

# GREEN FIRE TIMES

*News & Views from the Sustainable Southwest*



SANTA FE COMMUNITY COLLEGE'S TRADES & ADVANCED TECHNOLOGY CENTER

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Storytelling is at the heart of community health. We have an opportunity to change the story going forward, which can lead to positive transformational change. GFT shares inspiring stories of hope and community action. By helping our communities discover who they once were and what they can become, a more positive future can be created.

Of course, it is an extremely challenging time to continue to produce a free, quality, independent publication. Production costs have greatly increased. Many local and regional publications have folded or have been bought up by corporate entities. Fortunately, a growing number of publications are receiving boosts from nonprofits that are devoted to protecting journalism. GFT is owned by Southwest Learning Centers, Inc. (est. 1973), a nonprofit educational organization. SWLC provides a mentorship program for some of GFT's writers, aspiring journalists and documentarians.

Green Fire Times is struggling to survive. We also need funding to upgrade our online archive and make 15 years of articles more accessible to community members, students and researchers. Don't assume that someone else will help. Please consider making a tax-deductible donation through our website, or send a check made out to Southwest Learning Centers (with a notation 'for GFT') to P.O. Box 8627, Santa Fe, N.M. 87504-8627. Also, please advertise! The print edition—currently published every other month, while our website is updated more frequently—is widely distributed from Albuquerque to Taos and beyond. For a rate sheet, visit [GREENFIRETIMES.COM](http://GREENFIRETIMES.COM).

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# The Future of Water

## Impact to Businesses & Communities

BY DOUG PUSHARD

Water is the essence of life, and yet it is almost universally taken for granted. This is at a time when we are witnessing unprecedented and significant water issues crop up around the world. Just a quick sampling of headlines from the first three months of 2024:

- Mexico City may be months away from running out of water
- In the winter of 2021, more than 150,000 people in Jackson, Miss. were without running water—and it has gotten worse
- Agriculture built these High Plains towns in Colorado—now it might run them dry

Today, water is readily available to most of us, but not all. Per the United Nations, five billion people, two-thirds of the world's population, will face shortages by 2050. This is not just somewhere else in the world; it is also coming to the USA.

Most surprising is that the technology has existed to solve our most pressing water problems for years, but impediments abound to prevent solutions from being implemented.

*Water is managed as both a business and as a common good.*

Water is managed as a resource (i.e., drinking water) and a waste product (i.e., stormwater). Water is managed as both a business and as a common good. Water is segregated into different operating silos to optimize differing business models. Yet, at the same time, an abundance of water in one operating unit is not considered a resource for another. Population growth and new housing development are two major issues underlying the need to find more water, yet water is not linked to land-use management.

Balancing all these issues while ensuring safe, readily available drinking water is a challenge. Attracting and managing employees in today's complex work environment and keeping sewage stench away from populations and floodwaters at bay is enough to overwhelm most water professionals.

Yet, cracks in the wall are beginning to appear that will dramatically change how we view water. Businesses are starting to recognize its importance. General Mills now includes the risks to this critical business component as a strategic factor. More and more businesses, such as Google and Home Depot, now have an executive in charge of sustainability, and water is managed as critical to the core business.

- The U.S. Water Alliance's One Water approach manages all water—whether from the tap, a stream, a storm, an aquifer, or a sewer—in a collaborative, integrated, inclusive and holistic manner. One Water can change and regenerate our way of living, our opportunities, our environment and our society. This initiative pushes for a new way of viewing and managing water from a utility perspective.

- The National Blue Ribbon Commission advances best management practices to support onsite non-potable water systems within individual buildings or at the local scale. They assist code officials in updating building codes to enable new uses for existing and previously untapped water sources.

- Pipe-sizing curves for sizing the pipes installed in every U.S. building have not been updated since the 1940s! Every new building using these curves is putting in tremendously oversized pipes and costing everyone money. IAPMO has released a Water Demand Calculator (WDC) that accurately sizes the required pipes and is working with permitting agencies to ensure these new pipes and the calculations are accepted.

New water technology companies are beginning to push into areas that will disrupt traditional code compliance but save water and will eventually find a way into the market.

- Orbital's greywater recycling shower recycles water while taking a shower. This type of device will reduce potable shower water use by 70-80 percent but is not allowed by current plumbing codes in the United States. Products like these are being installed in Europe and will eventually find a way into the U.S.

- Tiny homes come equipped with greywater systems, which includes kitchen water in the waste stream. Greywater codes exclude kitchen waste from greywater discharge in almost all state and national plumbing codes, yet thousands of these new units are being sold and installed across the country.

- Treating blackwater to drinking water quality is a known science. Other countries have been doing this for over a decade. Yet, only California now has standards to enable water utilities to begin the years-long process of bringing this 'new' source of drinking water online.

- Smart Water meters, both whole-house and landscape meters, are becoming widely available. They increase homeowners' awareness of water and directly attack the more-than-10-percent leakage reported in end-user studies. This will give homeowners newer, more accurate meters than utilities currently install. Data from products like these will drive increased awareness because usage can now be viewed down to the fixture level. That was impossible just 10 years ago.

These trends are breaking down the traditional ways we look at and manage water.

Technology and perceptions are changing, water source uses are changing, and weather patterns are changing. All things water are beginning to change and will be thought of and managed very differently in the future.

*Trends are breaking down the traditional ways we look at and manage water.*

Communities need to begin rethinking how they manage water—no longer as separate silos (i.e., a potable water company, a sewer company, a land use and planning department, etc.), but as a collective group so water

can be viewed as one. Water conservation will no longer be a revenue-reducing effort, but a water-producing department. Stormwater and blackwater will be considered potable water sources, not a waste stream. Onsite residential reuse (i.e., rainwater, greywater, or blackwater) will become commonplace and part of the community water growth plan. It will be vital to integrate the management of all water resources and future water demand management through new policies and regulations.

### 2024 Next Generation Water Summit

The Next Generation Water Summit (NGWS), held annually in Santa Fe, N.M., brings together the building and development community, water-reuse professionals and water policymakers in a collaborative setting to share and assist in pushing these efforts forward. Workshops, presentations, tours and networking have been part of the NGWS since its inception almost 10 years ago. Join us on June 20 and 21, live or virtually.



Many of the initiatives and companies mentioned above will be at this year's NGWS. Join us in creating the water future we all need. [www.NextGenerationWaterSummit.com](http://www.NextGenerationWaterSummit.com) ■

*Doug Pushard is co-founder of KUELWater, a nonprofit focused on water re-use and recycling. [WWW.KUELWATER.ORG](http://WWW.KUELWATER.ORG)*



*Courtesy, New Mexico Outdoor Recreation Division*

# 2024 Next Generation Water Summit

*“Solutions in a Changing World”*

*June 20-21, New Mexico State Capitol, Santa Fe*

BY MIKE COLLIGNON

The seventh edition of the Next Generation Water Summit (NGWS) will take place June 20–21 in Santa Fe. The annual event will again be offered in a hybrid format, with both in-person and virtual attendance options. The 2024 theme is “Solutions for a Changing World.”

The summit brings together the building and development community, water reuse professionals and water policymakers in a collaborative setting to share best practices and learn about innovative conservation and reuse techniques that can be used to comply with conservation restrictions being enacted across the Southwest.

“The NGWS offers introductory and well as advanced educational sessions and continuing education credits,” said Christine Chávez, water conservation manager for the City of Santa Fe. “This is critical in these times when management of changing water resources has enormous impact on the livability of our cities and towns.”

The NGWS will have a new venue. The New Mexico State Capitol building (“the Roundhouse”) will host professional sessions on Thursday and Friday. A New Mexico-focused track is a prominent part of the agenda on Friday. The NGWS focuses on both regional and national water challenges and holds 2–3 concurrent session tracks after each day’s opening keynote.

Some of the sessions include:

- “Panel: Educating the Next Generation”
- “Water-Energy-Carbon Footprint: A Case Study”
- “Innovative New Water Products”
- “Panel: WERS, EPA and HERSH2o Outdoor Water Use – What is the Difference?”
- “AI Role in Water—Today & Tomorrow”
- “New Mexico Water History—A Primer”

### Keynote Talks

David Sedlak, professor at the University of California, Berkeley and author of *Water for All*, will deliver a highly anticipated keynote address on June 20, drawing connections among seemingly disparate problems as a powerful means of bringing about change. “It is not your imagination,” Sedlak says. “Water crises are arriving at a greater frequency because the 20th-century approach to water cannot keep up with our new reality. Although it’s a big challenge, I am hopeful that together we can solve any crisis if we open our minds to new ideas and act before crises get out of hand.”

Gary Klein, a pioneer in energy efficiency and renewable energy since 1974, will present his keynote on June 21. Reflecting on his journey into the field of water conservation and efficiency, Klein draws inspiration from experiences in Lesotho, in southern Africa; the California Energy Commission and others. “I’m looking forward to the opportunity to share 50 years’ worth of observations about what works, what doesn’t, why water is so undervalued and what we can do about it,” Klein said.

There will be a plethora of free, in-person events for locals and out-of-state guests to attend. The Mayor’s Reception will take place at the Drury Plaza Hotel on the evening of June 20. Saturday, June 22 will feature multiple in-person events, including four tours taking place at various times between 9 a.m. and 4 p.m. Informational tables will be set up at the first tour stop,

# SANTA FE'S CERTIFIED WATERWISE PROGRAM CONTINUES TO FLOURISH

BY GLENN SCHIFFBAUER

Water conservation is a critical aspect for businesses, especially in regions like Santa Fe where water resources are limited and in high demand. The City of Santa Fe's Certified Waterwise Program plays a pivotal role in this regard, offering businesses valuable resources and incentives to save water and money while contributing positively to the environment.

The water conservation program has achieved significant milestones, expanding to encompass over 120 establishments, including medical labs, places of worship, and a growing number of lodging businesses. This year, we are extending our efforts to certify short-term rental properties, underscoring the program's efficacy and relevance across diverse sectors within our community.

Recently, the city's Commercial WaterWise Program was honored at the Alliance for Water Efficiency's (AWE) inaugural Water Efficiency and Conservation Symposium in Chicago, Illinois. This initiative, characterized by a multi-layered partnership involving public, private and community entities such as the Santa Fe Green Chamber of Commerce, Santa Fe Community College and YouthWorks, has emerged as a national exemplar for water conservation initiatives.

The success of this program can be credited to collaborative endeavors. The Santa Fe Green Chamber of Commerce collaborates closely with businesses, facilitating their enrollment in the program, conducting meticulous water-efficiency audits and implementing tailored recommendations. These recommendations often encompass retrofitting more efficient water appliances and adopting industry best practices. Auditors, certified through the Santa Fe Community College, rigorously assess establishments ranging from restaurants to medical facilities, ensuring a holistic and effective approach to water conservation.

What distinguishes our program is its unwavering commitment to social equity, exemplified by our collaboration with YouthWorks. Through structured educational and employment training initiatives, at-risk and disadvantaged youth are empowered to assess water efficiency in outdoor environments. This dual impact not only contributes significantly to water conservation efforts but also nurtures workforce development and community resilience.

Businesses participating in this program have already made significant strides, collectively saving millions of gallons of water. As an example, one hotel in Santa Fe went through the assessment, and we found that by replacing their higher-flow toilets, they could save over a half-million gallons per year. The kicker is that the City of Santa Fe's rebate program makes this conversion almost no-cost to the business. This not only benefits its bottom line by reducing water bills but also demonstrates its commitment to sustainable practices and responsible water usage.

In essence, the City of Santa Fe's Water Conservation Program stands as a beacon of success and innovation, promoting sustainable water management practices and fostering meaningful partnerships within our community. So, the next time you visit your favorite spot, take a moment to see if it has the Certified Waterwise badge. If not, consider asking them about their stance on water conservation and why they haven't joined the program yet. Better, take a look at the Save Water Santa Fe businesses page on our website ([www.sfsustainablebusiness.com](http://www.sfsustainablebusiness.com)). Every business that joins strengthens our collective effort in saving water and preserving this precious resource for future generations.

For those who have yet to participate, we encourage you to inquire about the program and its benefits. It's a great opportunity to contribute to water conservation efforts in Santa Fe and beyond. Moreover, participation in the Certified Waterwise program is completely **free**, making it a no-brainer for businesses looking to save water and reduce expenses. They can sign up by contacting the Santa Fe Green Chamber of Commerce at [glennschiffbauer@gmail.com](mailto:glennschiffbauer@gmail.com).

*Glenn Schiffbauer is executive director for the Santa Fe Green Chamber of Commerce and co-chair of the Next Generation Water Summit.*



the City of Santa Fe's Water Conservation Office. Tours will offer opportunities to view a greywater system, Santa Fe Community College's greenhouse and a permaculture exhibit.

All registrants (in-person or virtual) will be able to attend live and on-demand sessions and network with fellow attendees from around the world. To register and for more information, go to [www.NextGenerationWaterSummit.com](http://www.NextGenerationWaterSummit.com).

Hosts of the NGWS are the Santa Fe Green Chamber of Commerce; Green Builder® Coalition; City of Santa Fe; KUELwater, and the Santa Fe Area Homebuilder's Association. The Alliance for Water Efficiency is a promotional partner; the education partner is Triconic, LLC, and the national media partner is Green Builder® Media. ■



*Mike Collignon is an author and executive director and co-founder of the nonprofit Green Builder Coalition.*



*Top photo: Santa Fe Mayor Alan Webber (r) and city Water Conservation Manager Christine Y. Chávez presented an award to Doug Pushard, with summit co-organizers Mike Collignon and Glenn Schiffbauer, along with a city memorial recognizing the 2023 Next Generation Water Summit. © Seth Roffman*

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- May 30 at 6 pm** - Vegetable Gardening & Drip Systems
- June 1 at 9 am** - On Farm Composting
- June 13 at 6 pm** - Fruit Orchards & Vineyards Management
- June 15 at 9 am** - Rotational Grazing  
w/ Mobile Fencing Options
- June 27 at 6 pm** - Rainwater Harvesting  
& Passive Water Catchment in the Landscape
- June 29 at 9 am** - Chicken Tractor  
& Poultry Flock Management



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# Spring into Action

BY CHRISTINE Y. CHÁVEZ

Under the guidance of Councilor Carol Romero-Wirth, the City of Santa Fe Water Conservation Committee is operating at full capacity with three new appointees: Brandon Vella, Navona Gallegos and TC Richmond. With those appointments comes subcommittee assignments in the Commercial, Outdoor and Education sectors. Last summer, we not only hit record production numbers but also record temperatures, with very little rain. The city's GPCD (gallons per capita per day) numbers increased, requiring the committee and staff to make the necessary adjustments for the city to continue to stay water-conservative.

*Last summer, we hit record temperatures, with very little rain.*

To address this specific issue, our outdoor subcommittee, led by Robert Wood from the Water Conservation Office, will focus on building the city's urban canopy through the implementation of new tree-planting incentives and partnerships with local nurseries. Building upon the success of

a pilot program conducted two years ago in three neighborhoods, we will utilize collected data to develop appropriate educational materials aimed at ensuring the survival of each newly planted tree. We are also collaborating with the Municipal Tree Board to circulate a tree guide, and we are introducing incentives for city customers who sign up for EyeOnWater. Additionally, partnerships with local experts such as the Master Gardeners and Xerces Society will aid in promoting pollinators and enhancing biodiversity. This group will work closely with the city's Water Resources Team, utilizing technical tools like dashboards and modeling platforms to monitor and track efforts in our pilot programs.

Ramon Coríz, also from the city's Water Conservation Office, leads an education program in partnership with the Santa Fe Watershed Association (SFWA). The SFWA not only leads several education programs for students (elementary through high school), but also facilitates many adult education programs including guided tours into the municipal watershed and Climate Masters training. In June we'll be sponsoring the Next Generation Water Summit, which is free for virtual attendance for all city and county residents and will be held at the Roundhouse. This event will be accompanied by demonstration tours across the city that showcase water-efficiency projects and strategies.

Finally, in our office, Patricio Pacheco will lead our commercial work, focusing on the WaterWise program. This multi-layered initiative involves Santa Fe Community College (SFCC), Santa Fe Green Chamber of Commerce and the city's restaurants, hotels, shopping centers, medical facilities and state and federal buildings. Over 120 businesses have participated, undergoing assessments to enhance water efficiency in their operations. By participating, each establishment receives a WaterWise badge, signaling to patrons their commitment to water conservation. SFCC plays a crucial role in training a workforce to conduct these assessments on behalf of the city. Check our website for WaterWise businesses

and sign up through the Santa Fe Green Chamber of Commerce.

To stay in the loop and to learn more about the city's water conservation program, visit [WWW.SAWEWATERSANTAFE.COM](http://WWW.SAWEWATERSANTAFE.COM).



*Christine Y. Chávez at the 2023 Next Generation Water Summit. Chávez is the City of Santa Fe's water conservation manager.*

# IRRIGATING WITH RECYCLED WATER

BY LAUREN FORBES

The single largest use of water in our homes is not in our homes—it's outside. New Mexicans use more water for irrigation in summer than all our toilet flushing, shower taking, dish washing and teeth brushing combined. Many people know they can use rainwater for sustainable irrigation. Irrigating with rainwater allows you to conserve municipal water and saves you money on your water bill (or well pump). Indeed, in Santa Fe it is a requirement to harvest rainwater instead of using potable water for irrigation! But did you know that you can also use recycled water to sustainably irrigate trees and shrubs in your landscape?

## What is recycled water?

Recycling greywater is a great way to reduce water waste and promote sustainability. For huge water conservation gains, use the same water more than once. Greywater reuse systems collect water from showers/bathtubs, bathroom sinks and clothes washers. Then, under current regulations, it can be reused outdoors for irrigation, or brought back inside for toilet flushing— replacing potable water usage. In a typical residential home, the greywater volume equates to about 50 percent of the indoor water use. Think about all that water being available for irrigation!

## I thought greywater was illegal.

Regulations in New Mexico are supportive of rainwater harvesting and greywater recycling. Although the state does not require a permit for most residential greywater irrigation, the City of Santa Fe requires a state permit, and Bernalillo County requires a variance. In the rest of New Mexico, these systems may not require a permit, but they must still comply with the applicable regulations.

## How do you recycle greywater?

**Bucket Method:** The simplest approach is to collect your water directly in buckets or tubs. Place a container under the shower or sink while the water is warming up. You can then use this collected water for plants in your landscape.

**Grey Water Recycling System:** For a more advanced solution, consider installing a greywater recycling system that gathers the greywater from your house. Gravity-fed systems carry water directly to your landscape. Filtered systems can treat greywater to flush toilets. Follow safety guidelines when recycling greywater. Don't store untreated greywater for more than 24 hours, as nutrients in it can break down and create bad odors. Avoid using greywater for potable purposes like drinking or cooking.

## What are acceptable sources of greywater?

Water from showers, laundry and bathroom sinks is relatively clean and suitable for reuse. Water from the kitchen sink and dishwasher are not currently allowed for reuse in New Mexico, but these regulations may be updated soon. **Avoid Black Water:** Black water (containing human waste or toxic chemicals) should

never be reused unless treated by an approved advanced treatment system.

## Are all plants suitable for greywater?

Not all plants are equally suitable for greywater irrigation, but many can thrive with recycled greywater. Fruit trees like citrus, apple and peach trees and flowering shrubs like lavender and salvia are great for greywater irrigation. New Mexico regulations say that you should avoid irrigating edible plants other than fruits and nuts with greywater.

## Do I need to use special detergent when irrigating with greywater?

Plant-friendly products are key when reusing your greywater to irrigate a landscape. All products should be biodegradable, non-toxic and low in salt. Avoid laundry detergents containing boron, chlorine bleach, hydrogen peroxide and optical brighteners, which are harmful to plants and the soil. Also skip fabric softeners; replace them with wool balls in the dryer. There are a range of plant-friendly, biodegradable liquid or strip detergents available in most stores or online. Check the blog at [www.CactusRainNM.com](http://www.CactusRainNM.com) for a list of suitable options.



Water not being captured as it flows off a roof

PROS OF GREYWATER SYSTEMS	CONS OF GREYWATER SYSTEMS
<ul style="list-style-type: none"><li>• Greywater is produced every day, all year long, and is a reliable source of irrigation.</li><li>• Simple systems recycle tens of thousands of gallons a year for a relatively low cost.</li><li>• Systems take up little space: often, all the pipes are buried and invisible.</li><li>• It's easy to irrigate fruit trees, shrubs and large annuals and perennials.</li><li>• It's an automatic system, saving time and ensuring plants get watered.</li><li>• It reduces wastewater going to a sewer or septic system.</li><li>• Greywater mulch basins improve soil bioactivity and decompaction.</li></ul>	<ul style="list-style-type: none"><li>• Accessing greywater may be challenging, depending on how your house and landscape are designed.</li><li>• Requires use of “plant-friendly” products in the house.</li><li>• Small plants, or plants spread out over a large area, are more difficult to irrigate with the simplest systems, though pumped and filtered systems will work.</li></ul>

## Greywater-ready new construction

If you are building a new home or thinking about remodeling your home, adding a greywater reuse system can be one of the best decisions you can make. Why? Because once you single-plumb your house, you most likely won't be able to install a whole-house greywater reuse system in the future. ■

*Lauren Forbes is the founder of Cactus Rain LLC, which offers services to help homes and businesses throughout New Mexico conserve water, harvest rainwater and reuse greywater. The company helps navigate the details and hurdles to start capturing the potential of on-site greywater. [WWW.CACTUSRAINNM.COM](http://WWW.CACTUSRAINNM.COM)*



# WATER TECHNOLOGIES AT SANTA FE COMMUNITY COLLEGE

ARTICLE AND PHOTOS BY **STEPHEN GÓMEZ, PH.D.**

New Mexico, like many other states, relies on a network of water treatment plants and distribution systems to provide safe drinking water. Wastewater treatment plants are essential for ensuring that wastewater is properly treated before being released into the environment. Water treatment and wastewater management are two distinct areas within the broader field of water technologies that each require specialized knowledge and skills. Unfortunately, since the pandemic, New Mexico has had a shortage of qualified water operators. The scarcity of skilled operators can lead to inadequate treatment, environmental pollution and potential health hazards. A large contributor to the shortage is the aging workforce in the water industry, where many experienced operators are retiring, creating a skills gap that is difficult to fill. The lack of skilled operators poses risks to public health and safety, as well as the sustainability of water infrastructure. The saying among operators is, “If a doctor screws up, a patient dies; if a water operator screws up, a city dies.”

Santa Fe Community College (SFCC) is working to address this shortage through its Water Technologies Program by offering an associate of applied science (AAS) degree in Water Technologies with embedded certificates in Water Operations Technology and in Water Conservation. The program, developed in collaboration with local utilities, industry experts and environmental professionals, is one of two programs in New Mexico that offers training in the processes involved in water treatment by developing the skills needed to ensure clean and sustainable water resources.

SFCC’s Water Technologies Program emphasizes hands-on learning where students have access to state-of-the-art training with advanced water and wastewater treatment technologies to gain experience in water-quality analysis, treatment methods and operational procedures. Internships with local utilities and industry play a big

*New Mexico has a shortage of qualified water operators.*

role in practical training to bridge the gap between classroom knowledge and real-world applications. Graduates of the program have obtained good-paying, secure jobs with municipal water treatment utilities, industrial facilities, environmental consulting firms, national laboratories and regulatory agencies. The program’s curriculum covers topics ranging from water chemistry and treatment processes to regulatory compliance and environmental stewardship. The U.S. Bureau of Labor Statistics estimates that nationally there are about 10,500 annual job openings in Water Operations, and as of May 2023 the median salary was \$54,890.

Beyond educating future water operators, SFCC’s program contributes to the community by raising awareness about water conservation and environmental sustainability. The Water Conservation certificate program is designed to provide



*SFCC Water Operations Technology and Water Microbiology students have visited the Albuquerque-Bernalillo County Water Authority’s Southside Water Reclamation Plant.*

students with knowledge and skills in water management and conservation as well as the procedures involved in performing water audits. Field trips to treatment facilities, watershed areas or sustainable landscaping projects are an integral part of the educational process. Practical exercises in water monitoring and conservation techniques are integrated into the coursework. Completion of the Water Conservation certificate prepares students for various careers in the field of water management and conservation. Graduates may find employment with government agencies, environmental organizations, water utilities, landscaping companies or consulting firms



*Water Operations Technology students outside the primary settling basins. Top to bottom: students leaning about nitrogen removal; Rebecca Niko and Eva Zafarano at the aerobic basins; students examining the outflow from the secondary clarifiers; students Stephania Arbelaez, Vicente García, and Miguel Torres*

*“If a doctor screws up, a patient dies; if a water operator screws up, a city dies.”*

knowledge, skills and passion needed to address water challenges. The curriculum is designed for people interested in entering the career field and for people already working in water and wastewater treatment seeking to advance. Our approach empowers students to develop skills in various areas of interest, making them more competitive in the job market. SFCC is shaping a brighter future for water supply

*Classes are offered in the late afternoon, early evening and online to accommodate working students.*

and management in Santa Fe and northern New Mexico. The Water Technologies program at SFCC prepares students to sit for the New Mexico Environment Department Utility Operators Certification Program exams, and those who complete the Water Conservation certificate will sit for the Qualified Water Efficient Landscaper (QWEL) exam. QWEL is an EPA WaterSense professional certification in irrigation system audits. The next classes in Water Operation Technology and in Water Conservation begin in the Fall 2024 semester. Classes are offered in the late afternoon, early evening and online to accommodate working students. The certificates can be completed in two semesters and the AAS degree in four. Interested individuals are encouraged to speak with an academic adviser at SFCC to enroll in the next cohort. ■

focusing on sustainability and water conservation.

The demand for skilled water treatment professionals in New Mexico is urgent, and SFCC's Water Treatment Program is equipping students with the

and management in Santa Fe and northern New Mexico.

The Water Technologies program at SFCC prepares students to sit for the New Mexico Environment Department Utility Operators Certification Program

*Stephen Gómez, Ph.D., is lead faculty in Water Technologies at SFCC.*



*Stephen Gómez poses a question to a panel at the Renewable Energy Industry Association of New Mexico's inaugural "Electrify New Mexico" conference in Albuquerque, April 2024.*

© Seth Roffman

## FUNDING ALLOCATED TO RESTORE AND PROTECT RIVERS AND WATERSHEDS

Funding from the Bipartisan Infrastructure Law for the Bureau of Reclamation's WaterSMART Program will support the study, design and construction of collaboratively developed ecosystem restoration projects that provide widespread regional benefits.

“The Interior Department continues to advance water solutions that are environmentally and economically sound for the American West,” said Interior Sec. Deb Haaland. “These projects are far-reaching in terms of climate resilience and ecosystem restoration benefits,” said Reclamation Commissioner Camille Calimlim Touton. “The work to restore and protect the habitat for fish and wildlife also helps improve water quality and mitigate impacts of drought and potential flood events.”

### Southside Wastewater Reclamation Plant Outfall Restoration Project

In New Mexico, \$3,014,481 has been allocated under this round of the Aquatic Ecosystem Restoration Program to reconnect 11 acres of floodplain habitat along 1,900 linear feet of the Río Grande, approximately five miles south of downtown Albuquerque. The Albuquerque Bernalillo County Water Utility Authority operates the Southside Wastewater Reclamation Plant, which treats approximately 55 million gallons of wastewater per day. The treated effluent is released to the Río Grande via an outfall channel on the east bank of the river. The land surrounding the outfall is part of the Río Grande Valley State Park and is jointly owned by Middle Río Grande Conservancy District and the Bureau of Reclamation.

The project will reconnect the Río Grande to its floodplain by excavating the banks, allowing water to stretch across the floodplain, restoring the river's natural hydraulic processes and enhancing and adding 2.2 acres of expanded floodplain habitat for the endangered silvery minnow.

## What would Santa Fe be Without History?

While virtually everyone acknowledges Santa Fe is a historic place, the stories and spaces that communicate our history to residents and visitors need constant upkeep and reinforcement.

### The Old Santa Fe Association works to preserve Santa Fe's cultural and architectural heritage.

Through history education, community service, and historic preservation advocacy, we promote and maintain Santa Fe's unique charm and distinction that combines culture, tradition, and environment—the priceless assets of our region.

Help us keep Santa Fe the “City Different.”  
Learn more at [oldsantafe.org](https://oldsantafe.org)



## JICARILLA APACHE NATION HOSTS HISTORIC SIGNING WITH UPPER DIVISION STATES IN COLORADO RIVER BASIN

BY **ROMAINE WOOD, VICE-CHAIR**  
**JICARILLA APACHE NATION WATER COMMISSION**

The Jicarilla Apache Nation hosted a signing ceremony of a landmark Memorandum of Understanding (MOU) between the Upper Division States of the Colorado River Basin and the Upper Basin Tribes. The event, which took place on April 22, symbolizes a pivotal moment in intergovernmental cooperation and stewardship of one of the nation's most vital water resources.

Vice President, Sonja Newton said, "Today we have made a strong commitment, as sovereigns, to meaningful communication and governmental collaboration on Colorado River issues in the Upper Basin for many years to come. This MOU is the culmination of the Tribal Nations' decades of work to change the status quo regarding tribal involvement in Colorado River management and decision-making. It is a major achievement in our continuing work to ensure that tribes are included in a manner that is consistent with their sovereign status."

The MOU signifies a significant step forward in fostering collaboration and understanding between the Upper Basin Tribes (Jicarilla Apache Nation, Navajo Nation, Ute Mountain Ute Tribe, Southern Ute Indian Tribe, Ute Indian Tribe and the Paiute Indian Tribe of Utah) and the Upper Division States (Colorado, New Mexico, Utah and Wyoming) acting through the Upper Colorado River Commission (UCRC). After nearly two years of intensive dialogue and coordination, the agreement underscores a collective commitment to mutual respect, shared responsibility and sustainable management of the Colorado River.

"UCRC Vice-Chair and Colorado Commissioner Becky Mitchell said, "After more than 100 years since the Compact was signed—it is time to more fully engage and collaborate with our tribal



partners. We also acknowledge there is more work to be done: it is time that we support the Upper Basin Tribal Nations in realizing benefits from their settled but undeveloped water supplies."

At the core of this agreement is a commitment to the timely sharing of information regarding Colorado River developments, identification of issues of mutual concern and engagement in cooperative measures aimed at achieving common goals. Through transparent communication and collaborative efforts, the signatories seek to address the complex challenges facing the Colorado River Basin while fostering resilience and adaptability in the face of evolving environmental, social and economic conditions.

The momentous occasion also represents a reaffirmation of the enduring bond between the sovereign nations of the Colorado River Basin. As stewards of the land and water, the Jicarilla Apache Nation remains steadfast in its commitment to preserving the integrity of the Colorado River for future generations and ensuring its vitality and abundance for all who depend on it.

## GILA RIVER INDIAN COMMUNITY SOLAR CANAL PROJECT

The Gila River Indian Community (GRIC) in Arizona is taking an innovative step to address drought in the Southwest. In partnership with the U.S. Army Corps of Engineers, the tribe is constructing the Pima-Maricopa Irrigation Project Renewable Energy Pilot, the country's first solar-over-canal project. The GRIC has more than 150 miles of canals. The canals' main purpose is to provide water and make it possible to grow food.

The canals could all be covered with solar panels, which reduce evaporation and also minimize the amount of water needed for power generation. In the first phase of the project, to be completed in 2025, panels will be installed over 1,000 feet of GRIC's Interstate 10 Level Top canal. The

one megawatt it generates will power tribal irrigation facilities. Workers are also installing solar panels on two other canals.

"This new technology fits and supports our culture and tradition as we look forward to being sustainable in a very real way," Gila River Indian Community Gov. Stephen Roe Lewis said. "It furthers our role as stewards of water." Lewis said his tribe sees the project as part of a Blue-Green Tribal Agricultural Economy, in which blue represents conserving water and green symbolizes renewable energy.

Floating solar panels on the surface of artificial bodies of water like reservoirs is taking off across Europe. One study found that evaporation was reduced by 42 percent and that the panels were 10–15 percent more efficient because of water cooling.

*Left: Bureau of Reclamation commissioners and Gila River Indian Community Gov. Stephen Roe Lewis visited construction sites of the Reclaimed Water Pipeline and the Solar Panel Over Canals projects. Tribal Nations are leading in implementing infrastructure solutions to support the health of the Colorado River.*



# Access, Innovation and Stewardship

## SFCC's School of Trades, Advanced Technologies and Sustainability

BY **BARRY HUBBARD, PH.D.**

Santa Fe Community College (SFCC) stands out as a leader of innovation and progress in the realm of vocational education, particularly through its School of Trades, Advanced Technologies and Sustainability (TATS). The college is committed to preparing students with the skills necessary to thrive in a rapidly evolving job market while fostering a deep-rooted ethos of environmental responsibility through community engagement. Here, students can choose from a diverse array of programs designed to meet the demands of various industries, ranging from construction and facilities maintenance to electric vehicle (EV) maintenance/repair and sustainable agriculture.

The Trades and Advanced Technology Center and Automotive Technology Center are state-of-the-art facilities with well-equipped workshops, laboratories and simulation spaces. Students have access to the tools and resources necessary to gain hands-on experience and develop proficiency in their chosen fields. Whether it's mastering the intricacies of welding, learning the principles of sustainable construction or delving into the latest advancements in workplace safety, students are empowered to explore and innovate under the guidance of experienced instructors. Through specialized programs and coursework, they are not only trained in traditional trades but are also educated on the principles of sustainable practices and renewable technologies. From incorporating green building techniques to harnessing solar energy, TATS instills in its students a deep appreciation for environmental stewardship while preparing them for careers that prioritize sustainability.

*SFCC is demonstrating how community colleges can play a pivotal role in advancing sustainable technologies and empowering environmental stewards.*

insights and hands-on experiences that bridge the gap between classroom learning and practical application. Whether it's through internships, apprenticeships, or collaborative, work-based learning projects, TATS ensures that graduates are well prepared to meet the evolving needs of the workforce.

What is new in TATS? Starting with the skilled trades area, our Building Science and Construction Technologies Programs have seen several updates and additions. The Adobe Construction program, which focuses on traditional New Mexican construction principles as well as contemporary green building practices using sustainable materials, has added a certificate in Adobe Preservation. In addition to learning the basics of adobe construction techniques, students can gain understanding into how to restore or preserve earthen structures by completing coursework in preservation practices.

The newly redesigned Facilities Technology certificate is a cross-craft centered program exposing students to workplace safety practices, electrical basics, HVAC and plumbing. Upon completion, students are prepared to install, maintain and repair control mechanical and electrical systems in commercial, medical, residential and industrial buildings. Additionally, the Construction Technologies certificate has been streamlined to

TATS prides itself on offering an industry-relevant curriculum that is continually updated to reflect the latest advancements and trends. Through partnerships with local businesses and industry leaders, students benefit from real-world



*The Automotive Technology Center at SFCC.*

provide hands-on instruction in the areas of construction safety, methods, materials, blueprint reading and trades math skills. Both certificates can be completed in less than a year and prepare students for entry-level positions.

The Certificate in Automation and Controls provides students with a comprehensive understanding of principles, technologies and practices used in the design, installation and maintenance of automation and control systems. Through a combination of theoretical coursework and hands-on lab experience, students develop the skills needed to succeed in a variety of industries, including manufacturing, transportation and energy.



*SFCC's 11kW tracking solar array provides power to the 12,000-sq.-ft. off-grid controlled-environment greenhouse.*

The Automotive Technology program is launching a new certificate in EV maintenance and repair, which is designed to prepare students for the emerging field of services and diagnosis of vehicles powered by plug-in-electric/hybrid-powertrain fuel-cell generation. Students will learn and practice on a Swift EV trainer, equipment providing hands-on understanding of how EVs are constructed and function. This certificate will be a significant addition to the existing robust offerings that prepare students for entry-level work as an automotive technician.

The Welding Technologies Program provides the knowledge required for entry into the welding industry and related occupations. The curriculum covers shielded metal arc welding, gas metal arc welding, tungsten gas arc welding, oxy acetylene welding and cutting, and allied processes. Theory and practice are combined in this program. Students will understand the importance of the quality of welds, welding codes and welding safety. Future offerings will include a welding art class.

On the sustainability side of the school, there are new and revised programs, as well. A new associate of applied science degree in Water Technologies will help train the next generation of water and wastewater operators. This degree provides students with an in-depth understanding of issues regarding sustainability, renewable energy, water treatment and water conservation. Through their chosen concentration, students will acquire skills needed to seek entry-level positions in a wide range of energy- and water-related businesses, public agencies and/or to consider starting their own business. Shorter certificates in water conservation and water treatment are also offered.

The certificate in Algae Cultivation covers the basic science and technology. This provides the skill-set necessary to work in algae cultivation or create a business. SFCC's Algae Cultivation Program represents a forward-thinking approach to addressing environmental issues, while fostering education and research. Students explore the potential of algae in biofuels, food supplements, wastewater treatment and environmental remediation. Algae sequester carbon dioxide and produce oxygen, making them valuable in efforts to mitigate climate change. Algae can also purify wastewater by removing nutrients like nitrogen and phosphorus, which are otherwise pollutants. By harnessing the potential of algae, SFCC is demonstrating how community colleges can play a pivotal role in advancing sustainable technologies and empowering the next generation of environmental stewards.



*The Trades and Advanced Technology Center at SFCC*

funding from the National Science Foundation's Advanced Technological Education program to support providing rural high school students with remote dual-credit instruction in CEA.

SFCC's School of Trades, Advanced Technologies and Sustainability stands as a testament to the transformative power of education and how it helps to shape the future of our communities. With its focus on innovation, sustainability and community engagement, SFCC equips students with the tools and job-ready skills needed to succeed in a rapidly changing world. We invite you to explore all we have to offer as we all work together to inspire the next generation of tradespeople, technologists and environmental stewards to build a brighter, more sustainable future for all. ■



*Year-round food production systems in the SFCC CEA greenhouse*

The Controlled Environment Agriculture (CEA) Program seeks to revitalize agricultural traditions in order to build local food security in a way that is ecologically, economically and culturally viable, socially just, sustainable and regenerative for current and future generations. Students receive hands-on and classroom training in greenhouse management, sustainable agriculture, and food handling and safety. Through various program concentrations, completion of this degree prepares students for careers in CEA with a focus on hydroponic and aquaponic production techniques. The program recently received

*Barry Hubbard, Ph.D., is SFCC's dean of School of Trades, Advanced Technologies & Sustainability, and the schools of Business, Professional Studies and Education.*



## GROWING FOOD WITHOUT SOIL

### CONTROLLED ENVIRONMENT AGRICULTURE

BY CHARLIE SHULTZ

For the past decade, Santa Fe Community College (SFCC) has trained students in Controlled Environment Agriculture (CEA). Originally founded as a program that offered degrees in Greenhouse Management, the name changed in 2016 in response to the demand from the community for CEA, including shipping-container farms and crop production completely inside buildings. In all of these instances a controlled environment is required to optimize production. Also, since its inception, the focus of the program has been on water-conservative food production systems like aquaponics and hydroponics. Algae cultivation requires controlled environments as well and falls under the SFCC's CEA program.

A typical CEA class includes a diverse mix of students with various experiences. Some come for a degree and some come for personal enrichment and knowledge. Our degrees include certificates in CEA and Algae Cultivation and an AAS degree in CEA. Certificate plans are designed to be completed in two semesters as a full-time student, while AAS degree plans commonly take two years to complete. All CEA classes are in-person, and students get most of their skills through hands-on training in a solar-powered, off-grid 12,000-sq.-ft. greenhouse using semi-commercial-scale production systems. New students typically start in the fall semester with the introductory CEA and algae classes, and during spring they can take the advanced courses. They may take classes for credit or audit, depending upon their goals.

CEA electives include courses that provide hands-on building skills including HVAC and plumbing, computer design, biofuel production, and energy and facility management. Students are encouraged to "cross-train" by taking courses in other practical areas related to CEA. The program has a robust internship program offering other opportunities to earn elective credits. On-campus internships include production training or independent research for advanced students. For off-campus internships, students are placed with one of several related industry partners who mentor students and often offer employment after graduation. With many electives to choose from, new students can begin their CEA degree pathway at any time during the year, but the core CEA courses are in a cohort that begins in the fall.

Students come to the program with different goals and upon degree completion pursue various

commendable ventures. Many CEA students arrive with higher college degrees and return to SFCC for the hands-on opportunities. Many complete their degree plans and then transfer to colleges or universities. A few have created new businesses in the region. Desert Verde Farm, for example, was spawned from the program and has since hired or mentored many SFCC-CEA students. The innovative indoor, vertical aquaponic farm located in a business district of Santa Fe produces 4,000 units of produce each week, year-round. Since SFCC created the Greenhouse/CEA program in 2013, the program has graduated over 260 students skilled in CEA technology, and since 2016, 195 high school students earned college credit through the program.

#### Recent Grant Awards to SFCC

The federal government has commented on CEA and has identified domestic year-round food production as a matter of National Security. Recent grant awards to SFCC reflect this priority. The National Science Foundation (NSA) has earmarked money for Advanced Technological Education and recently awarded SFCC a three-year grant that will provide college-credit CEA courses to high school students across the region. A National Institute of Food and Agriculture (NIFA) grant award partners SFCC-CEA with Navajo Technical University (NTU) to create hydroponic greenhouses on campus and at the local chapter house. A previous NTU NIFA grant revealed high levels of soil contaminated with uranium. As a result, hydroponics will provide a water-conservative method of producing safe food locally without exposure to contaminated soils. Another NIFA-funded grant involves the University of Arizona (UA), New Mexico State University (NMSU) and SFCC. Scholarships are available for students interested in fisheries careers. Students can begin these careers with a CEA degree at SFCC, then move on to NMSU or UA to complete higher degrees.

The CEA program always puts emphasis on the college's mission statement, "Empower Students, Strengthen Community." From industry partnerships to brown-bag community lunchtime speaker events, outreach to community is essential for the success of the program. Crash courses for those that cannot take a semester-long course are offered through the SFCC Continuing Education. The three-hour courses give community members a dose of water-based farming or greenhouse management as an affordable option.

Community resilience requires year-round sourcing of safe food and CEA can provide that, as demonstrated on the SFCC campus. The large SFCC-CEA greenhouse at times provides space for industry partners. Relationships that develop through the SFCC Innovation Center may use greenhouse space for industry research. The public-private partnerships include opportunities for student employment or internships and businesses located on campus provide educational opportunities. The CEA program regularly hosts community outreach events including movie nights, on-campus speaker events, greenhouse tours, workdays at local farms, field trips and more.

*The CEA program always puts emphasis on the college's mission statement, "Empower Students, Strengthen Community."*

#### Santa Fe Aquaponics Anonymous

A weekly social gathering, open to all, happens in Santa Fe every Wednesday evening with water-minded folks getting together at a

*Students are encouraged to "cross-train" by taking courses in other practical areas related to CEA.*

local establishment for friendship and fellowship. The group recently celebrated its 100<sup>th</sup> Wednesday night gathering. Details can be found on Facebook as Santa Fe Aquaponics Anonymous or by emailing the academic director of the CEA program for details. The program keeps an active facebook page at [www.facebook.com/sfccgreenhouse](http://www.facebook.com/sfccgreenhouse) and tries to keep up on TikTok and Instagram as @aquaponicscharlie .

The SFCC-CEA program works closely with NNMU's Cooperative Extension program. Annually, a collaborative online aquaponic training is provided for free, and is open to all. Attendees include producers, teachers, students and anyone who just wants to know more. This year online classes will be held Thursday nights during the month of June. Two publications have come out through this collaboration and are free to source online:

*Hydroponics: Water-saving Farming for New Mexico's Arid Environment* [HTTPS://PUBS.NMSU.EDU/ H/H180/INDEX.HTML](https://pubs.nmsu.edu/h/h180/index.html)

*Decoupled Aquaponics: A Comparison to Single-loop Aquaponics* [HTTPS://PUBS.NMSU.EDU/ H/H173/INDEX.HTML](https://pubs.nmsu.edu/h/h173/index.html) ■

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*Richard "Charlie" Shultz is academic director of Controlled Environment Agriculture at SFCC. For information about the program or the opportunities mentioned above, contact him at 505-428-1205 or [RICHARD.SHULTZ@SFCC.EDU](mailto:RICHARD.SHULTZ@SFCC.EDU) .*

## HYDROPONICS

Water is Life! All plants need water to survive and thrive. To conserve water while producing food year-round, the SFCC-CEA program uses recycling hydroponic systems almost exclusively. Hydroponics is a Greek word translating to water and labor. The water provides plants with hydrogen and nutrition without using soil. Like soil, fertility must be managed. The water-saving benefit of hydroponic production makes this form of agriculture ideal for the northern New Mexico region. Hydroponic systems may be classified as *open* (drain to waste) or *closed* (recirculating). They may also be classified as *active* (energy) or *passive* (no energy). Popular hydroponic methods are shown in the photos with descriptions.



*A variety of short-term lettuce crops are ideal for Nutrient Film Technique (NFT) hydroponics.*  
© Seth Roffman

**SFCC'S CONTROLLED ENVIRONMENT AGRICULTURE**



*Students who confessed to never having planted a seed before are now seeding, transplanting and harvesting.*



*Ty McCormick, faculty, SFCC CEA; Cy Brower, greenhouse technician and Charlie Shultz, CEA academic director training advanced CEA students, using a variety of food production systems. Hydroponic and aquaponic systems shown here include Nutrient Film Technique (NFT), Deep Water Culture (DWC), Ebb and Flow, and Dutch Buckets. Photos © Seth Roffman and courtesy SFCC*



# CEA STUDENTS HELP COMMUNITY WHILE LEARNING SUSTAINABLE FOOD PRODUCTION

BY TY MCCORMICK



*Minute pirate bug (Orius insidiosus) feeding on white fly nymphs (USDA/ARS)*

The Controlled Environment Agriculture (CEA) program at Santa Fe Community College is a unique opportunity for students to learn about hydroponic and aquaponic crop production and algae cultivation. The program brings together students who love working with plants. They range in age from high school graduates to people who are retired and want to learn how to grow their own food in a water-saving capacity. It is inspiring to see how growing food brings people together from diverse backgrounds.

The CEA group began this year's fall class by helping plant a pollinator garden in the center of the campus. Many people see CEA as taking plants and growing them



*Arianna Montoya and John Michel assembling the greenhouse frame at Synergia Ranch*



*Dakota Corbut, Logan Guerra and John Michel standing up the first hoop at Synergia Ranch*

in a lab setting, but there is a lot that goes on inside and outside the greenhouse that helps to foster a relationship among plants, animals, fungi and bacteria. A healthy, diverse plant and animal community outside the greenhouse can promote a more stable greenhouse. Because of the balance of a diverse community, it becomes more resilient and less likely to harbor large populations of pests that can come into the greenhouse and damage plants.

Bumblebees are brought into some hydroponic greenhouses to help pollinate tomato crops. The students also act as bumblebees, pollinating each tomato flower with an electric toothbrush. Many growers opt to use natural predators of insect pests rather than harsh pesticides as “biological controls.” After discovering a small population of thrips on tomato and cucumber crops this year, students released minute pirate bugs, a natural predator, onto the plants. It has made a big difference. The tomato plants are dripping with tomatoes, and students have harvested hundreds of perfect-looking cucumbers.

The CEA group this year took their learning into the community by working with schools such as Monte del Sol Charter School to help reconstruct Nutrient Film Technique (NFT) and Dutch bucket hydroponic systems in their geodome. At Atalaya Elementary School, they helped celebrate Earth Day by building mini Kratky grow systems so students can grow their own lettuce at home, no matter where they live. The SFCC class also spent an afternoon at Synergia Ranch in a 40-year-old drained pool (the best flat surface on the ranch), building greenhouse trusses, which they set up in the spot designated for the greenhouse. Many of the older students paired up with younger students to show them how to use power tools safely. They had the greenhouse skeleton assembled in an afternoon and then everyone celebrated with a potluck.

Students learn by doing and by helping the community. Some who confessed to never having planted a seed before are now



*Analicia Guitron and Coben Branch with nutrients to add to one of the hydroponic systems in the greenhouse*



*Growing food brings people together from diverse backgrounds.*

seeding, transplanting and harvesting 72 heads of lettuce each week. Altogether, the class grows 288 heads each week. The lettuce is taken home, shared with friends, neighbors and members of the SFCC community. Nate Downey, a former student of the program, collaborates with “Communities in Schools” to bring fresh lettuce to hundreds of families throughout Santa Fe.

Successful completion of the program prepares students to become greenhouse professionals with the knowledge and skills to work in hydroponic and aquaponic greenhouses for home/farm and commercial-scale operations. ■

*Ty McCormick is assistant professor of Controlled Environment Agriculture at Santa Fe Community College.*



*L-R: Mykayla Trujillo Hanavalt, Sean Melugin, Ariana Montoya, Michael Kotowski, Eva Zafarano, Lance Miller, Analicia Guitron, Hana Dean, Jessica Abbott, Misha Cantu, Kyle Davidson, Kirill Oleynikova, Dakota Corbut, Joel Hardin, Ash Gray, Coben Branch and John Michel posing in front of the assembled NFT and Dutch Bucket systems they completed at Monte del Sol Charter School*

# NEXT GENERATION WATER SUMMIT

SATURDAY, JUNE 22

## Community Tours

Join us for a series of community tours at various locations to learn about water conservation, rain gardens, grey water systems, and more!



## SOLUTIONS IN A CHANGING WORLD

**JUNE 20 - 21 | SANTA FE, NM**

**Community Tours on June 22**

[NextGenerationWaterSummit.com](http://NextGenerationWaterSummit.com)



**Virtual attendance is FREE for Santa Fe city and county community members but you still need to register.**

# THE ALGAE TECHNOLOGY EDUCATIONAL CONSORTIUM AT SANTA FE COMMUNITY COLLEGE

BY IRA "IKE" LEVINE, PH.D.

The Algae Foundation, a nonprofit algae-education organization, has collaborated with the Department of Energy (DOE) through the National Renewable Energy Laboratory (NREL) to develop a college curriculum and certificate programs in algal cultivation technologies (algaculture), algal-based biotechnology, online and aquaculture extension short-courses. The Algae Foundation has formed the Algae Technology Educational Consortium (ATEC), a partnership among academic institutions, national research laboratories and industry leaders to support the coordination and implementation of algae-based workforce development, education and training programs. ATEC's charge is to develop educational programs to strengthen industry workforce capabilities by focusing on the skills needed to support commercialization.

The ATEC team led by the faculty of Santa Fe Community College (SFCC) has designed a curriculum for a college degree certificate program in the basic science and technology of algae cultivation. This certificate provides students with the skills required to work in the algaculture industry or create their own algaculture business. Students learn the controlled environment requirements for successful cultivation of various algae species. The program emphasizes training in algal cultivation technologies, including algaculture extension training. Knowledge acquired prepares students for jobs as greenhouse/agricultural workers, plant technicians, plant managers, laboratory technicians, sales managers, public relations and outreach, process coordinators, extension service and/or business owners/managers.



*The first cohort of graduates earning the SFCC Algae Certificate in 2018. L-R: Abey Torres, Dr. Stephen Gómez, Jeremiah Star, the late Luke Spangenburg, Jonathan Smilling*

SFCC is strengthening ATEC partnerships and regional collaborations with national labs, universities and industry companies to send students from the Algae Cultivation program to engage in workforce and research opportunities. SFCC ATEC graduates have worked and are working on continuing studies with algae micro-farms, startups, national labs and universities.

All the graduates from the first cohort are either employed by industry or are attending a 4-year university to continue their education. SFCC also engages its wider community with ATEC's K-12 Summer Algae Science Institute with free, online and in-person STEM teacher training workshops and the Algae Academy, a free, hands-on, algae-based STEM kit and curriculum that uses algae as the vehicle for exploration while helping students hone necessary STEM skills. Since 2016, the Algae Academy has served over 1,200 teachers and 94,000 students in all 50 states. Additionally, The U.S. Department of Energy's Bioenergy Technologies Office (BETO), in partnership with the Algae Foundation and the National Renewable Energy Laboratory (NREL), launched the AlgaePrize to encourage students to pursue innovative ideas for the development, design and invention of technologies to incentivize and reenergize American innovation in the energy marketplace. Two competitions have been held, and SFCC has had more finalist teams (four) than any other institution in the nation.

The Algae Cultivation Certificate is offered through the SFCC Controlled Environment Agriculture (CEA) program. The Introduction to Algae Cultivation course is a required course for the certificate and AAS degree in CEA. These students are expected to be able to perform basic lab skills related to agriculture and aquaculture. The introductory course provides these skills and an overview of microalgae and microalgae cultivation, cell biology and the emerging industry. The Advanced Algae Cultivation and the Algae Harvesting courses are built on the introductory course and, with the Pumps and Motors course, focus on training and internships that develop skills needed to run an algae cultivation facility. The faculty and staff of the SFCC Algae Cultivation Program have recognized the need to tailor the curriculum to the unique profile of students in the program. Most of the students at SFCC are non-traditional, and many are re-entering the higher education system. The hands-on experience through courses and internships/capstone projects is phenomenal for the students. The opportunity to put their learning to work at SFCC's facilities, where algae work can be both stand-alone or part of something larger (i.e., aquaponics), is unlike any other existing program. ■

*Ira "Ike" Levine, Ph.D., is chief executive officer of the Algae Foundation.*



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# THE INNOVATION CENTER AT SANTA FE COMMUNITY COLLEGE

*Public/Private Partnerships Improving the Economy of Northern New Mexico*

BY **ONDINE FRAUENGLASS**

Community colleges are positioned to engage in business creation and incubation. Public-private partnerships with the community college brings local industry to campus as they grow their business. Tech companies can validate technology with results that benefit students as well as business. The cross-disciplinary approach to workforce training in novel technologies is an effective approach for creating an entrepreneurial workforce to expand industry while improving the economic outlook for the community. When engaging in this role, the college can offer advanced training opportunities and important job skills practice to students before they enter the workforce, giving them a competitive edge.



*Solar cPV prototype tracker from Integrated Solar Technologies operates off-grid or with the campus educational microgrid, supporting systems in the 12,000-sq-ft. CEA greenhouse.*

*Creating an entrepreneurial workforce to expand industry while improving the economic outlook for the community*

The SFCC Innovation Center hosts local bioscience and other technology startup companies on campus, providing internships or jobs to SFCC students. Innovative research includes crop protection methodologies, mRNA vaccine development, concentrating solar photovoltaic technology and advanced

greenhouse technologies. The Innovation Center has hosted more than 20 businesses and currently is host to five local technology companies that require Biosafety Level 2 (BSL-2) lab space or controlled environments. Current partners include:



*CAE students re-skinning one of the campus micro-farm greenhouses*

- Apogee Spirulina—a micro-farm growing artisanal spirulina for health and nutrition
- Excedre—innovative wind and water turbine design
- ISTM—Concentrated solar photovoltaic design for compact units that deliver electricity, thermal energy and broadband connectivity reliably and cost-effectively for rural and off-grid areas of the world
- Pebble Labs—creating safe and effective biological solutions to sustainably protect yields and quality in food production. Harnessing naturally occurring microbes from crops to deliver the power of RNA for solutions that target formidable pests and diseases
- Large established companies also offer student opportunities when working through the SFCC Innovation Center. WSP USA is undertaking applied greenhouse research at SFCC to assist in reclamation projects for mining areas in New Mexico.

The Innovation Center also joins in projects with the National Labs and the U.S. Department of Energy (DOE) supporting research and innovation in clean energy and connecting students to internships and national competitions like the AlgaePrize. This year the Innovation Center will support an AlgaePrize student team on a project to cultivate and test algae strains that boost biogas production for small-farm anaerobic digestion units. SFCC has placed four student teams as finalists of the last two national DOE AlgaePrize Competitions. An additional student team of entrepreneurs is working with a novel algae cultivation system that assists in water treatment processes. The Innovation Center will provide campus space in conjunction with the SFCC Business program and a Sandia Labs initiative to support local business development. By investing in the creativity and ingenuity of its students, faculty and local technology entrepreneurs, SFCC is laying the groundwork for a future defined by innovation, collaboration and transformative ideas. ■



*Ondine Frauenglass is director of SFCC's Innovation Center.*

[WWW.SFCC.EDU/INNOVATION-CENTER/](http://WWW.SFCC.EDU/INNOVATION-CENTER/)

## INTEGRATED SOLAR TECHNOLOGY AND MANUFACTURING IN NEW MEXICO

BY GABINO GUERENGOMBA

I grew up in Bangui, Central African Republic, when the electricity came on for just four hours every day because the national energy utility had to be creative, since the electricity supply was never enough to power up the entire city at once. As students in high school, we had to resort to going to a part of town where electricity was available or to the nearest streetlight. This indeed affected my resolve and determination to solve this issue so the future generations, especially Central Africans, can have access to reliable and cost-effective electricity.

So, we founded Integrated Solar Technologies and Manufacturing (ISTM) to find an off-the-grid way to deliver reliable electricity and broadband at a price point that would suit the African consumer market. ISTM is the tip of the arrow that will help solve the problems of climate change: It is a matter of time before micro-grids, particularly in remote locations of Africa, Asia and Latin America, will develop distributed electricity to power homes, mobile phones, schools, hospitals, manufacturing and agribusiness. ISTM's mission is to solve the electricity shortage problem in rural and last-mile regions around the world, along with the lack of broadband availability.

*Hopefully, our partnership with SFCC will change the continent.*

I met with the late Luke Spangenburg, who convinced me that Santa Fe and New Mexico would be the optimal location to expand the business. Santa Fe Community College and its Innovation Center have been absolutely transformative in this project. We relocated to New Mexico in 2019 and unfortunately, with Luke's passing and the COVID pandemic, the project has been delayed. However, with the pandemic, proximity-based food production has become even more important.

Controlled agriculture greenhouses and smart-grid design are an end-to-end system and part of the future of our living. The partnership with SFCC is even more important than before. We have been able to place a prototype system on SFCC's campus in proximity to the college's solar-powered, off-grid, controlled-environment greenhouse.

We are especially grateful to Ondine Frauenglass, the Innovation center director, Dr. Stephen Gómez, and Frank Currie for curriculum development and for their assistance and advice in securing funding from the U.S. Agency for International Development (USAID) to establish an ISTM Women and Youth Agrovoltatics Farm Incubator (WYAI) in Cotonou, Benin. This farm will serve as a technology demonstration project, training/education center and an agricultural extension resource for local farmers that will provide rural communities with pollution-free light and broadband communication.



After on-ground pilot validation, these programs will be available for extension to the rural western U.S. and to the Central African Republic, Zambia, Mozambique and Kenya. Hopefully, our partnership with SFCC will change the continent. ■

*Gabino Guerengomba is the founder and CEO of Integrated Solar Technologies and Manufacturing.*

## ALGAE CULTIVATION STUDENT CLAIRE WHITE



My name is Claire White. I am from San Antonio, Texas, but am of Hawaiian ancestry. I recently graduated from the College of Charleston in South Carolina, earning a Bachelor of Science in Marine Biology with minors in Environmental and Sustainability Studies and Spanish. I was an active member of the Honors College. I first heard of the Algae Cultivation Certificate at Santa Fe Community College at the Psychological Society of America meeting in July 2023. I was unsure of what I wanted to do next, and this program seemed like a perfect steppingstone from my undergraduate degree to either higher education or the professional world.

At SFCC, I am learning a lot more about the algal industry and the environmental impact of algae culture at a more practical level. I am also a part of an AlgaePrize Team, Just AD Algae, that has been named one of the 15 finalists in the nationwide competition. I have learned more about cultivating algae in my two semesters at SFCC than I learned during my four years at college. Pursuing the Algae Cultivation Certificate has helped me greatly in finding the next steps in my career. While at SFCC, I applied for and was accepted into a Master's degree program at the University of Texas at Austin this fall. I am hoping to continue to do research in macroalgae for my thesis work. I am very grateful for my time at SFCC and everything that the program has taught me.

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Mesa Prieta Petroglyph Project invites you to join in our anniversary events celebrating 25 years as a nonprofit protecting a place. Over the last 25 years our mission has focused on the protection and preservation of the cultural landscape of the Mesa Prieta region of the northern Rio Grande Valley.

We welcome summer youth alumni, recorders, scholars, tribal and community members who have been connected to the project over the last 25 years to share in a two-day symposium and other scheduled programming throughout the year.

Symposium information will be forthcoming on our website:  
<https://www.mesaprietapetroglyphs.org/>

Photo: Norman Doggett

## SFCC STUDENT BIOFUELS TEAM IS FINALIST IN ALGAE PRIZE COMPETITION

*Research will test using algae mix to increase biogas production that could bring renewable energy to underserved and off-grid populations.*

Santa Fe Community College's student biofuels team, Just AD Algae, is one of 15 finalists in the national AlgaePrize 2023-2025 Competition. Selected from 49 entries by a panel of industry experts, the SFCC team will spend about 15 months working on its research project. Each team receives \$10,000 to fund its project. In the spring of 2025, the finalists will participate in the AlgaePrize Competition Weekend Event at the National Renewable Energy Laboratory (NREL) in Golden, Colorado.

AlgaePrize is a U.S. Department of Energy (DOE) BETO national competition, in partnership with the Algae Foundation and NREL, which encourages students to pursue innovative ideas for the development, design and invention of technologies within the commercial algal value chain. The competition is designed to incentivize and reenergize American innovation in the energy marketplace. SFCC President Becky Rowley, Ph.D., said, "We're excited that SFCC has another AlgaePrize team finalist. SFCC's work with the Algae Foundation and NREL has given students a path to valuable internships and employment."

The team's advisor, Ondine Frauenglass, SFCC Innovation Center director, said the team proposes to increase the biogas output of a small-scale anaerobic digester by using algae mixed with waste products such as used cooking oil. SFCC's biofuels program provides hands-on instruction in alternative fuels. The college has a biodigester on campus that converts

kitchen waste into clean biogas that can be used for cooking and heating and a liquid biofertilizer. The SFCC student team, Just AD Algae, has the potential to benefit off-grid and underserved populations globally and in New Mexico.

Frauenglass said, "The team researched ways to increase biogas yield using the kind of algae we cultivate on campus. They will scale up previous experimental setups they have read about to a size that would mimic household or small business use for this kind of renewable energy production. The team will test it out and then create a technical manual to be used off-grid or in emergency situations for cooking and heating. It can either supplement your utilities or replace them depending on how big of an operation you run."

The SFCC internship team, formed in fall 2023, will continue their research until April 2025. Frauenglass said, "I'd like to extend special thanks to the SFCC Controlled Environment Agriculture and Algae Cultivation programs. We are particularly grateful for guidance from Dr. Stephen Gómez, Charlie Shultz and Gabe Smith for their technical support and expertise."

All the team members are also enrolled in SFCC's Algae Cultivation program that encourages graduates to pursue advanced degrees in biotech and sustainability, as well as internships with Los Alamos National Laboratory (LANL) and NREL. The program offers students the opportunity to earn a certificate or A.A.S. degrees in Controlled Environment Agriculture or Sustainable Technologies. The SFCC Innovation Center provides opportunities to work and study with biotech companies on campus.

For more information about SFCC's AlgaePrize finalist team, contact Frauenglass at [ONDINE.FRAUENGLASS@SFCC.EDU](mailto:ONDINE.FRAUENGLASS@SFCC.EDU) or call 505-428-1628.



*SFCC AlgaePrize finalist team: From left, Alyssa Frame, Claire White, Jessica Abbott, Eva Zafarano, Mitchel Lance Miller and John Michel.*



## THE ORIGIN STORY OF ALGAEPLANET

BY DAVID SCHWARTZ

The first sustainability program at Santa Fe Community College, offered in 2009 as the new Trades and Technologies building was coming together, was a pioneering effort that drew national attention in anticipation of a new world of algae biofuels. New Mexico was playing a major role; the state was flooded with government financing for research and production of a potential petroleum replacement, as gas prices were rising and green energy was capturing the imagination of the eco-conscious. SFCC's position as the training center for a new category of green-energy workers attracted students young and old for a career adventure like no other.

I was one of the fortunate few who found a seat in the program, run by the maverick science enthusiast Charles Bensinger. Charles had been a biofuel proponent, turning cooking oil into biodiesel and supplying it to fueling stations in the area. Evolving from cooking oil to microalgae-based fuel was a great source of inspiration for a classroom committed to building a better world, and Charles led the parade with great enthusiasm.

### *The wonderful world of algae*

in the emerging field. One thing that had become clear in the early days of the class was that there was a lack of textbooks and general curricula on the topic. Rather than a typical lesson plan, Charles brought forth reference materials and news clippings on the subject to form the educational core of the class, along with field trips and lab experiments.

The news clippings were a significant part of the program in that much was happening in the field, and traditional texts would quickly become out of date with the rapid advancements represented by high-flying companies and labs like Sapphire Energy, Solazyme, Sandia and LANL.

This sprouted an idea. That, and the fact that two former magazine publishing associates from my previous career, Bill Laski and Linda Putnam, had recently gotten in touch and were looking for opportunities. It was not a great leap to see the possibility of forming a small publishing group to explore and document the development of an exciting new industry.

It was also clear that print publishing in this field would result in quick obsolescence, so we chose to make our publication online to respond quickly to the pace of the industry. With Charles' inspiration, we began publishing *Algae Industry Magazine* in 2010 and quickly became known around the world as *the*—if not the only—algae trade magazine. And, as an entrepreneurial online venture, we were able to establish Santa Fe as our world headquarters. We set up an office a mere block from SFCC, with easy access to the brain trust of the community college.

Cut to today, and a few major changes have happened along the way. *Algae Industry Magazine* reformed into [ALGAEPLANET.COM](http://ALGAEPLANET.COM) three years ago to reflect the shift from biofuels to a wide variety of co-products including foods, feeds, nutraceuticals, soil amendments and many more niches. Macroalgae—seaweeds—have also come to dominate the discussion with increasing breakthroughs in carbon sequestration, plastic alternatives, food security and a growing list of sustainable resources for the future of the planet.



From the seed that Charles planted 15 years earlier, [ALGAEPLANET.COM](http://ALGAEPLANET.COM) continues to bring news and features to the industry, with more than 10,000 international algae professionals and enthusiasts per month visiting the site to stay up on the latest developments and breakthroughs in the wonderful world of algae. ■

David Schwartz, publisher/editor of [ALGAEPLANET.COM](http://ALGAEPLANET.COM), was in SFCC's Algae Biofuels class of 2010. [DAVID@ALGAEPLANET.COM](mailto:DAVID@ALGAEPLANET.COM)



Interior of Apogee Spirulina's greenhouse cultivation facility on the SFCC campus.

## FARMING SPIRULINA THE WAY FRENCH ARTISANS TAUGHT US

BY NIC PETROVIC

Arriving at Santa Fe Community College in 2009, I was drawn to its unique sustainability program, the only one of its kind in the United States at the time. This journey set me on the path I walk today as a spirulina cultivator. The program's diversity, with students from around the globe, enriched our learning experience, exposing us to different worldviews and propelling us in similar directions.

Transitioning into the School of Trades, Advanced Technologies and Sustainability, my focus shifted as I delved into algae cultivation, a pivotal step toward the algal biofuels sector. Referring to myself as a "protein farmer," I highlight spirulina's remarkable protein content, emphasizing its status as a complete and easily digestible food source.

After graduating in 2012, I honed my skills in spirulina farming in France, witnessing the exponential growth of micro-artisan cultivation farms over the years. Returning home, I established a retail presence through my website and the Santa Fe Farmers' Market and plan to launch a new range of fresh spirulina products this summer.

My dedication extends beyond cultivation. I host workshops that attract spirulina enthusiasts from around the globe, and I also teach classes at SFCC. Collaborating with Charlie Schultz I contribute to the Controlled Environment Agriculture (CEA)



program's aquaponics farming courses and, with Dr. Stephen Gómez, we are furthering our commitment to sustainable agriculture by taking Algae Cultivation students as interns at my farm.

SFCC's environment fosters innovation in locally grown food, renewable energy and water conservation, placing us at the forefront of sustainability. It's been extraordinary; we are at the cutting edge here in Santa Fe, and the world knows it. Let's continue this momentum. ■

Nic Petrovic is the owner of Apogee Spirulina. [HTTPS://APOGEESPIRULINA.COM](https://apogespirulina.com)

## DESERT VERDE'S CONTROLLED AGRICULTURE FARM

BY ANDREW NEIGHBOR, PH.D.

A trip to the Santa Fe Community College (SFCC) greenhouse inspired me to shift direction and pursue the creation of what has become Desert Verde Farm. On that day, about five years ago, R. Charles Shultz, lead faculty of the Trades' School Controlled Environment Agriculture (CEA) program, described the dire need for fresh and nutritious food for a large, underfed and underserved part of our local community. He offered me a freshly plucked strawberry, and the flavor was beyond anything I had ever tasted. That strawberry convinced me and my wife to risk our retirement savings to build a new, sustainable farm business.

We found a warehouse that suited our needs and began to construct a climate-controlled, indoor vertical aquaponics farm, the only one of its kind in New Mexico. Three years later, we are producing 4,000 plants each week, year-round, 95 percent of which goes to local public institutions like schools, senior centers, food banks and early childcare development centers.

Much of our success is due to our connection with the SFCC CEA program. I learned the intricacies of aquaponics by attending classes and working as an intern at the college greenhouse. But it has been the hard work and commitment of numerous students and graduates who have worked at Desert Verde Farm that has made this business viable. Over three years, more than 20 interns have had temporary work assignments and seven graduates have been hired as part-time employees. This diverse group has brought their curiosity, enthusiasm and knowledge of CEA and aquaponics to support the farm. Often, they contribute skill sets that fall outside aquaponics—like construction and plumbing—to help make this startup a success.

A recent grant from the New Mexico Economic Development Department and generous investment from friends have helped us approach full capacity and, importantly, increase wages and add employees.

We are now planning our next steps. In the fall, we hope to construct a certified food-processing kitchen to produce value-added products from our greens and fish. And beyond that, we hope to expand with additional farm units that benefit from our learning and experience. This will mean more employment opportunities and more fresh, local, healthy food for our community at a time when our food supply is threatened by natural disasters, climate change and supply-chain disruptions.



Andrew Neighbor and basil crop at Desert Verde's facility in Santa Fe

## TURN WASTE STREAMS INTO SOMETHING VALUABLE

BY TEJINDER CIANO

As many had done 50 years earlier, I packed my VW bug and drove to Santa Fe with the idea of creating a sustainable community. Here I was in the summer of 2009, driving through the sun-parched deserts of California and Arizona, reminded of the core necessities for survival: clean air, clean water, clean energy, clean food and a roof overhead. From my previous travels, I knew New Mexico had vast, poetic, clean air; yet I didn't know if the other core principles for survival were in as great abundance.

My quest to learn began. I landed in Española and quickly discovered the rich historical agricultural traditions within northern New Mexico by volunteering on an organic farm



Tejinder and Juliana Ciano at Reunity Farm, Santa Fe

that summer. I learned the promise of abundant, clean food grown by the waters of the Río Grande and became inspired to discover if northern New Mexico indeed had all the ingredients for a sustainable life.

That winter, I picked up a Santa Fe Community College course catalog and was thrilled to discover that they had classes in all things regarding sustainability. Water, Solar, Alternative Fuels! I immediately enrolled in all of them. I had incredible instructors, pioneers from the '60s and '70s who had great, practical, real-world experience in implementing sustainable practices and technologies. I became obsessed with the alternative fuels class, created by Charles Bensinger. He taught with passion and care and inspired his students to create change in the face of climate change. Charles also gave me a wonderful job referral to the Santa Fe Alliance, which was implementing the original Farm-to-Restaurant program in Santa Fe. I was tasked with taking orders from leading chefs and communicating and coordinating deliveries of fresh produce from a dozen local farmers.

From this experience and the education and inspiration from SFCC, Reunity Resources was founded in 2011. Reunity began with a used cooking-oil collection program for biodiesel production, directly inspired and made possible by what I learned and the connections I made at SFCC. What started with a borrowed pickup truck has grown into an organization that employs 14 full-time-equivalent positions. Our compost collection program has diverted more than 15 million pounds of food waste from the landfill since 2014 and donated tens of thousands of meals to those in need through farm-fresh food donations, mutual-aid community fridge, meal programs and Farm Cards for Food Access.

We've continued collaborating with the SFCC Advanced Technologies and Sustainability Department over the years—from teaching a workforce development program there to coordinating food donations during the pandemic. We have hosted nine paid PILAS interns from SFCC at Reunity Resources, and we are proud and grateful to now call many of them colleagues, collaborators and friends, blossoming from their experiences at SFCC.

Unlike the great pioneers of the '60s and '70s, the learning and implementation of the principles of sustainable community now have an institutional pillar to inspire, educate and guide all of us to a more sustainable future. Thanks to SFCC.

Tejinder Ciano is executive director of Reunity Resources. [WWW.REUNITYRESOURCES.COM](http://WWW.REUNITYRESOURCES.COM)



# The Energy Smart Academy at SFCC

*Building Science and Energy Efficiency*

BY **DAVID BEST**

The Energy Smart Academy (ESA) at Santa Fe Community College (SFCC) offers high-quality, consistent, energy-efficiency and green-jobs professional training to students from New Mexico and throughout the United States, through



both in-person and online instruction. Our courses in energy-efficient retrofit methods, water conservation, energy auditing, cold-climate heat pumps and workplace safety prepare students to build a greener future of healthier, more comfortable buildings. With state-of-the-art training facilities, mobile HVAC training props and nationally recognized trainers, SFCC's training benefits industry professionals, residents and business owners as we move toward a decarbonized economy. We offer classes for experienced energy auditors, installers, inspectors, architects



*Left: Instructor Gerardo López and a student perform combustion analysis on a water heater; Above: López sets up a blower door in the ESA lab and performs a blower door test*

and contractors, as well as those who are new to the fields of building science and energy efficiency.

Our story began in 2010, when the New Mexico Mortgage Finance Authority (MFA) selected SFCC as the primary training provider for contractors performing work under the New Mexico EnergySmart Weatherization Program (NMWAP). The ESA initially was established to provide comprehensive training in all aspects of energy efficiency and residential weatherization to MFA contractors throughout New Mexico and has since expanded to provide weatherization training across the country. In 2014, the ESA was one of the first programs in the country to qualify as an "Accredited Training Program" by the Interstate

A large photograph showing a group of people in waders and gear wading through a river. They are using various tools and equipment, including a red box and a net, to conduct a field study. The background shows a natural, wooded area with trees and a clear sky.

**Together,  
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a way.**

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Renewable Energy Council (IREC) for all four of its core weatherization training programs.

During the Covid pandemic, we were able to continue to operate online and through limited capacity, socially-distanced in-person sessions as restrictions allowed. We are now offering more in-person training and developing new courses to serve the emerging demand for market-rate home-energy audits, home-electrification expertise and building-science knowledge. This has been spurred by incentives in the Inflation Reduction Act (IRA) and by new building codes.

### What is a Home Energy Audit?

A Home Energy Audit is a comprehensive analysis of a home's energy use, based on an inspection of the home and past energy bills, which identifies the most cost-effective energy efficiency improvement measures for a specific home. Home energy auditors are trained and certified to specific standards, such as those established by the Building Performance Institute (BPI). A typical Home Energy Audit will include testing the home's air-infiltration rate with a specialized tool called a blower door, measuring the wall, ceiling, window and door areas and determining what insulation (if any) is present. Any combustion appliances in the home will also be tested to determine if they are operating safely and efficiently.



### What is weatherization? What is the Weatherization Assistance Program?

Weatherization refers to work done by contractors or DIYers to improve a home's airtightness and insulation. Care must be taken to combine insulation and air-sealing efforts to optimize insulation performance and prevent moisture and indoor air quality problems. The Weatherization Assistance Program (WAP) provides

Left: The lab's test cabin; Right: a student sealing ductwork  
Photos © Seth Roffman and courtesy SFCC

weatherization services and other energy-saving retrofits at no charge to eligible low-income households (homeowners and renters). Weatherization work performed under WAP always includes an energy audit and follow-up testing for quality assurance purposes. Combustion appliances are evaluated and adequate fresh air ventilation is added when required.

### What is a Blower Door Test?

A blower door test is used to evaluate the airtightness of a home or other building. The blower door fan is installed in an exterior doorway, all doors and windows are closed, and the fan is adjusted to create a specific pressure difference between indoors and outdoors. Air will always find its way into a building through small openings, so the fan must run constantly to maintain the building pressure during the test. The airflow required to maintain this pressure is used as a measure of a building's air leakage. ■

David Best is a senior trainer and building science specialist at Santa Fe Community College's Energy Smart Academy. To learn more about training and certification opportunities, contact [ESADIRECTOR@SFCC.EDU](mailto:ESADIRECTOR@SFCC.EDU).

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## ADMINISTRATION SUPERCHARGES GREEN PROJECT FINANCING

Under the Inflation Reduction Act (IRA), the U.S. EPA recently announced the creation of the Greenhouse Gas Reduction Fund to overcome barriers to investments in clean technology and energy-efficiency projects. In April, the agency awarded \$20 billion (out of a total of \$27 billion) to a small number of nonprofit financial institutions to lead the development of a first-of-its-kind nationwide clean-energy financial network.

The \$20 billion has been divided into two programs—the \$14 billion National Clean Investment Fund (NCIF), under which three awardees will partner with private lenders and community organizations to finance projects, and the \$6 billion Clean Communities Investment Accelerator (CCIA), under which five selected organizations will establish hubs that provide funding and technical assistance to community lenders to finance projects.

Buildings—particularly retrofits of existing buildings—are one of three priority areas of investment, along with transportation and distributed clean-energy resources. Examples, according to guidance released by the EPA, include efficiency and electrification of affordable multifamily housing or school buildings, along with community facility retrofits with on-site solar, storage and charging infrastructure. Projects financed under the CCIA and 60 percent of NCIF projects are to be located in low-income and disadvantaged communities.

Along with new local, state and federal policies such as building performance standards and IRA tax credits, the new financing programs will provide a valuable tool for creating healthier, more sustainable and more decarbonized buildings.

The EPA expects to complete contracts with the awardees by July, with funds to be released shortly thereafter. Most of the awardees are coalitions of housing, climate and community development organizations and other nonprofits that have done similar work for years. The White House estimates that each dollar of federal funding will be matched by nearly \$7 billion of private capital. The administration also estimates that the program will reduce or avoid up to 40 million metric tons of carbon pollution annually over the next seven years.

# LUJAN GRISHAM HIGHLIGHTS ENERGY TRANSITION EFFORTS DURING ELECTRIFY NEW MEXICO CONFERENCE

BY HANNAH GROVER, NM POLITICAL REPORT



Gov. Michelle Lujan Grisham  
at RELA-NM's Electrify  
New Mexico Conference

Gov. Michelle Lujan Grisham boasted about New Mexico's progress in transition to cleaner energy sources during the inaugural Electrify New Mexico Conference in April in Albuquerque. The conference, held at the Sid Cutter Pilot's Pavilion at Balloon Fiesta Park, touched on topics ranging from creating more environmentally friendly buildings to expanding solar and increasing adoption of electric vehicles. "We are in the epicenter of the United States for every clean energy opportunity," Lujan Grisham said. Opportunities include solar, wind and geothermal.

Dylan Connelly with Affordable Solar said that New Mexico is the number one location for solar, and that the state has an advantage compared to its neighbor, Arizona, because it is not as hot. The cooler temperatures allow for more optimum solar electricity generation, given comparable amounts of available sunlight.

At the same time, Karen Paramanandam, marketing manager for Unirac Inc., said that as of 2022, New Mexico ranked 12<sup>th</sup> in the nation for renewable energy production. Furthermore, she said only five percent of the state's energy came from solar. That means there is a lot of room for growth, she said, adding that solar represents a massive opportunity for the state. New Mexico ranks fifth in the nation for jobs in renewable energy, she said.

She then spoke about how people outside of the state often associate New Mexico with the television show "Breaking Bad." She said that she would like to see New Mexico be known for renewable energy instead. "I would love to see New Mexico as number one for renewable-energy jobs. Number five is awesome," she said.

*New Mexico is the number one location for solar but ranks 12<sup>th</sup> in the nation for renewable energy.*

Lujan Grisham said that the achievements that New Mexico has made in the energy transition are purposeful and come as a result of policy decisions, including the Energy Transition Act, that put most of the electric utilities in the state on the path to zero emissions. These efforts

also include tax incentives that make it easier for New Mexicans to reduce their carbon footprint. That includes more than \$90 million in tax credits for renewable energy. "I'm going to tell you that is a remarkable investment," she said. "It means that people everywhere in New Mexico can invest in our own solar and our own efforts and our own electric vehicles." At the same time, the governor acknowledged that there are still major challenges ahead, though she highlighted federal funding that may help smooth the road. New Mexico has received federal funding to support deployment of fast electric vehicle charging infrastructure.

She also highlighted the Clean Transportation Fuel Standards that passed the Legislature during this year's legislative session. The governor signed the bill into law. The Clean Transportation Fuel Standards aims to reduce the carbon intensity of fuels like gasoline and diesel. Lujan Grisham said this allows people to reduce emissions without having to change the type of engine in their vehicle.

## *The state's sustainable economy task force is now beginning to ramp up.*

Additionally, the governor highlighted efforts from the electric utility sector, including grid modernization and community solar.

The conference included a recorded video statement from U.S. Sen. Martin Heinrich, a Democrat representing New Mexico. Heinrich said that in the future, most people will power their cars and heat and cool their houses using electricity rather than fossil fuels. In addition to helping the state and country achieve climate goals, Heinrich said this transition will lead to lower energy costs for New Mexico families.

Furthermore, Heinrich said, the energy transition represents a once-in-a-generation opportunity to grow the middle class by creating jobs, but that requires investing in training initiatives and career technical education. He highlighted the new America Climate Corps as another way of training up the workers needed for the energy transition. "These are careers that New Mexicans can build their families around," he said. Heinrich said he is working in the U.S. Senate to advance legislation that would expand access to apprenticeship and pre-apprenticeship programs.

Senate Pro Tem Mimi Stewart, D-Albuquerque, spoke about electrification from the legislative perspective. Stewart, who has spent decades in the state Legislature, highlighted some of the accomplishments that have been made

## *The energy transition represents a once-in-a-generation opportunity to grow the middle class by creating jobs, but that requires investing in training and career technical education.*

during her tenure. She started with renewable portfolio standards—the amount of electricity that regulated utilities must receive from renewable sources. Stewart first led efforts to institute renewable portfolio standards back in 2007. She was later instrumental in getting the Energy Transition Act (ETA) passed, which created the standards that are currently in place.

Stewart said New Mexico was among the first states to adopt clean-car standards, but those were repealed under the previous governor. New Mexico recently adopted clean-car standards once again that require manufacturers to increase the number of zero-emission vehicles delivered to New Mexico for sale. Stewart herself owns a plug-in hybrid vehicle but says she is looking to buy a used electric vehicle. "There are hardly any used EVs in New Mexico. These clean-car standards are going to change that," she said.

She then spoke about tax credits, including \$30 million for solar. She said the state first passed a tax credit to help people install solar panels in 2006. That expired in 2016, and legislators tried to bring it back multiple times before it finally passed and was signed into law this year.

She also praised the community energy-efficiency development block grant that helps with energy efficiency in houses in rural areas. "Efficiency is the low-hanging fruit. We should be doing it everywhere," she said, adding that they hope to expand it.

Stewart spoke about the challenges surrounding passing the clean fuels

transportation standards, which took years to get through the Legislature. She said that legislation has spurred economic growth and there are now 28 companies coming to the state to help clean up fuels. "It's stunning how many people want to do this," she said.

She then spoke about a just transition and how the ETA provided \$20 million for apprenticeship programs and retraining. She said most bills that have to do with energy now include equity language and that the sustainable economy task force is now beginning to ramp up. "We're hoping that we continue to work on that transition," she said. She said the state put \$50 million into expanding apprenticeship programs.

"We have money, we have a climate emergency on our hands, and we have a room full of people who know what they're doing," Stewart said. "So, I believe we are a leader and that we're going to be even better in the future." Stewart said the Legislature is not done. Her office is doing a study on climate and what needs to be done next. "We're going to have bills for January," she said. ■

## RENEWABLE ENERGY INDUSTRIES ASSOCIATION—N.M. "ELECTRIFY NEW MEXICO" CONFERENCE

PHOTOS BY **SETH ROFFMAN**



*Above: Alexandra Iseman (DA Davidson) speaks during Incentives for Investment in Electrification panel moderated by Jim Desjardins (RELA-NM); PNM electric vehicle on display; Gary Gunthorpe (PPC Solar); conference attendees*



Top: Framing the Electrification Future of N.M. panel with (l-r) moderator Amy Miller; Jim Folkman (Foundation for Building); Dr. Patricia Sullivan (NMSU); Gary Gunthorpe (PPC Solar) and Karen Paramanandam (Unirac); Stuart Rose; Strategies for an Orderly Energy Transition panel with moderator Andrew Stone (N.M. People’s Energy Cooperative); Kayla Lucero-Mattenczi (N.M. EDD); Shann Tsabetsaye (Zuni, Havikku); Rebecca Puck Stair (Energy Conservation and Mgmt. Div., N.M.); Marlene Brown, CNM instructor, asks about solar job opportunities; Economic Case for Businesses & Electrification panel with moderator Gabe Gallegos (SUNNY505); Adam Harper (OE Solar); Aaron Ketner (Dekker Perich Sabatini), Bob Coursen (Mitsubishi) and Martin Chávez (State of N.M.); 350.org rep.; N.M. Rep. Mimi Stewart

## NMED DEPARTMENT FINALIZES ENERGY TRANSITION ACT AWARDS

*Projects in Grants, Shiprock, Abiquiú, Farmington to move forward with energy storage and renewable initiatives*

The New Mexico Economic Development Department (EDD) has finalized awards from the Energy Transition Economic Development Assistance Fund to four projects that will diversify the economy and create jobs unrelated to fossil fuel development or use.

The 2019 Energy Transition Act (ETA) established a statewide target for investor-owned utilities and rural electric cooperatives to achieve 50 percent renewable energy by 2030 and 80 percent by 2040, with accompanying targets for utilities and co-ops to reach zero-carbon resources by 2045 and 2050, respectively. The ETA also provided financial mechanisms to ease the impact of coal plant closures, creating a fund to provide workforce training and economic relief to affected communities—defined by the ETA as any community in a county that is within 100 miles of a qualifying facility closure—particularly the San Juan Generating Station.

The 2023 Legislature allocated \$5.9 million to EDD for non-fossil fuel economic development opportunities, and these awards are part of that effort.

The finalists were selected out of 15 submissions as part of an RFP process. The evaluation committee was composed of experts in economic development, renewable energy, climate change and social equity, with representatives from state agencies and an Indigenous-led nonprofit. The evaluation process included tribal consultation and collaboration between EDD and the Energy, Minerals, and Natural Resources Department (EMNRD).

“Ultimately, the final awards honor the objectives and intent of the ETA, providing support for renewable energy projects in low-income, rural and Indigenous communities affected by coal plant closures and creating opportunities for New Mexico-based renewable energy companies,” said Acting EDD Cabinet Sec. Mark Roper, who announced the projects in Farmington on April 11.

The following projects received funding:

### **Northern New Mexico Indigenous Farmers Inc., Shiprock—\$3,638,375**

The award provides the majority of funds needed to replace the Hogback Water Pumping Station and a solar-powered pumping station with microgrid and energy storage capabilities.

The Hogback Pumping Station is downstream from the Hogback Diversion on the Hogback Canal, which flows between Waterflow and Shiprock. The pumping station provides irrigation to farmlands within the Hogback Chapter of the Navajo Nation. The lateral irrigation lines have not been updated since the 1960s; as a result, approximately 2,000 acres of farmland have been sitting idle for years. At present, the pumping station does not provide adequate water consistently throughout the agricultural season. The result is farmers spending time, capacity and resources to sow their fields while lacking consistent water to harvest their crops.

The project is also funded in part through the Gold King Mine Spill Settlement, administered by the Office of Natural Resources Trustee, and State of New Mexico Severance Tax Bonds.

NNMIF is composed of local farmers who have waited to get their idle land to production after experiencing the impacts of pandemic food shortages. Its

members have been instrumental in the vision of seeing the irrigation waters flow again, hoping for bountiful harvests in the years ahead.

#### **C&E Concrete, Grants—\$977,465**

The grant will facilitate development of three photovoltaic (PV) systems across C&E Concrete's facilities in Grants with a total capacity of 245 kW. One of the key projects supported by the grant includes installation of a storage solution for heightened power resiliency at their headquarters. This system will not only enhance the company's operations but also serve as a cornerstone for a community disaster relief shelter, showcasing the dual benefits of infrastructure enhancement and improved community safety.

In addition to the disaster relief shelter, two grid-tied systems will be deployed at C&E Concrete's manufacturing facilities, delivering significant energy offsets. One of these systems will replace a diesel generator.

C&E Concrete, a stalwart of the regional economy, will leverage this funding to transition from its traditional role as a supplier of high-grade calcium carbonate limestone to the now-closed Escalante and San Juan Power Plants toward a future centered on clean energy production. With a workforce of 146 employees, the company exemplifies resilience and adaptability in the face of evolving economic landscapes, traits that have contributed to its 50 years of success in the industry.

### *A strategic vision to bolster economic vitality through sustainable energy initiatives*

This groundbreaking project, made possible in part by the U.S. Department of Agriculture, signifies a progressive leap forward for C&E Concrete and “underscores the state's strategic vision to bolster economic vitality through sustainable energy initiatives... and underscores the state's dedication to fostering renewable energy solutions and driving economic growth, especially in regions adapting to changes in the energy sector,” according to a press release. The low-income, rural region has significantly been impacted by the Escalante Power Plant closure.

#### **City of Farmington —\$1,036,861**

EDD has elected to make a partial award to the city of Farmington in support of its solar generation and battery storage proposal. With the addition of renewable generating and storage capacity to the Farmington Electric Utility System, the proposed project along with other grant resources will help lower the cost of electricity to all ratepayers within its system.

#### **Purple Adobe Lavender Farm, Abiquiú—\$187,298**

The award supports a project with Positive Energy Solar for the installation of three separate solar arrays located at the Purple Adobe Lavender Farm in rural Abiquiú. Combined, the three arrays will reduce the farm's carbon footprint, making Purple Adobe Lavender Farm a community leader in green business practices and allowing for year-round operations.

The farm grows commercial lavender, sells lavender products in its shop and offers community events and educational opportunities to practice organic farming. During the peak season, it has nine employees.

## **NEW MEXICO RECEIVES \$156M TO BOOST ACCESS TO SOLAR**

**BY HANNAH GROVER, NM POLITICAL REPORT**

New Mexico will receive millions in federal money to increase access to solar power. The U.S. Environmental Protection Agency announced recipients of the \$7 billion Solar for All competition awards on April 22. The state will receive \$156 million through the program, which is enough to increase solar access for more than 21,000 households. The New Mexico Energy, Minerals and Natural Resources Department (NM EMNRD) will oversee the state's Solar for All program.

“The EPA's Solar for All program is an unprecedented investment in clean, affordable renewable energy for low-income communities across the country,” Gov. Michelle Lujan Grisham said in a press release. “It is only natural that New Mexico—a national leader in clean energy—would be among the states selected. This will help ensure that all New Mexicans, regardless of income level, can benefit from our clean energy transition.”

The funding was made available through the 2022 Inflation Reduction Act, which created a \$27 billion Greenhouse Gas Reduction Fund that includes the Solar for All program. EPA Administrator Michael S. Regan said the entities selected to receive the funding will use it to advance “solar energy initiatives across the country, creating hundreds of thousands of good-paying jobs, saving \$8 billion in energy costs for families, delivering cleaner air and combating climate change.”

Access to solar energy for low-income communities is important because utility bills are increasing. According to the U.S. Energy Information Agency, in 2023, residential electricity rates increased at a rate of 2 percent per month. The average American pays \$138 monthly for electricity. Rooftop solar can lead to lower electric bills, which can help households that might otherwise have to make tough decisions like whether to buy groceries or pay their utility bill. However, the initial costs to install solar panels can put these benefits out of reach for many families. The EPA estimates that the \$7 billion in funding will lead to \$360 million in annual savings nationwide for about 900,000 households that are struggling to pay utility bills.

“With the fires, drought and heat that New Mexico is experiencing because of the global climate crisis, there is real hope in being awarded \$156 million to superpower the Community Solar program,” Camilla Feibelman, director of the Río Grande Chapter of the Sierra Club, said in a press release. In New Mexico, NM EMNRD and its partners will use the funding to expand access to arrays that can provide energy to multiple households beyond what is currently allowed in the Community Solar program. The focus will include bringing power to households that do not have access to electricity.

The state says models indicate the Solar for All program will add 21 megawatts of solar energy capacity to New Mexico's power grid and will also add 8.1 megawatt hours of stored energy that can be used when there is not enough sunlight to generate power through photovoltaic arrays.

An organization known as GRID Alternatives' Western Indigenous Network Solar for All is also receiving funding. The nonprofit received more than \$62 million that will help with energy sovereignty efforts while also addressing environmental destruction and climate change. The program operates nationwide, but prioritizes tribal communities in Colorado, Nevada, New Mexico and Utah. In a press release, GRID Alternatives CEO and co-founder, Erica Mackie, said, “Our mission is to build community-powered solutions to advance economic and environmental justice through renewable energy is supercharged by this award. Our team of leading nonprofits and partners, which includes high-profile affordable housing organizations with deep community roots, looks forward to engaging community stakeholders to tailor these game-changing resources.”

## ABQ COMPLETES FIRST PHASE OF MILLION DOLLAR CLIMATE ACTION GRANT

*Priority climate action plan identifies projects to receive funding*

On April 16, the city of Albuquerque made public the first deliverable for the Climate Pollution Reduction Grant's planning program after receiving \$1 million in January. This first deliverable was submitted on behalf of the Albuquerque Metro Statistical Area and is called the Priority Climate Action Plan (PCAP). The PCAP is meant to identify an initial set of projects to the U.S. Environmental Protection Agency (EPA) that meet the two overarching goals: to reduce climate pollution and benefit frontline communities.

"Climate change impacts us all, but we know that our frontline communities take on the largest burden of climate injustices," said Mayor Tim Keller. "We're taking critical strides to make the entire Albuquerque metro area a more equitable and climate-resilient place for all of our families."

"We demonstrated that the city has an effective method for developing meaningful community-driven climate action plans with the successful application of our 2021 Climate Action Plan," said Alice Main, Albuquerque's Carbon Pollution Reduction grant manager. "Now with this federal funding, we can apply these best practices for an even greater impact."

The release of the PCAP report marks the beginning of a four-year, multi-jurisdictional planning effort. The second phase of the EPA's grant will include strategizing regional collaborative efforts and developing the metro area's first greenhouse-gas inventory to help governments, industry and individuals alike make data-informed decisions to reduce pollution.

A robust public engagement effort will begin this summer. Read the entire PCAP to see the initial set of implementation-ready projects and learn more about the planning grant's efforts at: [CABQ.GOV/CPRG](http://CABQ.GOV/CPRG).

## GREENLATINOS SUSTAINABLE CITIES URBAN GREENING INITIATIVE

GreenLatinos, a national network of Latino/a environmental and conservation champions, is allocating a total of \$2,650,000 in grants to revitalize green spaces in urban communities across Los Angeles, Albuquerque and Chicago. The organization is collaborating with community-led projects and organizations to foster the growth of parks, community gardens and urban forests. The awards range from \$150,000 to \$500,000. The funding was made possible by a grant from the Bezos Earth Fund as part of its Greening America initiative.

GreenLatinos is distributing \$1.05 million in grants in Albuquerque to organizations that applied earlier this year with developed plans ready for implementation. In a statement, GreenLatinos New Mexico community advocate Carlos Matutes said, "Hispanic/Latino/e communities suffer from environmental impacts at a disproportionately high level, have less access to green spaces and receive less funding to mitigate those inequalities. This initiative will close that gap in our city while improving the quality of life for everyone in Albuquerque."

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**Sign Up Begins**  
**May 2024**

**June 5th - October 17th, 2024**

### Pick Up Locations

#### Wednesdays

4-6pm @ SVEDC  
318 Isleta Blvd SW

#### Thursdays

4-6pm @ Central United  
Methodist Church  
201 University Blvd NE

CSA Contact: Melodía D'Amour  
[lacosechacsa@agri-cultura.org](mailto:lacosechacsa@agri-cultura.org)  
(505)217-2469



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## NATIVE ROOTS SCHOOL SUMMER CLASSES

### *Ancestral, Folk and Herbal Medicine*

Native Roots School, based in Taos, is offering an online, five-month Ancestral, Folk and Herbal Medicine class, starting May 13, and an in-person program, starting July 1. Nine teachers will guide students in experiencing healing modalities and traditional medicines of the teachers' Indigenous cultures. They will also encourage students to reclaim their own cultures' healing modalities.

A series of classes on psilocybin, presented by Cheves Fleming, will be offered in Taos starting Aug. 10. Topics will include "magic mushrooms" throughout history; geographic distribution of the mushrooms; traditional, ceremonial and medical uses; cultivation techniques, and responsible and effective use—from micro- to macro-dosing.

Psilocybin is still a Schedule 1 substance under federal law. However, attitudes are changing. In 2005, a landmark case in New Mexico found that growing psilocybin mushrooms for personal use does not constitute manufacturing a controlled substance. In 2019, Denver became the first U.S. city to decriminalize the mushroom. Many have followed, including Washington, D.C., Seattle, Oakland, Santa Cruz, Detroit and others. In 2020, voters in Oregon passed a ballot to decriminalize psilocybin and legalize its supervised use. In 2022, Colorado voters passed a similar measure. The New Mexico Legislature recently passed a memorial to study therapeutic uses of psilocybin. Proponents hope it will soon be decriminalized for medical purposes.

All of this new thinking is based on scientific research that began in the early 2000s. Since then, there has been clinical research and therapeutic treatment for anxiety, depression, Parkinson's, dementia and other medical conditions. Documented evidence of positive effects of psilocybin's chemical constituents has been overwhelming, and so legislation is increasingly being proposed. Native Roots School's teacher, Cheves Fleming, who has suffered from debilitating cluster headaches, was the first person in New Mexico to receive a doctor's recommendation for the use of psilocybin.

Tribally affiliated members of New Mexico may take the classes by donation, and a "New Mexico heritage" discount is offered. For details, call 914-400-7558 or visit [NATIVEROOTSSCHOOL.COM](http://NATIVEROOTSSCHOOL.COM).



## GRANT BENEFITS SOUTH VALLEY ORGANIZATIONS

In late March, U.S. Rep. Gabe Vasquez delivered an \$850,000 check to the South Valley Economic Development Center (SVEDC) in Albuquerque for construction of an agricultural economic development center to help address food insecurity and increase job growth in the sector. The funds are part of the \$13.9 million in Community Project Funding (CPF) Vasquez secured for 15 projects across the district. "The SVEDC has long been a cornerstone for fostering entrepreneurship and job creation in southern New Mexico," said Vasquez. This historic investment represents a significant opportunity to witness tangible benefits, while also addressing crucial issues such as food security."

Río Grande Community Development Corporation (RGCDC) and Delicious New Mexico are part of the expansion that will foster the local food economy. It will help dozens of farmers and food businesses across the region grow and distribute healthy, fresh, local food.

"This support not only brings the project to the finish line, but also amplifies the work of food systems and economic development in New Mexico," said Josue Olivares, of the Río Grande Community Development Corporation. "This expansion and investment in the South Valley will continue to elevate our community's agricultural legacy," said Bernalillo County Dist. 2 Commissioner Steven Michael.

"With the new facility, we'll move beyond washing and packing 10,000 pounds of food each week to include value-added processing, including hydration, freeze-drying and new products, and process 50,000 pounds of food each week with yearly increases," said Helga Garza of the Agri-cultura Network. The SVEDC project is a public-private partnership among Bernalillo County, RGCDC and Agri-cultura.

*U.S. Rep. Gabe Vásquez (l) with Agri-Cultura Network's Helga García Garza, State Sen. Linda López, Josue Olivares of the Río Grande Community Development Corporation, and Bernalillo County Commissioner Steven Michael*





# STEWARDSHIP AS AN ORGANIZATIONAL VALUE IN SANTA FE

BY LUCY C. STANUS

Santa Fe Public Schools has committed to modeling environmental stewardship by example. Preparing students for the future means demonstrating how to care for our community and planet.

In a community with an emerging clean-energy economy and on the frontline of climate impacts, Santa Fe students must be prepared with the inspiration, knowledge and critical thinking skills required for the next generation of jobs.

Environmental ethics have long been incorporated into the multicultural framework that makes Santa Fe what is affectionately called “The City Different.” From the work of teachers and school-based staff to district administrators to a robust network of community partners, collaboration on stewardship



initiatives pre-dates a formal sustainability program at the school district. Even so, the formalization of the school system’s environmental values into board of education resolutions and policy has been instrumental in catapulting organizational sustainability forward and creating an expectation of shared responsibility among everyone in the school community.

## Board Policies

An energy management resolution passed by the Santa Fe school board in 2010 served as the impetus for establishing the district’s sustainability program. The resolution’s primary goals were to reduce energy use, to save operational dollars and to reduce carbon emissions.

A subsequent board policy, Organizational Sustainability through Environmental Stewardship, was adopted in 2017, further cementing principles of sustainability into every level of the organization. In 2019, the board passed another resolution, Call to Climate Action: A Resolution to Support our Youth in their Declaration of Climate Emergency and Call for Action, which recognized the role of students in the climate crisis and supported their participation in a climate strike.

In the 14 years since the school district formally committed to environmental sustainability, Santa Fe has achieved a 28 percent reduction in electricity purchased from the grid, a 16 percent reduction in natural gas use, a 75 percent reduction in water use and a 30 percent reduction in waste sent to the landfill.

This progress has been possible due to a multifaceted approach, motivated staff members, a supportive board and dedicated funds from general obligation bonds.

## Sustainability Measures

With 2.5 megawatts of solar photovoltaic generation capacity, Santa Fe Public Schools runs on more than 25 percent district-owned solar power with more capacity to come.

Solar arrays currently power 18 district buildings and were primarily constructed with funding from general revenue bonds. Students and families also advocated before their state legislators for solar at

*Planted median captures runoff water in Santa Fe High School’s parking lot; middle: Solar array in Milagro Middle School parking lot; bottom: Solar array near Capital High School*



This article was originally published in the April 2024 magazine, School Administrator.

two school sites, helping the district secure capital outlay funding and proving the power of the school community at large to make a difference.

In addition to its commitment to solar energy, the school district prioritizes water conservation in the water-scarce environment of Santa Fe. Strategies include consumption monitoring, leak-detection and intervention, rain garden construction, low-flow fixture conversion and underground cistern installation. Converting athletic fields to synthetic turf has also made a demonstrable impact on the district's water usage.

Santa Fe has been fortunate to work with a community-based organization, Reunity Resources,

which collects food waste from 23 school sites and, in turn, curbs the amount of waste sent to landfill. The food waste is converted to compost on the organization's farm, which then supports the soil health of school gardens across the district. Other waste reduction initiatives include educational outreach, mandated single-stream recycling, electronic waste recycling and creative reuse of materials, furniture and other assets.

To enhance sustainability, Santa Fe Public Schools developed a sustainable design standard outlining energy-efficiency requirements for new construction and major renovations. This framework document provides clear communication on the intentions of the district to the construction team, design team and facility managers. This ensures the district's built environment is both fiscally and environmentally sustainable.

### Looking Forward

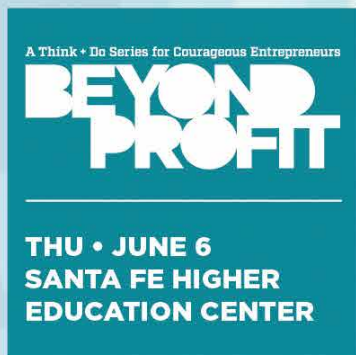
From a single staff member in 2010 to a team of three in 2024, the sustainability program at Santa Fe Public Schools continues to grow. To advance sustainability curriculum and instruction, a second staff position was incorporated into the program in 2017 to work directly with students and educators. The expansion led to expanded STEAM education, preparing students for the next generation of careers and strengthening operational sustainability initiatives.

In 2024, the program welcomed a third staff member whose focus is on expanding the number of students walking and biking to school each day. Through federal Transportation Alternative Program funding for Safe Routes to School initiative, the new coordinator supports the reduction of transportation emissions and the improvement of air quality.

Meanwhile, champions across the district also share the responsibility of moving the needle on organizational sustainability by pursuing innovative and data-driven approaches within their own areas of expertise in support of our planet, community and student learning. ■



Lucy Stanus is sustainability program director in Santa Fe Public Schools. [LSTANUS@SFPS.K12.NM.US](mailto:LSTANUS@SFPS.K12.NM.US)



THE BEYOND PROFIT SERIES IS CO-PRESENTED BY UNM ANDERSON CENTER FOR RESPONSIBLE ENTREPRENEURSHIP AND CREATIVE SANTA FE. THANK TO OUR SERIES SPONSOR CITY OF SANTA FE OFFICE OF ECONOMIC DEVELOPMENT.

## UNM Anderson Center for Responsible Entrepreneurship and Creative Santa Fe Presents:

### 1-4 PM • UNM ANDERSON ACCELERATOR PITCH EVENT

Listen to the venture pitches of twelve entrepreneurs working hard to launch and grow their new businesses during the last ten months. They have been supported by a collaborative community that has guided and mentored them, and we are eager to present their ventures! You will hear twelve innovative ideas from local entrepreneurs, ranging from a food truck in Navajo communities to sustainable, refillable sunscreen solutions to compostable toilet options to a digital art market for Native Americans. This session is free and open to the public. Light refreshments will be served.

Thank you to our judges: Bridget Dixon (Santa Fe Chamber of Commerce), Ward Hendon (Dangerous Ventures), and Drew Tulchin (NM Angels).

### 5-7:30 PM • CHANGING HOW WE INVEST TO UNLOCK BETTER HUMAN OUTCOMES

The nature of impact investing is changing as responsible businesses look to secure funding by applying ESG guidelines of: Environmental, Social, and responsible Governance. It's a complex overlay that will unlock a future economy for the betterment of humanity. But is it working?

Join us for inspiring talks and moderated conversation between Mel Dubin (Deloitte & Touche) and Jake Walko (Thornburg Investment Management). Expand your network at the post-presentation wine reception.

This session is free and open to the public with a suggested donation of \$25 per attendee. Proceeds support UNM Anderson Center for Responsible Entrepreneurship and Creative Santa Fe.



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# Santa Fe Public Schools Highlighted at Green Schools Conference

BY TARA MELTON

The Green Schools Conference, presented by The Center for Green Schools and Green Schools National Network, is an annual three-day conference that brings together everyone involved in creating and advocating for green schools, with a focus on those leading their schools and school systems toward whole-school sustainability.



*Santa Fe Public Schools Superintendent Larry Chávez spoke about SFPS sustainability efforts.*

The 2024 conference was held in Santa Fe in March and highlighted many of Santa Fe Public Schools' environmentally friendly initiatives. Superintendent Hilario "Larry" Chávez welcomed the attendees and spoke about SFPS sustainability efforts. "Since 2010, we've reduced 75 percent of water usage, 30 percent of waste that is sent to the landfill, and we've produced 25 percent of our own electricity, which continues to increase," Chávez said. "We also have the first electric school bus

in New Mexico. We're hoping in two months to have three additional buses running routes, and by the end of the academic year we hope to have four more [electric buses], for a total of eight."

Chávez highlighted Milagro Middle School, which produces 75 percent of its own electricity. Conference attendees toured Milagro and were able to see some of the school's green initiatives.

"It is a unified vision between the board, the community and the Santa Fe Public Schools," Chávez said. "I think we're making a difference, and we are one of the leaders, not just in New Mexico, but around the nation." He encouraged conference attendees to continue their fight for green initiatives in their school districts and to take back what they learned from SFPS. "When you invest in green schools and invest in sustainability, you are investing in your workforce and you're investing in your students," Chávez said.

Following Chávez's speech, panelists shared unique perspectives and experiences in environmental advocacy, community organizing, climate storytelling and intergenerational collaborations for successful climate action. The Youth Climate Action panel—comprised of four dynamic activists, included Carmen Valentino, a sophomore from the Academy for Technology and the Classics. Valentino said, "I think it's very important that schools approach climate change through a multidisciplinary lens to engage as many students as possible. We all have something to contribute, and that's exactly what [the Climate Innovation Challenge Youth Advisory Board] is about—starting where you are, exploring your own talents and interests and then figuring out how you can contribute to finding climate change solutions."

Lisa Randall, former SFPS Sustainability Program coordinator, who retired in 2023, was honored with the "Best of Green Schools Award" for the School District Champion category. "The important work of ensuring that our schools are models of sustainability—decreasing environmental footprint, increasing health and wellness and increasing sustainability literacy—requires the tireless work of individual changemakers," said Anisa Heming, director of the Center for Green Schools. "While she worked at Santa Fe Public Schools, Lisa Randall built a solid foundation for the district to achieve its goals, and this award acknowledges the leadership position that her work earned her on the national stage. We are grateful for her dedication." ■

*Tara Melton is a digital communications specialist with Santa Fe Public Schools.*

## UNM LAUNCHES SUSTAINABILITY DEPARTMENT

BY SARAH SCOTT, INSIDE UNM

The University of New Mexico (UNM) is taking a significant step towards a sustainable future with the creation of a new, dedicated Sustainability Department. This initiative aligns with the university's commitment to creating a more eco-friendly and environmentally responsible campus in alignment with the UNM 2040 Strategic Planning Framework. The Sustainability Department's mission is to champion the reduction of UNM's environmental impact, focusing on five core activities: Material Management, Energy, Buildings and Grounds, Food and Dining Services, Transportation.

A comprehensive UNM Sustainability Strategic Plan (SSP) is being created to identify and mitigate the university's environmental footprint. The plan will outline specific targets and projects to reduce Greenhouse Gas (GHG) emissions.

### Leadership and Oversight

To lead this mission, UNM is conducting a search for a director of sustainability, who will report directly to the assistant vice president of Campus Environments & Facilities for Institutional Support Services. The director will be tasked with assembling a sustainability steering committee, comprising representatives from various university sectors, including Facilities Management, Utility Services, Planning, Design & Construction, UNM Food, Sustainability Studies, Student Groups, Purchasing and other key stakeholders.

The director of sustainability will work closely with this committee to establish an SSP and ensure ongoing updates on project progress. The university's ambitious 2040 GHG Emissions Target will be a top priority, with key tasks that include streamlining GHG inventory processes and creating tactics teams for each of the five GHG activities.

### The UNM Sustainability Vision

The UNM Sustainability Department will strive to develop short- and long-term goals aligned with the university's broader sustainability objectives. It will work to ensure that sustainability standards and requirements are met, not only in campus operations but also across areas like education, research, creative works and administration.

The new department will play a pivotal role in aligning UNM with the vision and goals outlined in the UNM 2040: Opportunity Defined strategic planning process. The transition plan for the department, which will include the creation of a dedicated departmental website, is currently being developed.

"By establishing a dedicated sustainability department, UNM is taking a giant leap towards a greener, more sustainable future, solidifying its commitment to making impactful change not just on campus, but for our community," said Lisa Marbury, assistant vice president of Campus Environments & Facilities.

## BOOK PROFILE

### FIRE WEATHER: A TRUE STORY FROM A HOTTER WORLD

BY JOHN VAILLANT

ALFRED A. KNOPF, 2023, [WWW.AAKNOPF.COM](http://WWW.AAKNOPF.COM)

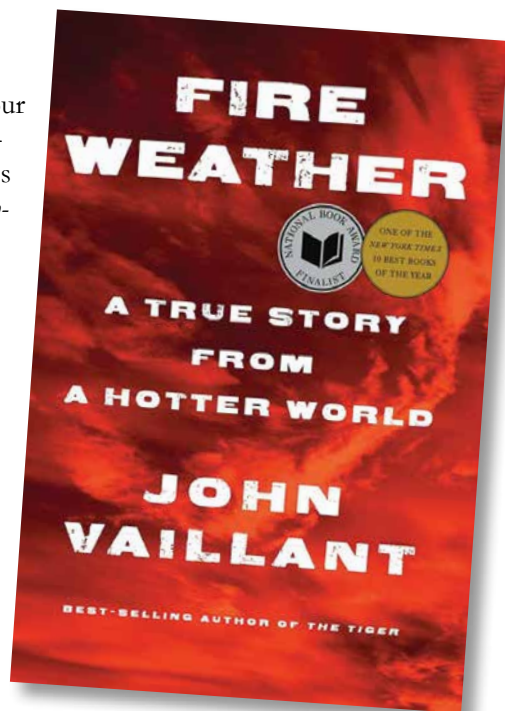
In New Mexico, in April 2022, the Hermit's Peak/Calf Canyon Fire, the largest in the state's history, blew up, rapidly engulfing tens of thousands of acres of parched forests in mere hours, ravaging several communities. Summer rains that extinguished the fires brought burned soil and trees down the mountains into the valleys and rivers. More than 80 acequias were damaged across 60 square miles in over a dozen watersheds. Residents are still digging out and disaster recovery efforts are ongoing.

Massive and deadly wildfires linked to low snowpack and above-average winter temperatures have burned across Canada. Elevated wildfire warnings have been popping up all across the United States—from the Mexican border to the Great Lakes and the Florida panhandle. In early March, the Smokehouse Creek Fire raced across the Texas Panhandle into Oklahoma, impacting more than a million acres.

“Winter fires on this scale signal a much larger disruption to climate stability that will distort not only our concept of seasons but also everything we do and care about,” writes John Vaillant, author of *Fire Weather: A True Story from a Hotter World*. “It is alarming to see these fires and warnings in what is supposed to be the dead of winter, but fire, as distracting and dangerous as it is, is merely one symptom. What is happening in North America is not a regional aberration; it's part of a global departure, what climate scientists call a phase shift. The past year has seen virtually every metric of planetary distress lurch into uncharted territory... The world we thought we knew is changing under our feet because we changed it... We're not ready for these changes, and neither are most of our fellow creatures.”

In *Fire Weather*, Vaillant chronicles the intertwining histories of North America's oil and gas industries and the study of climate change. The book's true protagonist is fire, which Vaillant treats like a living, breathing creature that is destined to grow more dangerous as the world becomes even more combustible. “If I have learned one thing from writing about wildfires,” Vaillant says, “it is that this hotter, less stable world is not the new normal. We are entering *clima incognita*, the unknown climate. Here be dragons, and some of them are fires 20 miles wide.”

Vaillant is an American-Canadian writer and journalist whose work has appeared in *The New Yorker*, *The Atlantic*, *National Geographic* and *Outside*. *Fire Weather* was one of *The New York Times* 10 Best Books of 2023, winner of Britain's Baillie Gifford Prize for Nonfiction and a finalist for the National Book Award. Vaillant will take the stage to converse with fellow author William deBuys (“A Great Aridness”) on May 18 at the 2024 Santa Fe International Literary Festival.



## SANTA FE INTERNATIONAL LITERARY FESTIVAL

May 17–19, SF Community Convention Center

Entering its third year, the Santa Fe International Literary Festival (SFILF) is in a critical phase in its development as it strives to become a permanent presence among Santa Fe's well-established summer cultural events. The challenge, said Clare Hertel, SFILF co-founder and executive director, is “to continue focusing on making it financially viable for the future.”

This year's lineup should generate record audiences to help with that task. The festival will again feature bestselling and prize-winning authors, including Julia Alvarez, Kai Bird, Anthony Doerr, David Grann, Hua Hsu, Radden Keefe, Anne Lamott, Tommy Orange, Tracy K. Smith, Jesmyn Ward, and Javier Zamora. Authors from New Mexico include Hampton Sides, Hakeem Bellamy, Ramona Emerson, Jamie Figueroa, Natalie Goldberg, Douglas Preston, Jenn Shapland, Arthur Sze and Luci Tapahonso.

“It's hard to believe the Literary Festival is in its third year and hasn't always been a fixture in Santa Fe's amazing arts and culture celebrations,” said Mayor Alan Webber. “More than a ‘nice-to-have’ part of life in Santa Fe, it's an absolute ‘must have,’ and I look forward to the city supporting the festival this year and for years to come.”

Hertel and her husband, publisher Mark Bryant, had the idea for the festival a decade ago. They collaborated with New Mexico Writers Board Chair Carmella Padilla and many others to bring it to reality. “It's been an incredible team effort,” said Hertel. “We could not have gotten off the ground without the city and Mayor Alan Webber's support.” Financial contributions from the Gale Family Foundation and many others in the community have also played a major part in keeping the festival going.

“The festival quickly got a reputation among authors, publishers and agents as an exciting, well-organized event,” said Hertel. “The world-class writers from near and far that we've been able to attract has helped a lot, and it would be an understatement to say that people love the idea of spending a long spring weekend in this beautiful city.”

Along with seeking inspiring and entertaining authors, both well-established and on the rise, the festival wants participants “committed to engaging with our audience and to spending time with students in our

local schools, libraries, literacy groups and the festival's Young Writers and Readers program,” said Hertel. “They all need to embrace the festival's mission to bring people together and build community here in New Mexico and beyond.”

For more information, visit [HTTPS://WWW.SFINTERNATIONALITFEST.ORG](https://www.sfindernationalitfest.org).



# WHAT'S GOING ON

## ALBUQUERQUE / Online

**MAY 4 OPENING, 3-5 PM**

### "NOTHING LEFT FOR ME"

*Maxwell Museum of Anthropology*

Federal Policy and the Photography of Milton Snow in Diné Bikéyah. Exhibition examines the impact of the Navajo Livestock Reduction Program on Diné communities and homelands in the 1930s. [JAC123@UNM.EDU](mailto:JAC123@UNM.EDU)

**MAY 11, 11 AM-3 PM**

### MULTICULTURAL ARTS FESTIVAL

*Singing Arrow Community Center (Four Hills area)*

Thirty artists, outdoor family activities, food trucks, community resource tables, performances. [CABQ.GOV/2024ARTSFEST](http://CABQ.GOV/2024ARTSFEST)

**THROUGH MAY 18**

### "GEOHAPTICS: SENSING CLIMATE"

*516 Arts, 516 Central Ave. SW*

Artists working on major environmental issues activate the senses through the beauty of art. Free at [516ARTS.ORG](http://516ARTS.ORG)

**MAY 31, 7:30 PM**

### ELIZA GILKYSON

*South Broadway Cultural Center*

Folk, roots, Americana with multi-instrumentalist Don Richmond; [HTTPS://AMPCONCERTS.ORG/TAG/ELIZAGILKYSON](https://ampconcerts.org/tag/elizagilkyson)

**JUNE 16-18**

### HEALTHY KIDS! HEALTHY FUTURES! CONFERENCE

*Sandia Resort and Casino*

"Hear me, Hear us: Engaging Youth Voice to Build Healthier Communities."

Presented by the Notah Begay Foundation. 505-867-0775, ext. 104, [SACHA@NB3F.ORG](mailto:SACHA@NB3F.ORG)

### JUNE 22 TEACHER TRAINING/CO-CREATION

#### OUR LAND TEACHING FELLOWSHIP

Workshop with PBS LearningMedia lays the groundwork for a cohort of leaders working with students on climate change issues in NM.

[HTTPS://WWW.NEWMEXICOPBS.ORG/WHAT-WE-DO/EDUCATION/](https://www.newmexicopbs.org/what-we-do/education/)

**SEPT. 20-22**

### LATINX GAMES FESTIVAL

*National Hispanic Cultural Center*

Video game industry event for Latinx game development. A platform for global opportunities within the industry. Panelists, breakout sessions.

**OCT. 27-29**

### GEAR UP NEW MEXICO CONFERENCE

*ABQ Convention Center*

Educators, administrators and advocates will focus on college and career readiness, guided by the theme: "Where Cultures Converge, Futures Flourish."

[WWW.GEARUPNEWMEXICO.ORG](http://WWW.GEARUPNEWMEXICO.ORG)

**THROUGH NOVEMBER**

### THE HEALING LAND: FINDING SACRED CONNECTION

#### THROUGH GARDENING

*Agri-Nature Center, Los Ranchos, N.M.*

Hands-on course for your home garden. [WWW.SCHOOLOFTHEDESERTGARDEN.COM/THE-HEALING-LAND](http://WWW.SCHOOLOFTHEDESERTGARDEN.COM/THE-HEALING-LAND)

**ONGOING, TUES.-SUN. 9 AM-5 PM**

### 'ONLY IN ALBUQUERQUE'

*Albuquerque Museum, 2000 Mountain Rd. NW*

Permanent exhibit told through four galleries: Spirited, Courageous, Resourceful and Innovative. Hundreds of the city's beloved artifacts are featured. \$3-\$6., Free Sun., 9 am-1 pm. [CABQ.GOV/ARTSCULTURE/ALBUQUERQUE-MUSEUM](http://CABQ.GOV/ARTSCULTURE/ALBUQUERQUE-MUSEUM)

**TUESDAY-SUNDAY, 9 AM-4 PM**

### INDIAN PUEBLO CULTURAL CENTER

*2401 12<sup>th</sup> St. NW*

"Gateway to the 19 Pueblos of N.M." Museum galleries, exhibits and restaurant.

Cultural dance program Sat., Sun. 11 am, 2 pm. Tickets \$10/\$8/\$7. 505-843-7270,

[WWW.INDIANPUEBLO.ORG](http://WWW.INDIANPUEBLO.ORG)

### NATIONAL HISPANIC CULTURAL CENTER VISUAL ARTS MUSEUM

*1701 4<sup>th</sup> St. SW (Barelas neighborhood)*

Explore exhibitions like Hecho en Nuevo México: Recent Acquisitions by NM Artists.

(Through Jan. 21.) First Sunday of every month free to NM residents. 505-383-4471,

[HTTPS://WWW.NHCCNM.ORG/VISIT/](https://www.nhccnm.org/visit/)

### NM MUSEUM OF NATURAL HISTORY

*1801 Mountain Rd. NW*

505-841-2800. [WWW.NMNATURALHISTORY.ORG](http://WWW.NMNATURALHISTORY.ORG)



SANTA FE CONSERVATION TRUST



# iVámonos!

SANTA FE WALKS

Explore Santa Fe's trails! Get some fresh air! Meet your community!

**30 Free Walks & Hikes from May through October**



Thank you Santa Fe Walking Collaborative!

NM Aging & Long-Term Services Dept.  
BBBS Mountain Region  
AmeriCorps Seniors Santa Fe RSVP  
NMDOH  
New Vistas  
City of Santa Fe  
Randall Davey Audubon Center  
La Familia Health



## MAY

**1 - Wednesday @ 5:30 PM**

Wellness Walk

*Acequia Trail from Larragoite Park to Railyard Park. Meet at 1464 Cristobal Colon*

**14 - Tuesday @ 6:00 PM**

Take a Walk on the South Side

*Southside Library to Arroyo Chamiso Trail Meet at 6599 Jaguar Dr*

**18 - Saturday @ 9 to 11 AM**

Vámonos Hike - Dale Ball Trails - City View Loop. Meet at Sierra del Norte Trailhead/ Hyde Park Rd

**23 - Thursday @ 5:30 PM** Find a New Path

*Villa Linda Park to Arroyo Chamiso Trail to GCCC. Meet at SF Place Mall/ Villa Linda Park*

**31 - Friday @ 10 AM**

Walk with our Elders

*Bicentennial/Alto Park to SF River Trail Meet at MEG Senior Center 1121 Alto St*

## JUNE

**4 - Tuesday @ 6:00 PM**

Take a Walk on the South Side

*Southside Library to Arroyo Chamiso Trail Meet at 6599 Jaguar Dr*

**12 - Wednesday @ 5:30 PM**

Wellness Walk

*Acequia Trail from Larragoite Park to Ashbaugh Park. Meet at 1464 Cristobal Colon*

**20 - Thursday @ 5:30 PM**

Find a New Path

*Rail Trail @ Rabbit Rd Trailhead Meet at 250 Rabbit Rd*

**22 - Saturday @ 9 AM to 11 AM**

Vámonos Hike - Take a Kid Hiking Day & Scavenger Hunt  
*La Tierra Trails. Meet at Frijoles TH at 712 Camino de los Montoyas*

**28 - Friday @ 10 AM**

Walk with our Elders

*Bicentennial/Alto Park to SF River Trail Meet at MEG Senior Center 1121 Alto St*

For more information and maps of the walks, visit:

[sfct.org/vamonos](http://sfct.org/vamonos)  
**(505) 989-7019**

**TEXT SFWALKS**

**TO 833-243-6033**

**FOR WALK REMINDERS**

## **SANTA FE / Online**

**MAY 2-5**

### **NATIVE FASHION WEEK**

*SF Community Convention Center*

Symposium, panel discussions, designer-focused fashion hub.

Tickets: [SWAIANATIVEFASHION.ORG](https://SWAIANATIVEFASHION.ORG)

**MAY 4, 10 AM-1 PM**

### **LOVE YOUR WATERSHED DAY**

*DeVargas Park*

Celebrate SF's watershed community. Music, educational booths, family-friendly

activities. [AMARA@SANTAFEWATERSHED.ORG](mailto:AMARA@SANTAFEWATERSHED.ORG)

**MAY 11, 9 AM-3 PM**

### **SF EXTENSION MASTER GARDENERS GARDEN FAIR**

*SF County Fairgrounds, 3229 Rodeo Rd.*

Back after a four-year pandemic hiatus. Learn about every aspect of gardening.

Lectures, demos, exhibits, music, food trucks, kids' corner, garden-related vendors.

Free. [HTTPS://SFEMG.ORG](https://SFEMG.ORG)

**MAY 11**

### **CANYON ROAD SPRING ART FESTIVAL**

[VISITCANYONROAD.COM/SPRINGARTFESTIVAL](https://VISITCANYONROAD.COM/SPRINGARTFESTIVAL)

**MAY 13, 5-6:30 PM**

### **WILDFIRE EXPERT PANEL PRESENTATION**

*2520 Cam. Entrada, Ste. B/Online*

Businesses and public safety officials will provide wildfire safety tips.

Reception: 4 pm. Santa Fe Homebuilders Association: [HTTPS://SFAHBA.COM](https://SFAHBA.COM)

**MAY 17, 2-5 PM**

### **52ND ANNUAL HERITAGE PRESERVATION AWARDS**

*Meem Auditorium, NM Museum of Indian Arts & Culture*

The NM Historic Preservation Division: [NMHISTORICPRESERVATION.ORG](https://NMHISTORICPRESERVATION.ORG)

**MAY 19-21**

### **SF INTERNATIONAL LITERARY FESTIVAL**

*SF Convention Center, 201 W. Marcy St.*

Thirty events. Tickets start at \$27.50. [SFINTERNATIONALLITFEST.ORG](https://SFINTERNATIONALLITFEST.ORG)

**MAY 23, 25, 7 PM**

**MAY 25, 26, 2 PM**

### **FLAMENCO FIESTA DE SANTA FE 2024**

*Teatro Paragnas, 3205 Calle Marie*

Compania Chuscales & Mina Fajardo. 505-424-1601, [WWW.TEATROPARAGUAS.ORG](https://WWW.TEATROPARAGUAS.ORG)

**MAY 24-26**

### **NATIVE TREASURES ART MARKET**

*SF Community Convention Center*

More than 150 Native American artists from across North America, selected by the

Museum of Indian Arts and Culture. Tickets: [MICA.EVENTBRITE.COM](https://MICA.EVENTBRITE.COM)

**JUNE 1-2**

### **SANTA FE SPRING FESTIVAL**

*El Rancho de las Golondrinas*

334 Los Pinos Rd., La Ciénega

Tickets: [GOLONDRINAS.ORG](https://GOLONDRINAS.ORG) and [HOLDMYTICKET.COM](https://HOLDMYTICKET.COM). 505-471-2261

**JUNE 3-AUG. 16, 9 AM-3 PM**

### **REUNITY FARM CAMP**

*1829 San Ysidro Crossing*

Immersive outdoor experience for children. Hands-on activities based on the

growing season. Games, snacks, stories. Registration: [WWW.REUNITYRESOURCES.COM/FARM-CAMP-2024.HTML](https://WWW.REUNITYRESOURCES.COM/FARM-CAMP-2024.HTML)

**JUNE 20-21**

### **2024 NEXT GENERATION WATER SUMMIT**

*New Mexico State Capitol / Online*

“Solutions for a Changing World.” The NGWS focuses on regional and national

water challenges. Introductory and advanced educational sessions. Early bird

pricing: \$199 in-person, \$79 virtual, free virtual for city and county residents. City

tours showcasing water efficiency projects. [www.NextGenerationWaterSummit.com](https://www.NextGenerationWaterSummit.com),

[AVEWATERSANTAFE.COM](https://AVEWATERSANTAFE.COM)

**JULY 11-14**

### **20TH ANNUAL INTL. FOLK ART MARKET**

*Railyard Park, 740 Cerrillos Rd.*

16 & under free; 7/14: Free community day. [HTTPS://FOLKARTMARKET.ORG](https://FOLKARTMARKET.ORG)

**AUG. 3, 12-4 PM**

### **INDIGENOUS COMMUNITY DAY**

*Ragle Park*

Native entertainment, dancers, music, food, nonprofit booths. Free.

[SFINDIANCENTER@GMAIL.COM](mailto:SFINDIANCENTER@GMAIL.COM)

**AUG. 16-18**

### **TRANSFORMATION AND HEALING CONFERENCE**

*Southwestern College & New Earth Institute, 3960 San Felipe Rd.*

“Community Building in Turbulent Times: Healing Collective Grief & Trauma”

Alternative and ancient pathways. Cutting-edge research and new evidence-based therapies.

505-795-0631, [KATELATIMER@SWC.EDU](mailto:KATELATIMER@SWC.EDU), [WWW.TANDH.ORG](https://WWW.TANDH.ORG)

**AUG. 23-25**

### **SANTA FE TRADFEST**

*Camp Stoney*

Grammy award-winners, local music heroes. Bluegrass, blues, jazz, traditional New Mexican

music, Native hoop dancers. Tickets: [SANTAFETRADFEST.ORG](https://SANTAFETRADFEST.ORG)

**SEPT. 13-15**

### **EARTH USA 2024**

*Scottish Rite Center*

12<sup>th</sup> International Conference on Architecture & Construction with Earthen Materials.

Podium presentations, poster sessions, speaker meet & greet, tours. Organized by Adobe in

Action. [WWW.EARTHUSA.ORG/](https://WWW.EARTHUSA.ORG/)

**MON.-FRI.**

### **POEH CULTURAL CENTER AND MUSEUM**

*78 Cities of Gold Rd., Pueblo of Pojoaque*

Di Wae Powa: They Came Back: Historical Pueblo pottery. The Why, group show of Native

artists. Nah Poeh Meng: core installation highlighting Pueblo artists and history.

505-455-5041

**MON.-SAT., 8 AM-4 PM**

### **RANDALL DAVEY AUDUBON CENTER & SANCTUARY**

*1800 Upper Canyon Rd.*

Free guided walks to see birds, Sat., 8:30-10 am. RSVP for Randall Davey House tours.

505-983-4609, [RANDALLDAVEY.AUDUBON.ORG](https://RANDALLDAVEY.AUDUBON.ORG)

**TUES., SAT., 8 AM-1 PM**

### **SANTA FE FARMERS' MARKET**

*Market Pavilion, 1607 Paseo de Peralta*

505-983-4098, [SANTAFEFARMERSMARKET.COM](https://SANTAFEFARMERSMARKET.COM)

**WEDS-FRI. THROUGH APRIL**

### **MUSEUM OF SPANISH COLONIAL ART**

*710 Camino Lejo, Museum Hill*

Generations and Imagination: What Lies Behind the Vision of Chimayó Weavers,

highlighting the shifting tradition through four generations of the Trujillo family's work. \$10

admission.

**WEDS. THROUGH MAY 1**

### **THE WRITING GENERATION SERIES**

Many NM writers are participating in online reading and writing events from SF

Community College and the Institute of American Indian Arts. Free. 505-428-1506,

Register: [SURVEYMONKEY.COM/R/WRITINGGENSPRING24](https://SURVEYMONKEY.COM/R/WRITINGGENSPRING24)

**WEDS-SAT., 10 AM-6 PM; FRI.-SAT., 10 AM-6:30 PM**

### **SANTA FE CHILDREN'S MUSEUM**

Interactive exhibits, play areas, weekly programs. Masks required for ages 2 and older.

\$10/\$8/\$7/\$3/one & under free. 505-989-8359, [SANTAFECHILDRENSMUSEUM.ORG](https://SANTAFECHILDRENSMUSEUM.ORG)

**WEDS-SUN.**

### **EL RANCHO DE LAS GOLONDRINAS**

*334 Los Pinos Rd., La Ciénega*

Living History Museum dedicated to the heritage and culture of 18<sup>th</sup>- and 19<sup>th</sup>-century

New Mexico. 505-471-2261, [GOLONDRINAS.ORG](https://GOLONDRINAS.ORG)

**FRIDAYS, 7 PM THROUGH APRIL 26**

### **SPRING LECTURES**

*Great Hall, St. John's College*

Guest lectures followed by discussions on subjects ranging from film to climate change and

technology to theater. Free. [SJC.EDU/SANTA-FE/EVENTS/LECTURES](https://SJC.EDU/SANTA-FE/EVENTS/LECTURES)

**IAIA MUSEUM OF CONTEMPORARY NATIVE ARTS**

*108 Cathedral Place*

“Womb of the Earth: Cosmivision of the Rainforest” through July 19. Closed Tuesdays.

\$5-\$10; under 16, Native and Indigenous peoples free. 888-922-4242, [IAIA.EDU/MOCNA](https://IAIA.EDU/MOCNA)

## INDIGENOUS WAYS FESTIVAL

*Railyard Park, 740 Cerrillos Rd.*

Performers include Navajo punk-rock duo Sihasin (May 3), comedian Mimi Gonzalez (June 8) and Tuscarora/Taino blues singer-songwriter Pura Fe (Aug. 16).

5–8 pm. Free. [INDIGENOUSWAYS.ORG](http://INDIGENOUSWAYS.ORG)

## MUSEUM OF INTERNATIONAL FOLK ART

*706 Cam. Lejo, Museum Hill*

“Protection: Adaptation and Resistance.” More than 45 artists explore themes of climate crisis, struggles for social justice, strengthening communities through ancestral knowledge and imagining a thriving future. Through April 7.

## NEW MEXICO HISTORY MUSEUM

*113 Lincoln Ave.*

The Lamy Branch of the Atchison, Topeka and Santa Fe Railroad model train; Palace Seen and Unseen: A Convergence of History and Archaeology, photos and artifacts; Telling N.M.: Stories from Then and Now. Closed Mondays. 505-476-5200, [NMHISTORYMUSEUM.ORG](http://NMHISTORYMUSEUM.ORG)

## SANTA FE HABITAT FOR HUMANITY

Seeking land, donated or for sale, to build affordable housing. Low-income homeowners help build homes and make mortgage payments to the nonprofit HFH. Property owners can qualify for 50% Affordable Housing tax credit through the NM Mortgage Finance Authority. 505-986-5880, ext. 109

## STATE MUSEUMS

Museum of International Folk Art (10 am–5 pm), Museum of Indian Arts and Culture (10 am–4 pm), N.M. History Museum (10 am–4:30 pm), N.M. Museum of Art (Tues.–Sun., 10 am–4 pm). [NEWMEXICOCULTURE.ORG/VISIT](http://NEWMEXICOCULTURE.ORG/VISIT)

## WHEELWRIGHT MUSEUM OF THE AMERICAN INDIAN

*704 Cam. Lejo, Museum Hill*

505-982-4636, [WHEELWRIGHT.ORG](http://WHEELWRIGHT.ORG). Closed Sundays and Mondays.

## YOUTHBUILD / YOUTHWORKS!

Paid training for Youth 16–24. Construction, Culinary, GED. 505-989-1855, [WWW.SANTAFEYOUTHWORKS.ORG/SANTA-FE-YOUTHBUILD/](http://WWW.SANTAFEYOUTHWORKS.ORG/SANTA-FE-YOUTHBUILD/)

## TAOS / Online

### THROUGH MAY 30

#### ART OF TIMELESS BEAUTY: THE NAVAJO CHILD’S BLANKET

*Taos Art Museum, Fechin House, 227 Paseo del Pueblo Norte*

26 examples follow the evolution. \$6–\$10, 575-758-2690, [TAOSARTMUSEUM.ORG](http://TAOSARTMUSEUM.ORG)

#### LA HACIENDA DE LOS MARTÍNEZ

*708 Hacienda Way*

Northern NM-style Spanish colonial “great house” built in 1804 by Severino Martínez. Open daily. [TAOSHISTORICMUSEUM.ORG](http://TAOSHISTORICMUSEUM.ORG)

#### MILLICENT ROGERS MUSEUM

*1504 Millicent Rogers Rd.*

Tuah-Tah/Taos Pueblo: Home, highlighting the pueblo’s culture and artistic achievements. Pop Chalee! Yippee Ki Yay! paintings. Open daily. [MILLIF4N65OY45E.ORG](http://MILLIF4N65OY45E.ORG)

## HERE & THERE / Online

### MAY 4, 10 AM–4 PM

#### FIBER FAIR

Bosque Redondo Memorial, Fort Sumner Historic Site, N.M.

Celebration of the history and legacy of Navajo Churro Sheep. Live demos and hands-on wool working activities. 505-946-7149, [CHRISTINA.CLAASSEN@DCA.NM.GOV](mailto:CHRISTINA.CLAASSEN@DCA.NM.GOV)

### MAY 11, 10 AM–4 PM

#### PUEBLO FIBER ARTS SHOW

Poeh Cultural Center, Pojoaque, N.M.

Weaving, embroidery, spinning, knitting, crochet, sewing, basketry and more. Presented by the NM Fiber Arts Guild, the Poeh Cultural Center and the School for Advanced Research. [POEHCENTER.ORG/FIBERARTS](http://POEHCENTER.ORG/FIBERARTS)

### MAY 13–15

#### MOUNTAIN WEST TRAILS CONFERENCE

Uintah Conference Center, Vernal, Utah

Eight states partner for this inaugural conference. #MWTTrailsConference

### MAY 17, 10 AM

#### BLESSING OF THE FIELDS

NM Farm & Ranch Heritage Museum, Las Cruces, N.M.

Procession with members of Tortugas Pueblo, blessing of animals, plants and the acequia. Free. 575-740-7475, [DESIRIE.LARA.NM.GOV](http://DESIRIE.LARA.NM.GOV)

## MAY 17 APPLICATION DEADLINE

### GRANTS FOR INDIGENOUS LANGUAGE PROGRAMS

For projects in Río Arriba, Taos and Santa Fe counties. Eligible organizations include tribal governments, tribal affiliated schools and programs to preserve, revitalize and promote Indigenous languages. Contact Steve Vigil, Northern Río Grande National Heritage Area: [INFO@RIOGRANDENHA.ORG](mailto:INFO@RIOGRANDENHA.ORG), [WWW.RIOGRANDENHA.ORG](http://WWW.RIOGRANDENHA.ORG)

### MAY 17, 12:30–4:30 PM

### MAY 18, 8:30 AM–12:30 PM

#### COLLABORATIVE VISIONS IN MORA, NM

Community focus groups will discuss a plan to build a Nueva Plaza in the region. 575-387-2031

### MAY 24–28

#### RIVERFEST 2024

*Farmington, N.M.*

Music, food, activities and entertainment along Animas River trails, from Berg Park to Animas Park. Free. River Reach Foundation. 505-716-4405, [HTTPS://FARMINGTONNM.ORG/EVENTS/RIVERFEST](https://FARMINGTONNM.ORG/EVENTS/RIVERFEST)

### JUNE 18, NOON EDT APPLICATION DEADLINE

#### LOANS & GRANTS TO IMPROVE HOMES FOR FARMWORKERS

Funding up to \$40,000 per unit for farmers, nonprofits, local governments and tribes to repair or modify properties that have received financing from USDA for farmworkers.

[HTTPS://WWW.GOVINFO.GOV/CONTENT/PKG/FR-2024-03-18/PDF/2024-05505.PDF](https://WWW.GOVINFO.GOV/CONTENT/PKG/FR-2024-03-18/PDF/2024-05505.PDF)

### JUNE 22–23

#### HERITAGE FESTIVAL OF ARTS

*Museum of Northern Arizona, Flagstaff*

Indigenous artists of the Colorado Plateau. [HTTPS://LNKD.IN/GIVUZDWI](https://LNKD.IN/GIVUZDWI)

### JULY 19–20

#### PERFORMANCE PREFAB INSTALLER TRAINING

*B.Public Prefab, 312 Bibb Industrial Dr., Las Vegas, N.M.*

Training required to bid, perform inspections and install prefab Passive-House qualifying structural building components. \$1,500. Registration deadline: 6/19. 505-577-4295, [INFO@BPUBLICPREFAB.COM](mailto:INFO@BPUBLICPREFAB.COM), [HTTPS://BPUBLICPREFAB.COM/](https://BPUBLICPREFAB.COM/)

### JULY 21–28

#### NAFWS NATIONAL SUMMER YOUTH PRACTICUM

*Northern Colorado*

Focused on natural resource professions, tribal fish and wildlife management, professional development and college preparedness. March 15, 6 pm: informational webinar. Native American Fish and Wildlife Society. 303-466-1725, ext. 4.

[NAFWS.ORG/YOUTH-EARLY-PROFESSIONAL/SUMMER-YOUTH-PRACTICUM/](http://NAFWS.ORG/YOUTH-EARLY-PROFESSIONAL/SUMMER-YOUTH-PRACTICUM/)

### OCT. 6–9

#### ASLA CONFERENCE ON LANDSCAPE ARCHITECTURE

*Washington, D.C.*

American Society of Landscape Architects. [WWW.ASLACONFERENCE.COM/INDEX.ASP](http://WWW.ASLACONFERENCE.COM/INDEX.ASP)

### THROUGH SUMMER 2024

#### ARCHAEOLOGISTS IN GLEN CANYON (EXHIBIT)

*Museum of Northern Arizona, Flagstaff*

### THIRD THURS. MONTHLY, 6:30 PM

#### AGUA ES VIDA: DO YOUR PART WORKSHOP AND SPEAKERS SERIES

*Online*

Water experts and community leaders discuss solutions that can be implemented to create a sustainable and resilient water future. Presented by Water Advocates for NM and the Middle Río Grande. [WWW.WATERADVOCATES.ORG](http://WWW.WATERADVOCATES.ORG)

### THURS–SUN, 10 AM–4 PM

#### BOSQUE REDONDO MEMORIAL

*Fort Sumner Historic Site, Fort Sumner, N.M.*

Exhibit, 30 years in the making, tells the story of “The Long Walk” and the Bosque Redondo. \$7, children 16 and younger, free. N.M. residents with ID free first Sun. each month. [NMHISTORICSITES.ORG/BOSQUE-REDONDO](http://NMHISTORICSITES.ORG/BOSQUE-REDONDO)

#### EARTH KNACK SURVIVAL AND OUTDOOR LIVING SKILLS

*Crestone, Colo. and elsewhere*

Fiber arts, blacksmithing, hide tanning, Rocky Mtn. Survival, Edible, medicinal plants, internships and more. [HTTPS://WWW.EARTHKNACK.COM](https://WWW.EARTHKNACK.COM)

#### SUSTAINABLE BUILDING TAX CREDITS

NM residents can apply for tax credits to make homes and businesses more energy efficient. There are extra incentives for upgrades that reduce energy use and lower utility costs in affordable housing or homes occupied by low-income residents.

# NEXT GENERATION WATER SUMMIT

# SOLUTIONS IN A CHANGING WORLD

MAYOR'S RECEPTION & AWARDS | LIVE & ON-DEMAND SESSIONS | WORKSHOPS | CLASSES | TOURS & MORE!

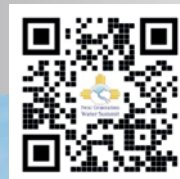
**This annual event brings together the building and development community, water reuse professionals, and water policymakers to share best practices, and to learn about innovative techniques that can be used to comply with water conservation restrictions spreading across the southwest.**



**JUNE 20 - 21**

**Santa Fe, NM**

Join us for a series of community tours on June 22nd at various locations to learn about water conservation, rain gardens, grey water systems, and more!



**[NextGenerationWaterSummit.com](http://NextGenerationWaterSummit.com)**

**\*Virtual attendance is FREE for Santa Fe city and county community members but you still need to register.**