

# STEM IN THE BURQUE

*Career Pathway-Focused Exhibition for ABQ Teens and Families*

ABCWUA Board Meeting  
3/22/2023

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Director of Project Management, Explora

Funding provided by:



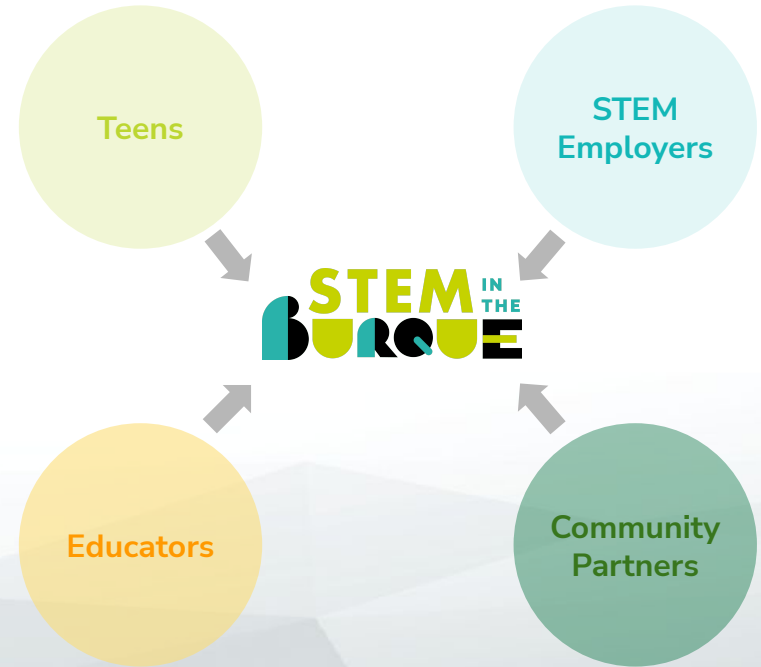
# What is *STEM in the Burque*?

- An immersive exhibition highlighting STEM activities in Albuquerque, co-created by Explora, local teens, and ABCWUA and other STEM employers
- Aims to: 1) increase awareness of the STEM research and practices taking place in Albuquerque; 2) empower youth to solve tomorrow's problems through STEM; and 3) develop local teens into future STEM leaders
- Features 14 brand-new, hands-on exhibits, including **7 based on water resource management themes**, along with STEM professional spotlights, a makerspace, tech lab, mentor corners, multipurpose classrooms, a teen lounge, and various programs, all housed in Explora's new teen center, X Studio



# How Did *STEM in the Burque* Develop?

- Listening to the community:
  - 25+ community conversations
  - 6 listening sessions with teens, STEM employers, and local educators
  - 12 “empathy interviews” with teens
- Active participation by teens, STEM employers and professionals, and educators throughout design, prototyping, and fabrication.
  - Frequent feedback sessions with teens and educators
  - Regular meetings with community partners and subject-matter experts
- Continuous effort to gain and maintain buy-in from teens, employers, and staff
- Utilization of external exhibit developers to support in-house team and an external evaluator



# How Did Water Exhibits Develop?

Kick-off Meeting in Jul 2019  
Design Charrettes in Nov & Dec 2019

## Three Themes

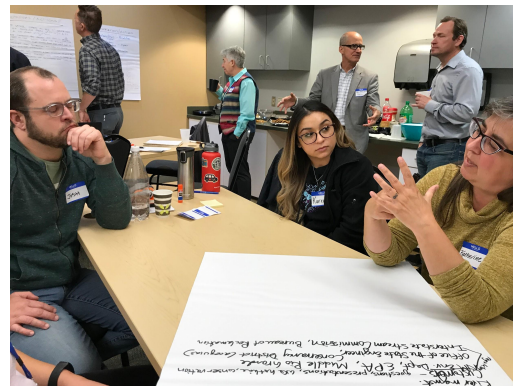
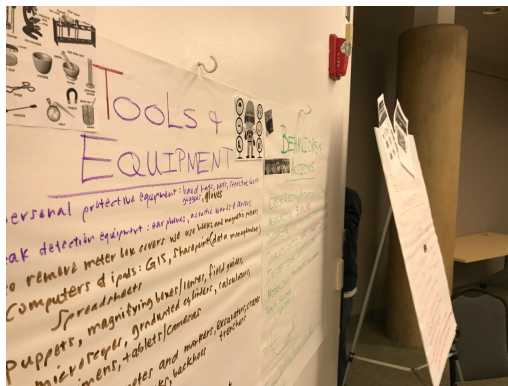
1. Water resources and distribution
2. Water treatment
3. Conservation and stewardship

## Seven Focus Areas

1. Aquifer Storage and Recovery (ASR)
2. Reuse
3. Watershed protection
4. Water storage
5. Groundwater and surface water protection
6. Water treatment and distribution
7. Wastewater collection and treatment

## Key Narrative

Everyone has a role to play in the work of ABCWUA, and NM's water treatment and resource management - "What's yours?"





# Water 2120 Game *Designed by Electric Playhouse*

## Water Resource Managers Unite!

Problem-solve real world scenarios and experience the world of water resource management in this interactive game.

Based on [Water 2120](#), the Water Authority's 100-year water plan, the game challenges you to optimize the use of existing water supplies rather than seeking new sources, and create your own sustainable 100-year plan while learning about conservation, our water supply, and the career pathways available.

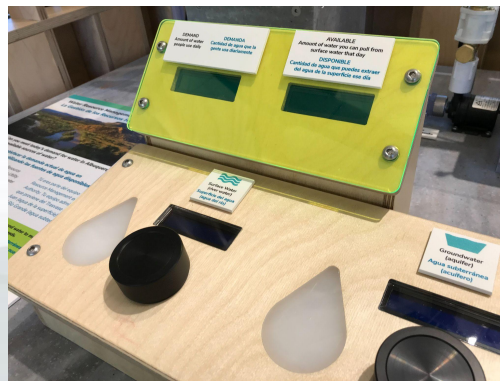


# Water Resource Distribution

Do you like a challenge? Try a 150-mile real-world engineering puzzle!

Practice your problem-solving skills by balancing all the parts of this sample system to predict and provide the daily water supply for Albuquerque.

Imagine you are a team member at the Water Authority. Your job is to figure out how much water will be needed on a daily basis from sources including the Rio Grande and groundwater.





# Water Bar *Treatment/Filtration/Biodegradation*

Clean and safe drinking water is important for our health and wellbeing.

See how the Water Authority transform ground water, river water, and sewage water into drinking water.



# Water Conservation

## Do you like water? We do too!

There's a lot you can do today to launch a career in water conservation. Your personal choices have positive ripple effects! See how your everyday decisions can make a difference in reducing and reusing water.

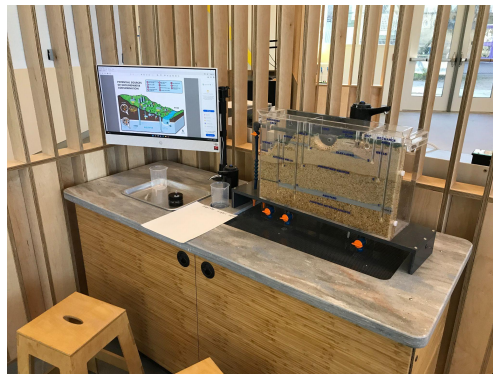




# Aquifer

Did you know you are standing on top of a little known but totally essential part of our lives, which we all need to protect?

Meet the Rio Grande Aquifer system. Spanning 70,000 square miles underground along the Rio Grande Valley, it collects and protects a portion of our drinking water for us.





# Refugium

What do you call a microenvironment designed to be the perfect home for an endangered species? A refugium!

In Los Lunas, NM, scientists from the Office of the State Engineer, Interstate Stream Commission are maintaining a refugium for the Rio Grande Silvery Minnow, one of the most endangered fish species in the country. See how a refugium works.



# ABCWUA Staff Showcase

## STEM PROS

### Diane Agnew

My Story | Mi Historia

"Slow down, and take more time to pursue the adventures that are presented."

"¡Pa' el ritmo y tómate más tiempo para ir detrás de las aventuras que se presentan!"

**Environmental Manager**  
Albuquerque Bernalillo County  
Water Utility Authority

I discovered the earth sciences my freshman year of college. I was introduced to two fascinating subjects, and each day we worked together to help explain our natural world. My mentor, a hydrology professor, introduced me to the field, and my path became clear. I entered a Master's program and spent three years studying how to improve water quality here and around. Now, working in career water companies, I get to use my expertise and knowledge to keep our water safe for drink, being and also the future, which is incredibly rewarding.

**Gerente Ambiental**  
Albuquerque Bernalillo County  
Water Utility Authority

Descubrí las ciencias de la tierra en mi primer año de mis estudios universitarios. Me presentaron dos áreas fascinantes, la física y las matemáticas, y cada día trabajamos juntas para ayudar a explicar nuestro mundo natural. Se me introdujo al profesor de hidrología, me motivó en el camino y pude ver mi camino de forma clara. Ingresé a un programa de maestría y pasé tres años estudiando cómo mejorar la calidad del agua aquí y en el extranjero. Ahora, al trabajar en la protección de fuentes de agua, puedo usar mi habilidad y conocimiento para mantener nuestro agua segura para beber hoy y en el futuro, lo cual es increíblemente gratificante.



## STEM PROS

### Rochelle L. N. Larson

My Story | Mi Historia

"No matter how challenging and demanding the world is, always believe in yourself, be open to help, lean on friends and family, and be better to yourself."

"Por muy difícil y exigente que sea el mundo, cree siempre en ti mismo, mantente abierto a la ayuda, apóyate en tu familia y amigos y sé mejor contigo mismo."

**Principal Engineer**  
Albuquerque Bernalillo County  
Water Utility Authority

I became interested in engineering in high school, since I did well in math and science, and my brother is an engineer, too. I worked hard for good grades and overcame challenges along the way by leaning on my support system, my internal strengths, and my Diné culture and traditions. I successfully earned my Bachelors in Mechanical Engineering and Masters in Environmental Engineering, and now I manage water projects at the Water Utility Authority, directly impacting daily life for people in Albuquerque. I love that my career combines the outdoors and engineering!

**Ingeniera Principal**  
Albuquerque Bernalillo County  
Water Utility Authority

Me interesó la ingeniería en la preparatoria, ya que me iba bien en matemáticas y ciencias, y mi hermano también es ingeniero. Me esforcé por sacar buenas notas y superé los retos que se me presentaron en el camino apoyándome en mi sistema de apoyo, en mis puntos fuertes internos y en mi cultura y tradiciones Diné. Me licencié en Ingeniería Mecánica y obtuve un Máster en Ingeniería Medioambiental, y ahora dirijo proyectos de agua en la Autoridad de Servicios de Agua, lo que repercute directamente en la vida diaria de los habitantes de Albuquerque. Me encanta que mi carrera combine las actividades al aire libre con la ingeniería!



## STEM PROS

### Bianca Nuñez

My Story | Mi Historia

"It's important to have goals and a plan, but being flexible will benefit you greatly."

"Es importante tener metas y un plan, pero ser flexible te beneficiará mucho."

**IT Quality Assurance Manager**  
Albuquerque Bernalillo County  
Water Utility Authority

Growing up, computers and information technology (IT) were in front of my mind. I wanted to work in the fashion industry in a major city. I studied marketing in college and eventually was hired as a business analyst with a large clothing company. Learning data and systems came easily to me, even though I didn't have a programming background. Before I realized it, I was a systems analyst, a completely different position than I had ever imagined. IT knowledge is useful in any organization, covering doors to different fields. Now, I use my ability to quickly learn new action systems to help the Water Authority keep water flowing to our customers every day!

**Gerente de Garantía de Calidad de Soporte Técnico**  
Albuquerque Bernalillo County  
Water Utility Authority

Al crecer, los computadores y la tecnología de la información (TI) estaban siempre de mi mente, quería trabajar en la industria de la moda en una gran ciudad. Estudié mercadotecnia en la universidad y finalmente me contrataron como analista de negocios en una gran empresa de ropa. Aprender sobre datos y sistemas me resultó fácil, aunque no tenía conocimientos de programación. Antes de que me diera cuenta, era analista de sistemas, un puesto completamente diferente al que había imaginado. Los conocimientos de informática son útiles para cualquier organización, ya que abren la puerta a diferentes campos. Ahora utilizo mi capacidad de aprender y analizar rápidamente los sistemas para ayudar a la Autoridad del Agua a mantener el flujo de agua para nuestros clientes todos los días.



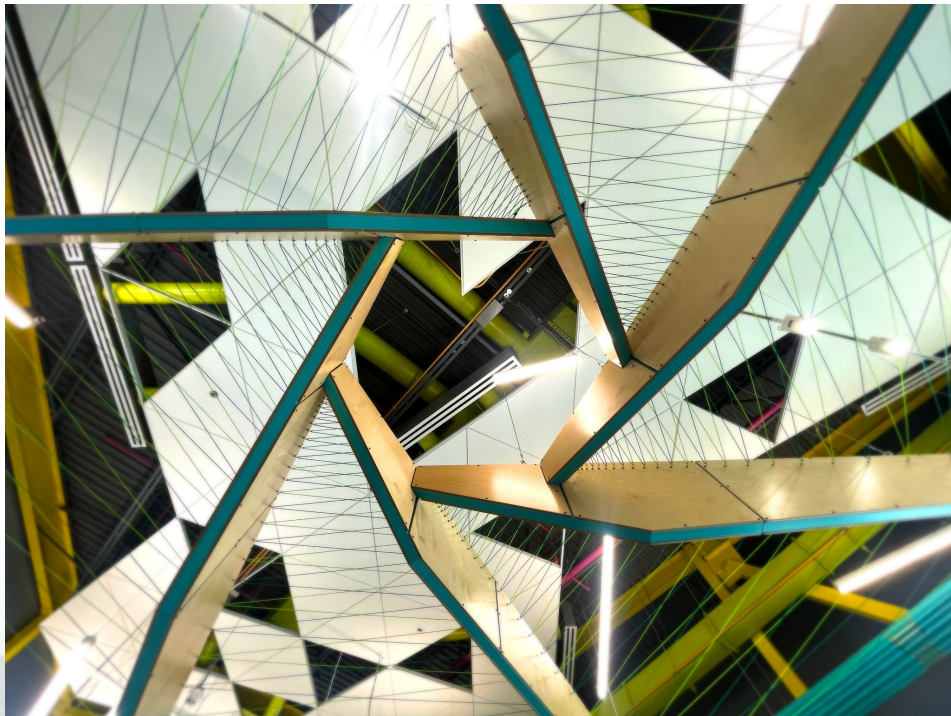
# What's Next?

## Exhibit Upkeep & Improvements - 5 years

- Initial evaluation by staff and teens within first two months of opening
- Periodic evaluations
- Equipment and software upgrades

## Programming Ideas

- “Meet a STEM professional” - Weekend family programs with staff from ABCWUA
- Staff-led water system simulations
- Field trips to the water treatment plant
- Weekend family classes on water conservation at home
- One-on-one career mentorship with ABCWUA staff
- Externship opportunities for Explora’s Career Pathways interns



# Questions?