

# University of Texas at El Paso



ONE WATER  
CLUSTER



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one water  
cluster



ONE WATER CLUSTER



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# One Water Cluster

## Structure

Co-directors: Alex Mayer  
Deana Pennington

Funding: \$20,000 seed grant

IDRB Space:

- 1 IDR Suite
- 0.5 Dry Lab
- 0.5 Wet Lab

Current membership: 36 faculty  
and staff

## Represented Departments

Biological Sciences  
Chemistry and Biochemistry  
Civil Engineering  
Computer Science  
Geological Sciences  
Health Sciences  
Industrial, Manufacturing & Systems Engineering  
Mathematical Sciences  
Metallurgical, Materials & Biomedical Engineering  
Music  
Sociology & Anthropology  
Teacher Education  
Theater and Dance

## Represented Centers

Center for Environmental  
Resource Management

Center for Inland  
Desalination Systems

Center for Inter-American &  
Border Studies

Rubin Center for the Visual  
Arts

TAMU Agrilife El Paso

# One Water Cluster: Vision and objectives

## Vision:

Conduct basic and applied research on water sustainability

• biophysical processes

• technologies

• social & economic processes & impacts

• data & information integration

• cultural production

• community engagement

• education

## Objectives

- co-locate students and staff in IDRIB
- develop a community of practice in water sustainability research and education
- nurture the development of interdisciplinary grant proposals
- develop an integrated, collaborative, and participatory team structure
- engage with potential research partners at other institutions
- develop research questions with UTEP and external stakeholders

# One Water Cluster: Research questions

- **Water infrastructure**
  - What is the optimal match between water supply options and water user needs?
- **Water technology innovation**
  - What advances in water treatment and water conservation technologies are needed to manage future water supplies and demand?
- **Risks to water availability**
  - What is the future risk to water availability from disruptive forces, e.g. climate change, migration, trade, and technological change?
- **Water consumers**
  - What are perceptions of water users of risks to water availability? How do perceptions influence water user & institutional decision-making?
- **Water governance**
  - What governance practices will lead to trans-sector, trans-boundary collaboration in response to increasing water risk?
- **Water and the arts**
  - How do the arts affect personal connections to water, engage communities in water decision-making, build bridges across water stakeholders, and inspire new thinking about water solutions?

# One Water Cluster: Proposed activities

- Identify and recruit new One Water researchers
- Organize and conduct a One Water<sub>x</sub> series
- Design and implement a campus, web and social media presence
- Design and offer a one-credit practicum course on interdisciplinary research

# One Water Cluster: Recent activities

- **Proposals submitted/in process**

- Lone Star Prize
- NSF-IUCRC Produced water technology
- NSF-RET Water science & engineering & computational thinking
- NSF-DRK12 Data-driven decision-making to improve STEM learning
- NSF-DISES Salinity-water-energy nexus
- NSF-DISES Groundwater depletion
- NSF-DISES Watershed sustainability & forest conservation incentives
- NSF-SRN-RN Water livability in the border region
- USDA Sustainable Agricultural Systems

- **Proposals awarded**

- NSF-CZO CO<sub>2</sub> fluxes, ecohydrology, and nutrient availability in the carbonate-dominated dryland

- **Institutions engaged**

- Columbia University
- Colorado State University
- NMSU
- Rice University
- TAMU College Station
- TAMU San Antonio
- Texas Water Trade
- UACJ
- UNM
- UC San Diego
- UT Permian Basin
- UT Rio Grande Valley
- UT San Antonio

- **We Are Water Arts Collaboration**

- **Soft path to water/Decentralized systems**

- **World Water Day 3/22/21**

- **Web presence**