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ASU Julie Ann Wrigley
Global Futures Laboratory™
Arizona State University

Global Futures: **Now**



“The people are the only ones capable of transforming society.” – Rigoberta Menchu

Arizonans have been inundated with media coverage regarding the state's water supplies—and the potential lack thereof. [Historic Colorado River deal not enough to stave off long-term crisis, experts say](#) read a headline in The Guardian. Then, the New York Times: [Arizona Limits Construction Around Phoenix as Its Water Supply Dwindles](#) Earlier this year, the unincorporated Rio Verde Foothills was the poster

child for the state's dwindling water supplies. Water is the central issue in *Arizona v. Navajo Nation*, which was heard by the U.S. Supreme Court this session with the court ruling 5-4 to reverse an 1886 treaty that said the U.S owes an "affirmative duty" to secure water for the Navajo Nation. Indigenous nations have long struggled with access to water: for example, **one-third of Navajo families haul water to their homes** on a daily basis.

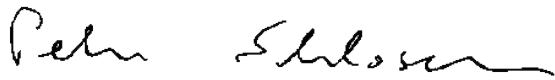
Across the Southwest, we see decreasing water resources and looming changes in allocation. We expect those pressures to continue to grow, as the predominant drivers—climate change and population growth—continue to heavily impact availability, cost and distribution of this critical resource. The knock-on effects of these two drivers are daunting. Rising temperatures will place further pressure on the water supply systems. The threat of wildfires across the arid region will continue to swell, making some places and broadly damaging air quality (an effect we recently saw with the **hundreds of fires in Canada** darkening the skies in the northeastern region of the U.S.). And continued depletion of water supplies could lead to migration caused by environmental stressors.

We focus on Arizona's water issues because of its proximity to us—it is our home place. And yet, it is important to remember that we are not alone in our confrontations with increased water scarcity. Many other places in the world are facing water issues, either in terms of quantity—some too little, some too much—while others struggle with quality. Droughts, floods and storms triggered **98% of the 32.6 million internal displacements from disasters in 2022**. In a particularly notable example, **Indonesia is moving its capital** to the larger island of Borneo. The current capital, Jakarta, is also facing water problems due to the concurrent challenges of climate change and population growth. All around it, the seas are rising, while the capital is rapidly sinking due to aquifer depletion. Yet rising oceans are not the only climate concern for secure and safe water supply: new research combining climate data with satellite imagery and hydrological models demonstrates the strain placed on the world's largest lakes—over the past 30 years. **Fifty-three percent of these lakes** show significant declines in volume.

The actions we take here in Arizona and at the Julie Ann Wrigley Global Futures Laboratory not only target the U.S. Southwest but have the potential to be used at other locations across the world. One prominent example of GFL's efforts in solving the water problems in the Southwest is the Arizona Water Innovation Initiative, a multiyear effort to secure a future access to water supplies supported by the State of Arizona and the Virginia G. Piper Charitable Trust. The university, in partnership with industrial, municipal, agricultural, tribal and international partners, will accelerate and

implement research and technologies for water conservation, desalination, infrastructure, efficiency and reuse. The successes of this initiative could be replicated in other parts of the world.

Understanding these challenges and exploring and co-developing solutions to them remain central to our mandate and are the reason the Global Futures Laboratory exists.



Peter Schlosser
Vice President and Vice Provost of Global Futures

News



Jane Goodall Institute, ASU to expand partnership

Jane Goodall and ASU President Michael Crow recently signed a letter of intent to expand their partnership and focus on research and discovery for the planet and its inhabitants to scale up equitable and accessible education for youths and emerging

leaders. Through the expanded partnership, the two entities will explore ways to expand the Roots and Shoots network, generate additional education pathways related to the program's content and involve ASU's education and conservation researchers.

[Read more](#)

Research: Senior Global Futures Scientist maps farm drainage networks to conserve water

As water conservation efforts increase worldwide, [Ruijie Zeng](#), a senior Global Futures Scientist and an assistant professor of civil, environmental and sustainable engineering in the School of Sustainable Engineering and the Built Environment, recognized the need for improved mapping of agricultural drainage networks and natural rivers to upscale water management practices on farms.



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Research: Well setbacks limit California's oil supply with larger health benefits and employment losses than excise and carbon taxes

[Danae Hernandez-Cortes](#), an assistant professor in the School for the Future of Innovation in Society and the School of Sustainability, was among 14 authors listed in

a recent study exploring setback restrictions on new oil wells. The study found that larger setbacks than currently proposed or additional supply-side policies are needed in order for California to meet its green gas emissions targets.

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Research: A stakeholder-engaged approach to anticipating forest disturbance impacts in the Colorado River Basin under climate change

Accelerated climate change and forest disturbances such as wildfire, mortality and thinning, are anticipated to significantly impact water resources in the Colorado River Basin. The need for actionable information from hydrologic research is growing rapidly. A team of researchers, including authors affiliated with GFL, designed a stakeholder engagement and modeling process to assess the impact of these changes on the Colorado River Basin hydrology.



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ASU partnership earns \$18M through USDA NextGen food systems grant

The NextGen grant aims to directly support future



leaders of our food systems. Nearly \$5 million will be directed to ASU's School of Sustainability students via scholarship support and paid internships over five years to study sustainable food systems.

[Read more](#)

ASU chosen to lead clean energy project in Fiji

The U.S. Trade and Development Agency has announced the launch of a new project in Fiji to help advance that country's plan to provide electricity for all rural residents and to generate all power from renewable sources by 2030. The \$1.5 million initiative is called Accelerating Solar Mini-Grid Deployment in Fiji, and the initial feasibility study will be led by the [Laboratory for Energy and Power Solutions \(LEAPS\)](#). [Nathan Johnson](#), director of LEAPS, an associate professor of engineering at ASU and a senior global futures scientist, said their work enables identification of the best configuration and funding for each mini grid deployment.



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ASU establishes 'Āko'ako'a, to preserve and restore vitality to Hawaii's coral reefs and the health



of its coastlines

With a group of core partners, including [Greg Asner](#), director of ASU's Center for Global Discovery and Conservation Science, Arizona State University is creating a new \$25 million collaboration to fuse state-of-the-art science programs with the leadership and cultural knowledge of Hawaii's community partners to enable coastal and reef sustainability for generations to come.

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Andrew Maynard is key collaborator on World Economic Forum report

Since 2012, the World Economic Forum's flagship report, Top 10 Emerging Technologies, has identified technologies that are poised to positively impact society over the next three to five years. The report, released this week, includes a number of technological approaches to sustainability and health care, all innovations that [Maynard](#) says require broad, transdisciplinary approaches, something ASU and the Global Futures Laboratory is especially equipped to do.



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Q&A: Susanne Neuer says futures of all life, including desert dwellers, are tied to oceans



ASU News spoke to [Susanne Neuer](#), director of the School of Ocean Futures, about her love for the ocean, the future of ocean research in the face of climate change and why a renewed focus on ocean health is important for everyone — even if you live in the desert.

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Q&A: What is the current and future state of space law?

Space in the next decade will encompass a wide range of endeavors — from science missions to better understand Earth to technology development to commercial space stations and ticketed rides. ASU News consulted with [Timiebi Aganaba](#), assistant professor in the School for the Future of Innovation in Society, to discuss law, space and society.



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Decision Theater enters 3rd era of decision-making support with new leadership

Decision Theater is now formally a part of the Julie Ann Wrigley Global Futures Laboratory and will be led by [Manfred Laubichler](#), director of the School of Complex Adaptive Systems. This evolution of Decision Theater marks its third iteration and includes an updated

mission statement: to transform decision-making for local and global challenges through the co-creation of data-based tools, methods and experiences that engineer curiosity, explore possible futures and empower societies to address complex issues.

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ASU water expert Dave White shares insights on Colorado River deal

[Dave White](#), director of the Global Institute of Sustainability and Innovation, characterized the proposal as a positive step in the right direction. In an interview with The Hill, White warned against complacency — environmental changes tend to outpace policy.



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First School of Ocean Futures class puts ASU students on forefront of solutions, research, conservation

As human activity contributes to overfishing, pollution and changes in water temperatures and acidity levels, scientists at Arizona State University's School of Ocean Futures are combining their efforts in Arizona, Hawai'i and Bermuda to address the threats facing our planet's largest biome. With the School of Ocean Future's inaugural course, SEA 194: Ocean Futures, students

can now prepare to join their efforts. This course will be taught remotely by assistant professor and Global Futures Scientist [Amy Maas](#).

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Narrative Storytelling Initiative engages students in conversations about urgent water issues

The Narrative Storytelling Initiative received support provided by ASU's Impact Water – Arizona program, courtesy of Virginia G. Piper Charitable Trust and part of the Arizona Water Innovation Initiative, to help develop the Water Narratives and Societal Change course. [Steven Beschloss](#), creator and instructor of Water Narratives and Societal Change, said the course attempts to develop knowledge and skill in multiple storytelling modes to reflect and explore the various ways people consume information, learn and may be influenced.

[Read more](#)



Futurecast

Edition 4 | Spring 2023

In this issue of Futurecast, we explore a number of topics including the current state of global stability, how ASU is driving water conservation through innovation, the vulnerabilities of our energy systems and how human health and heat are interrelated.

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Global Futures Viewbook

We must rediscover our planet and our relationship with it.

What does this mean, exactly? For the faculty, students, researchers and global partners of the Julie Ann Wrigley Global Futures Laboratory, it means a commitment to urgently exploring pathways to impactful solutions and decisions that address the challenges we have caused through resource extraction and thoughtless consumption as part of a relentless pursuit of “progress.”

We believe better is possible.

[Learn more](#)



#1 in the U.S. for global impact

—Times Higher Education, 2021

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PO Box 877805 Tempe AZ 85287-7805, USA