America's food supply and economy. The organization compiles and shares detailed insights into the direct and indirect impacts of food and agriculture, from the fields where crops are grown to the tables where meals are shared. Its annual report, now in its ninth year as of 2025, quantifies the sector's influence on employment, economic activity, and community vitality, offering data at national, state, and local levels. Of note, its data does not rely on the USDA Census of Agriculture.

The 2025 report underscores that the U.S. food and agriculture industries are foundational pillars of American culture and commerce. These sectors directly support over 24 million jobs—representing 15% of total U.S. employment—and generate more than $9.5 trillion in economic activity, accounting for nearly one-fifth of the nation's total output. While this figure reflects a slight dip from the previous year's $9.6 trillion, it still highlights the sector's enduring strength, having grown nearly 25% since the COVID-19 pandemic despite supply chain disruptions and economic pressures.

FROM FARM TO FORK: THE JOURNEY OF AMERICAN AGRICULTURE

The story begins with America's nearly two million farms and ranches, which span two out of every five acres across the country. These operations, rooted in the rich soil of the heartland and extending to the coasts, form the backbone of the food supply chain. From there, the journey continues through a vast network of almost 200,000 food manufacturing, processing, and storage facilities. Here, millions of food scientists, production workers, logistics experts, truck drivers, and engineers work tirelessly to ensure that fresh, safe food reaches consumers both domestically and abroad.

The process doesn't end at production. The food and agriculture sector supports over one million restaurant and foodservice locations, as well as approximately 200,000 retail food stores, where Americans access the bounty of the nation's harvests. Beyond feeding people, the economic ripple effects are profound. Workers in these industries spend their earnings in their communities, bolstering local economies—particularly in rural areas—where agriculture often serves as a lifeline.

ARIZONA'S CONTRIBUTION: A SPOTLIGHT ON THE GRAND CANYON STATE

Arizona exemplifies the critical role of the food and agriculture sector at the state level. According to the 2025 Feeding the Economy report, Arizona's food and agriculture industries are a powerhouse of economic activity and job creation. While exact state-specific figures from the 2025 report are not fully detailed here, past reports and related data provide a glimpse into the scale of Arizona's impact. For instance, the 2023 report indicated that the state's food and agriculture sector supported 370,878 jobs, generated $21.9 billion in wages, and contributed $7.5 billion in taxes. Given the national trend of growth in direct employment (up by over 1 million jobs since 2020), Arizona's numbers are likely even higher in 2025, reflecting its robust agricultural heritage and modern innovations.

Arizona's diverse ecosystems—from arid deserts to fertile valleys—enable farmers to grow a wide array of crops, from almonds to zucchini, and support thriving livestock and dairy industries. The state's agricultural output, valued at $5.4 billion in cash receipts in 2022, includes top commodities like dairy, cattle, and lettuce. The 2025 report's national data suggests that Arizona continues to play a vital role in the $183 billion in annual U.S. food and agriculture exports, with crops like cotton (88% of which is exported) driving economic activity.

Beyond direct contributions, Arizona's food and agriculture sector generates multiplier effects, where dollars spent locally amplify economic benefits. The Arizona Department of Agriculture notes that the industry's $23.3 billion impact on the state's economy is growing, fueled by emerging sectors like pecans and wine production. This growth aligns with the national narrative of resilience and innovation highlighted in the Feeding the Economy report.

CHALLENGES AND RESILIENCE

Despite its achievements, the food and agriculture sector faces challenges. The 2025 report notes that while wages have risen, they haven't kept pace with inflation, putting pressure on workers. Additionally, agricultural manufacturing jobs have declined by nearly 30,000 nationally since 2020, signaling industry strains. Yet, the sector's ability to increase economic output by nearly 25% since the pandemic underscores its adaptability and importance to national stability.

To explore the full 2025 Feeding the Economy report and dive deeper into Arizona's numbers, visit www.FeedingTheEconomy.com. From the farm to the fork, this organization reminds us that food and agriculture don't just feed our bodies—they nourish our economy and communities too.

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HARNESSING THE POWER OF INFORMATION *continued from Page 1*

urgency, and a commitment to figure it out.

Arizona Agriculture: Why Is IPM Important in Arizona Agriculture?

Dr. Ellsworth: Arizona's unique environment—long seasons, near-continuous plant growth, and unrelenting heat—makes it an ideal proving ground for IPM. But it also means that pest pressure is high. Whiteflies cycle through more generations here than almost anywhere else in the world.

Historically, growers responded with intense insecticide use. One grower told me he sprayed 25 times in a single season—and still lost his cotton crop. Another showed me his field map and said, "Come July, it's never a matter of **whether** to spray—just **what** to spray. The ag pilot's on call every Sunday."

But that was then. Arizona growers and researchers have flipped the narrative. We adopted Bt cotton early. We eradicated pink bollworm. We built resistance management plans that worked across commodities. And we developed predator-based thresholds that now give growers the confidence not to spray. Collectively, cotton growers have saved well over **$600 million** and avoided applying more than **40 million pounds** of active ingredient. Insecticide use is down 95%. That's not just a win for the environment—it's an economic lifeline.

IPM's power in Arizona is its connection of science to action. It works because it's local, tailored, and trusted.

Arizona Agriculture: What Has Been One of the Most Significant Pest Challenges in Your Work?

Dr. Ellsworth: Without question, it was the **whitefly crisis of the 1990s.** But it wasn't just a pest outbreak—it was a full-blown **systems failure.**

The invasive B-biotype whitefly arrived like a storm. It had multiple hosts, rapid reproduction, resistance to available chemistries, and virtually no established thresholds or control protocols. It moved fluidly across crops—spring melons to summer cotton to fall melons and winter vegetables—leaving sticky, sooty devastation in its wake. Growers were in crisis, and no one had clear answers.

We had to build the playbook from scratch. What is this pest? How does it behave here? When does it cause damage, and how can we measure risk? That meant basic biology, ecological research, and rapid extension of early findings—all at once.

At the University of Arizona, we partnered with USDA scientists, state agencies, and industry to form a coordinated response. We developed sampling systems and economic thresholds that helped PCAs time insecticide applications with precision. We brokered cross-commodity resistance management agreements—a first in our region—that allowed growers to share modes of action intelligently across multiple crops.

Perhaps most significantly, we introduced new selective insecticides—the first of their kind used against whiteflies in the U.S. These didn't wipe

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STRENGTH AND UNWAVERING DEDICATION *continued from Page 2*

One of the farm families that grew cucumbers for the historical and well-known Arnold's Pickles (no longer in operation) was Gerald and Arlene Flake. In the 1950s, the company contracted with farmers, like the Flakes, in the Snowflake and Taylor area. The Flakes were not the biggest producers and only grew for three or four years but remember growing cucumbers from the end-of-July to late September and served to supplement their farming operation that was mainly cattle, alfalfa and corn.

DEDICATED TO VOLUNTEER LEADERSHIP

Yet, it was his leadership in the Farm Bureau, beginning in 1970, that truly defined his impact. Serving as Navajo County Farm Bureau President and Second Vice President of the Arizona Farm Bureau, Gerald was a tireless voice for farmers and ranchers. Like all Farm Bureau leaders, he often traveled to Washington, D.C., to advocate for policies critical to the agricultural industry.

Together with Arlene, Gerald kept the Navajo County Farm Bureau vibrant, recruiting new members and fostering a sense of unity. His sons, Will and Reed, followed in his footsteps, with Reed currently serving as Navajo County Farm Bureau President and a State Board member, a testament to Gerald's influence on the next generation. His more than six decades of service were marked by a love for agriculture and a belief in the Farm Bureau as its strongest advocate.

Gerald's life was one of quiet strength and unwavering dedication. He was a man who worked the soil from his cucumber-growing days decades ago, who cherished his faith as a member of The Church of Jesus Christ of Latter-day Saints, and who left an indelible mark on Snowflake. His passing leaves a void, but his legacy endures in the fields he tended, the family he raised, and the agricultural community he championed.

Gerald Flake was more than a rancher; he was a steward of Arizona's heritage, whose work will inspire generations to come.

Flake was quoted as saying in a 2015 profile article for Arizona Farm Bureau, "I grew up in a Farm Bureau family. My parents were members for as long as I can remember. Farm Bureau is our representation with state and federal governments."

HIS LEGACY IS ONE OF RESILIENCE

By Julie Murphree, Arizona Farm Bureau Director of Strategic Communications

Jim Goldman was a respected dairyman from Casa Grande, Arizona, who passed away on March 17, 2025, at the age of 81 after a prolonged battle with cancer. His life was deeply rooted in agriculture, reflecting a legacy of hard work, community involvement, and dedication to farming.

EARLY LIFE AND AGRICULTURAL ROOTS

James Lee Goldman was born in 1943 in Tempe, Arizona, to Milton and Margaret Goldman. His early education at Tempe High School included participation in the cross-country team and the Future Farmers of America (FFA). He pursued higher education at Arizona State University, earning an agricultural degree, which laid the foundation for his career as a dairyman. Growing up on the family farm, Jim learned the value of hard work.

INVOLVEMENT WITH ARIZONA FARM BUREAU

Jim Goldman's legacy is one of resilience, with his agricultural education and farm work reflecting a commitment to the industry.

Goldman shares with Arizona agriculturalist Kenny Evans the distinction of having the longest service on the Arizona Farm Bureau Board of Directors with a service record of 27 years and on the Pinal County Farm Bureau board for 32 years. He also briefly served on the Maricopa County Farm Bureau board. He, along with others, is credited with reviving the Arizona Farm Bureau's Young Farmer and Rancher program during his youth when the program had struggled with participation back in the mid-1960s. His wife, Ruth, served as chair of the Arizona Farm Bureau's Women's Leadership Committee.

"Jim was that type of guy that when in a meeting and he spoke up, you made sure to listen and pay attention," said Arizona Farm Bureau First Vice President Richie Kennedy and Pinal County Farm Bureau President. "He thought deeply and had a wealth of knowledge behind him. He would always tell me about a book he was reading. Jim was always my "go to" for our prayer before our meetings, he had a very strong and unapologetic faith."

An example of the Goldmans "get in there and participate," Jim and Ruth urged the author to sign up to read a chapter from the Old Testament during the annual "Bible Reading Marathon" on the steps of the U.S. Capitol the spring of 2007. Scripture is read aloud, uninterrupted, for just under four days straight at this annual event and that year it aligned with the regular Arizona Farm Bureau visit to the Capitol. When the Goldmans and the author serendipitously came across the oral reading of scripture the organization had some openings, and both Jim and Ruth persuaded Murphree to go up and read from Isaiah. With a lump in her throat and an overwhelming sense of fellowship, the author complied. This cherished memory will never be forgotten. The Goldmans have spent a lifetime spurring people on.

His legacy is one of resilience, with his agricultural education and farm work reflecting a commitment to the industry. His story is a testament to the challenges and dedication of Arizona's farmers, leaving a lasting impression on those who knew him and the agricultural community at large.

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HARNESSING THE POWER OF INFORMATION *continued from Page 5*

out everything. They spared natural enemies, which allowed ecological mortality factors to recover. That gave rise to the idea of **bioresidual:** the notion that a well-timed, selective spray could trigger a cascade of natural suppression that extended far beyond the chemical's direct effect. Where we used to express chemical residual in days, we now express bioresidual in weeks.

Looking back, it was a perfect storm—but it also became a turning point. That crisis laid the foundation for the IPM system we have today.

Arizona Agriculture: How Do You Integrate Chemical and Biological Controls?

Dr. Ellsworth: Today, we're in a far better place, because we've learned how to integrate chemical and biological controls into a cohesive system. And it works not just in theory, but on real farms, with real success.

One of the most important breakthroughs was what we called bioresidual. We saw that selective insecticides could knock back pests without harming their natural enemies. That ecological "backup system"—the spiders, lacewings, pirate bugs, big-eyed bugs—picked up where the chemistry left off. The result? Fewer sprays, better control, and a more resilient system.

With my long-time collaborator, Dr. Steve Naranjo, we cataloged the community of cotton predators—more than two dozen species—and identified the ones that actually drive control of whiteflies. With further assistance of our Ph.D student, Tim Vandervoet, that led to our development of **predator inaction thresholds:** simple guidance that tells a grower when not to spray because nature is already working. That's a powerful message.

PCAs now count predators as carefully as they count pests. We've trained them to look for lacewing larvae, Collops beetles, minute pirate bugs, Drapetis flies, crab spiders, and big-eyed bugs. These creatures aren't just scenery—they're essential labor in the cotton IPM program.

When insecticides are used, their role has shifted. No longer are they about "wiping the field clean." Instead, they're about **nudging** the system—reducing pest pressure just enough to let predators regain control. For too long, our industry saw chemical and biological controls as competing philosophies. In truth, they're complementary tactics. It's not ideology—it's ecology.

Arizona Agriculture: How Do Arizona Growers Use Your Research in the Field?

Dr. Ellsworth: The biggest reward for an applied scientist? Seeing your work used. And here in Arizona, I've been lucky—lucky to work in a professional, progressive agricultural community; 'lucky' to have crises that demanded innovation; and lucky to collaborate with some of the best Pest Control Advisors in the country.

PCAs are the beating heart of our IPM system. They're licensed, trained, trusted professionals who turn science into strategy. Our work is built for them—sampling plans, economic thresholds, resistance tools, predator inaction thresholds. They take it from research to row crop.

People often think of pest management as new products: insecticides, seed traits, or equipment. But our biggest contributions often aren't physical—they're conceptual. They're the software behind the hardware. We build decision aids, models, and guides that make those products work better. And we give them away, freely, through Cooperative Extension.

That's the genius of the land-grant model. We don't sell products—we deliver systems. Systems that help growers make smarter decisions with fewer resources.

One example: resistance management. Most people don't worry about resistance until it's already here. We're trying to get ahead. Right now, we're building a tool that maps insecticide usage and identifies temporal refuges—times when no selection pressure exists. That allows PCAs to choose chemistries based on actual local resistance risk. It's proactive, not reactive.

Bottom line: good science gets used. And I've seen our science reduce insecticide use by **over 90%**—while **improving control.** That's success.

Arizona Agriculture: How Do You See Technology Playing a Role in IPM Now and in the Future?

Dr. Ellsworth: Technology has always been central to IPM—and will be even more so in the future. But tech alone isn't the answer. Trust is the linchpin. Whether we're using drone imagery or predictive models, what matters most is that PCAs and growers trust the data and the decisions it informs. That's why education—the soft side of technology—is just as critical as the tools themselves.

A key lesson I've learned is that tech that does not earn user trust won't be adopted no matter how brilliant it is. IPM, at least in Arizona, has credibility because of the major achievements to date. Trust is what bridges the gap between data and decision. We're entering a world where there's so, so much data. IPM was and is data-driven. In my role as an Extension Specialist, I hope that I can help design trusted solutions that bridge that gap. No matter how much tech we develop, farming still relies on people. Our science and implementation must keep people at the center of all that we do.

Arizona Agriculture: What Are Common Misconceptions About IPM?

Dr. Ellsworth: A lot of people think IPM means "never spray." It doesn't. It means **spray smart**—spray **when** it's needed, **what** is needed, and **only** as much as needed. Our job is to minimize risk: to people, to ecosystems, and to the bottom line. Sometimes that means spraying. Often, it means waiting, or choosing something softer, or doing nothing at all—because the system is working.

Another misconception is that IPM is too complicated or expensive. That might be true somewhere, but it's not true here. In Arizona, we've proven that selective insecticides, though more expensive per gallon, actually save money by reducing overall spray frequency and preserving beneficial insects. The "cheap" option often comes with hidden costs.

And then there's the idea that IPM is hard to teach or apply. Sure, the science is complex. But implementation doesn't have to be. We publish simple tools: a two-page chart color-coding insecticides by selectivity. A one-page sampling guide titled "In 7 Minutes or Less." Beneath that simplicity is rigorous ecology and math. But for the grower or PCA in the field? It's grab-and-go guidance. That's what IPM should be—**usable science.**

Arizona Agriculture: What Are You Most Proud of in Your IPM Work?

Dr. Ellsworth: Can I just say—**surviving?** The early 1990s were brutal. Pink bollworm, whiteflies, 13-spray seasons. At the time, I couldn't imagine being here three decades later, still working on IPM and still seeing growers use what we've built together.

I'm proud of our work on **predator inaction thresholds**—one of the few operational models in the world that guides growers on when **not** to spray based on active biological control. That work stands on the shoulders of 65 years of IPM theory and finally delivers something practical, field-ready, and adopted.

I'm proud of our success in **integrating chemical and biological controls**, not as opposing camps, but as allies in a larger system. That harmony is rare in global IPM, and it reflects both the strength of our science and the openness of Arizona growers.

But most of all, I'm proud of the **community** we've built—scientists, pest control advisors, growers—all pulling in the same direction. That unity is the real engine behind IPM's success.

Arizona Agriculture: What Advice Would You Give to the Public—or the Next Generation—About Science, Agriculture, and IPM?

Dr. Ellsworth: Agriculture is applied ecology. It's systems thinking with real-world stakes. If you love solving puzzles that feed the world and protect it at the same time—IPM is your calling.

The world is changing fast. We're training students today for jobs that don't yet exist. But one role will always matter: the **translator**—the person who takes science and turns it into something useful. In agriculture, that person often lives in Extension.

Working in the public sector, on behalf of real people, in real time, is both a challenge and a privilege. You're not publishing for tenure—you're publishing to save a crop. You're not doing research for curiosity's sake—you're doing it because someone's livelihood depends on it.

Science is under scrutiny. Public investment is in question. But the value of applied, trustworthy, transparent science has never been higher. If you want a career that's hard, humbling, and full of purpose—step in. We need you.

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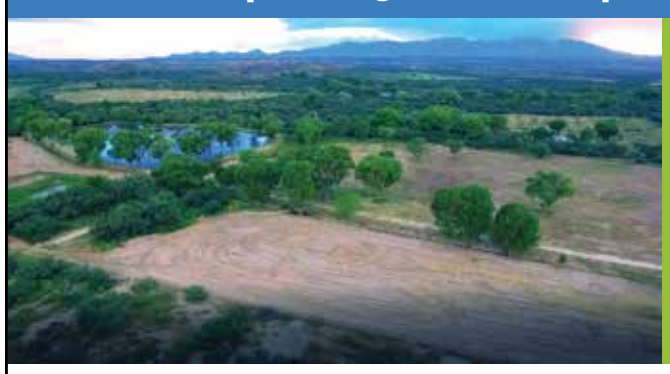
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8 REASONS TO ATTEND THIS YEAR'S SUMMER LEADERSHIP CONFERENCE

By Staff Reports

The **Summer Leadership Conference** is around the corner and will be held in Flagstaff this year! Sponsored by Arizona Farm Bureau's Women's Leadership Committee, this year's leadership conference will be held at Little America, July 9 and 10. This year's theme Harvesting Hope, sets the stage for a full schedule.

Why should you attend the conference this year? We've got 8 reasons for you to join us.

1. ***Location, location & ...discount***: Little America in Flagstaff, Arizona, is situated on 500 acres of Ponderosa pine forest just off Interstate 40, at an elevation of approximately 7,000 feet in the Coconino National Forest.
2. ***Activities for everyone in the Family:*** A dedicated playground with traditional equipment for younger kids, plus cornhole, ladder ball, horseshoes, and sand volleyball for family fun, with complimentary equipment available at the front desk. Plus, you'll find Onsite Trails and Disc Golf: Miles of scenic trails for hiking amidst wildflowers and fall foliage, plus a disc golf course for friendly family competitions.
3. ***Free from Event Conflicts:*** The July dates for this conference don't conflict with FFA or any other agriculture organizations' conference dates.
4. ***Networking.*** There is plenty of time to relax and network with your fellow Aggies. Plus, you can make new friends.
5. ***Meet the Influencer: Keynote- Jack Elliot:*** Join us for an inspiring keynote address by Dr. Jack Elliot, a distinguished professor and Endowed Chair for International Agricultural and Extension Education at Texas A&M University. With a remarkable 17-year tenure at the University of Arizona, where he rose to Department Head, Dr. Elliot brings unparalleled expertise in sustainable agricultural development and global education. As Regional Director for Africa with the Norman Borlaug Institute, he has championed transformative initiatives in agricultural leadership and extension. A recipient of the 2014 Outstanding Agricultural Educator Award and past president of the International Association for Agricultural and Extension Education, Dr. Elliot's insights promise to ignite innovative thinking on fostering resilient, inclusive agricultural systems worldwide. Don't miss this opportunity to hear from a visionary shaping the future of global agriculture!
6. ***Tailgate Conversations.*** Join us at the tailgate for a friendly conversation and learn from a diverse panel on difficult topics. Panelists share their insights, experiences, challenges, and successes on topics that always seem to hit home.
7. ***Anyone's Welcome.*** The educational conference encourages young and old, male and female and all segments of agriculture.
8. ***It's Inspirational and Encouraging:*** One past conference attendee said, "This meeting is a breath of fresh air to my busy schedule. Rubbing shoulders with amazing leaders, listening and learning from amazing speakers and relaxing help motivate and inspire me in the best ways. This conference helps me be the agriculture leader this world needs!"

To register for the conference, go to www.azfb.org, then click on the events section. If you need more information, contact Hannah DalMolin at 480.635.3611 or hannahdalmolin@azfb.org. Reserve your hotel by June 13, 2025, to receive the special group rate.

Special Note: Enjoy a Pre-conference train ride on Grand Canyon Railway. Register in addition; this is a separate payment from the conference. Benny Aja and Frank McNelly will be speaking during the train ride to give some history on ranching in Coconino County.

FUNDRAISER RAISES THE BACON FOR AG EDUCATION

By Katie Aikins, Arizona Farm Bureau Director of Education

The 8h Annual Racin' for the Bacon Derby Dinner is happening on Friday, September 19th! This year's event, presented by the Arizona Pork Council, supports the Arizona Farm Bureau Educational Farming Company. Our Education Foundation works to support programs that educate youth and others about agriculture in the state of Arizona. Over 152,000 students, teachers, and community members have received free resources, programs, and materials provided through the Foundation's support this past year alone.

With the average consumer being three to four generations removed from the farm and ranch, there is a major gap in consumers' food story. Help us close that gap by attending this year's event. We want to be sure that the food story comes from those that are producing it.

Join us at this year's 'Racin' for the Bacon Derby Dinner on Friday, September 19th from 5:00pm to 8:30pm. We promise delicious Arizona Grown appetizers and desserts, a BBQ dinner from the BBQ Master Bruce Cain, and Live and Silent Auctions full of can't miss items.

Oh, and we can't forget the pig races and derby hat competition. So, pull on your boots (or your most comfortable shoes) and your favorite hat and join us to support ag education in Arizona! Your attendance alone assures that we can teach nearly 3 Arizona classrooms about their food and fiber this year. Tickets can be purchase by calling Katie Booth at 480-635-3605 or online at www.azfb.org.

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YUMA TEACHER NAMED EDUCATOR OF THE YEAR

By Katie Aikins, Arizona Farm Bureau Director of Education

Seen here with Katie Aikins (left), Ann Ogram will be attending the National Ag in the Classroom Conference along with Arizona Farm Bureau's Ag in the Classroom staff this summer.

William Butler Yeats once said, "Education is not the filling of a pail, but the lighting of a fire." This captures the essence of learning as a passionate journey, sparking curiosity and inspiring growth rather than merely stocking knowledge like a container. It's an invitation to cultivate a lifelong flame of discovery and enthusiasm.

The spark has been ignited and will continue burning into the future at Gary A Knox Elementary in Yuma, Arizona thanks to an agriculture science teacher who enjoys nothing more than sharing her passion for agriculture with her students. A passion that has earned Ann Ogram the Arizona Farm Bureau Ag in the Classroom Educator of the Year Award. Her enthusiasm is contagious, and it can be heard from each of her students as they walked me through the school garden. As we walked the large plot of land that in-

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EDUCATOR OF THE YEAR

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cludes 63 garden boxes, managed by the students and their teacher, the chatter of students all eager to share their part of the garden pulled me in a dozen different directions.

"Mrs. Aikins look at our tomatoes!"

"Mrs. Aikins look at our celery."

"Mrs. Aikins, look, I caught a ladybug!"

"Mrs. Aikins, I want you to meet Gwenifer (one of the many scarecrows designed and named by the students that reside in the garden)."

"Mrs. Aikins look, we had sunflowers!"

Their enthusiasm was contagious, and it was obvious that they love what they are learning.

Mrs. Ogram has been actively involved in the school garden since its creation in 2012. Knox Farm- A Garden of Learning is a beautiful 63 bed garden where students are actively engaged in all aspects of the preparation, planting, managing, and harvesting a wide variety of vegetables, fruits, and flowers. Students learn about real farming practices and how to farm sustainably, protecting earth's resources as farmers do. Working with the local community and participating in industry professional development activities, Ogram teaches about the most current practices in the industry and exposes her students to the many opportunities that agriculture can provide them in the future.

Through her programs, Ogram aims to spark curiosity and inspire future generations to appreciate and perhaps even pursue careers in agriculture. It is her hope "that each student leaves my class with a deeper understanding of where their food and daily products come from, recognizing the hard work and dedication that goes into every step of the agricultural process. Without agriculture, our world would indeed look very different."

Ms. Ogram, we couldn't agree more.

FORD BLUE ADVANTAGE VEHICLES NOW ELIGIBLE FOR FARM BUREAU DISCOUNT

By Staff Reports

Ford enthusiasts and Farm Bureau members have a new reason to celebrate! As of April, Ford has expanded its Farm Bureau Recognition Program to include Ford Blue Advantage Vehicles, offering an exclusive $500 cash reward to eligible buyers. This exciting update broadens the scope of the program, making it easier for customers to enjoy savings on a wide range of certified pre-owned Ford vehicles.

ELIGIBLE VEHICLES AND REQUIREMENTS

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The $500 cash reward applies to the purchase of select Ford Blue Advantage vehicles from the 2020 to 2026 model years. Qualifying vehicles include those certified under the Gold, EV (F-150 Lightning only), or Blue Certified tiers, with a mileage cap of 80,000 miles. The offer covers popular models such as:

- Ford Maverick
- Ford Ranger
- Ford F-150
- Ford Super Duty
- Ford F-150 Lightning

This expansion provides Farm Bureau farm and ranch members with more options to access reliable, high-quality vehicles while enjoying significant savings.

PROGRAM DETAILS AND LIMITATIONS

It's important to note that the Ford Blue Advantage offer operates under a distinct program number within the Farm Bureau Recognition Program. Buyers can only claim one Farm Bureau program number per purchase, meaning the Ford Blue Advantage reward cannot be combined with other Farm Bureau incentives. Additionally, vehicle sales completed through this specific offer will not be included in the quarterly payouts typically associated with the program.

For those seeking additional information, Ford encourages customers to visit the Farm Bureau Recognition Website, or go to azfb.org and look in our membership tab.