

# December 2023

**ASU** Julie Ann Wrigley  
Global Futures Laboratory™  
Arizona State University

## Global Futures: **Now**



## **“Good intentions won't halve emissions this decade or save lives right now.” UN Climate Change Executive Secretary Simon Stiell**

Another United Nations Climate Change Conference (COP28) has passed and the consensus on what was accomplished is still being debated.

Between November 30 and December 12, more than 80,000 attendees arrived in Dubai, United Arab Emirates. The Julie Ann Wrigley Global Futures Laboratory hosted a pavilion in the Blue Zone, with delegates, project partners and guests delivering presentations and moderating conversations on topics ranging from the [role of climate youth activists](#) to [women leaders in climate action](#). We also showcased the [10 New Insights in Climate Science](#) and the [10 Must-haves](#) that have resulted from the Global Futures Conferences of 2022 and 2023.

Throughout the conference, representatives from nearly 200 nations convened on how to keep the global temperature limit of 1.5°C within reach and ultimately agreed to transition away from fossil fuel use.

The culminating text from these negotiations is a partial win for proponents of climate action. More than 100 countries lobbied for a strong statement that would signal to investors and policy-makers a desire to phase out the use of fossil fuels - oil, gas and coal. For the first time language addressing this demand was included in the final conference agreement. The move towards transitioning away from fossil fuels as the primary source of energy reflects the belief that climate change is a global concern and that concrete solutions to mitigate the effects of warming temperatures must be achieved on a global scale.

Yet, while many hailed the agreement on transitioning away from fossil fuels as a landmark deal, there is also considerable concern over the softening of some of the language after the initial draft. Representatives from island nations expressed frustration at being left out of the conversation when the final deal was reached, calling the outcome inequitable as it is their communities who are disproportionately affected by climate change caused by the world's top producers of greenhouse gas emissions. The final agreement calls for a “transition away” from fossil fuels, to triple renewable energy capacity and double the rate of energy efficiency improvements by 2030. Only time – which is running out quickly – will tell if this agreement will achieve the intended goals.

Another major development at this year's conference was the announcement that [the loss and damage fund had been established](#). This fund is intended to support developing countries in preparing communities for damage caused by climate change. Pledges amounting to \$700million were made by developed countries, including the United Arab Emirates, Germany, Italy, France, and the United States. This amount, however, is only a fraction of the economic and non-economic losses developing nations experience every year. To put it in perspective, the estimated amount needed to support vulnerable nations bearing the brunt of global extremes is greater than [\\$400billion a year and rising](#). Few countries have released details of the nature and timing of their pledged funds, resulting in a missed opportunity to design a concrete solution. The slow pace of committing resources to the fund coupled with the delay in establishing the fund speaks to the struggle by developed nations to address the impact experienced around the world as a result of climate change.

Given the extremes of 2023 – including the Maui wildfires, the floods in Eastern Libya and record-breaking heatwaves such as what we experienced in Phoenix – securing agreements with strong language, actionable solutions and concrete timelines is the only way to address the global climate crisis effectively. The scientific case for moving toward clean and renewable energy sources has been established and solutions to the climate crisis are also available and are waiting to be scaled up. Such solutions include the Global Futures Laboratory's efforts around direct air capture and clean hydrogen.

While this year's COP made progress in curbing global warming, it will not keep us from passing the 1.5°C target. The question is no longer if we can halt global warming at 1.5°C but how large the overshoot will be and for how long we will be in an overshoot phase. What cannot be denied about the conference is [its power to bring people together to elevate the conversation on climate change](#). This is why the Global Futures Laboratory must continue to participate in conferences such as COP so that our expertise and knowledge are part of the critical discourse about the future of our planet's life-supporting systems and all life that depends on them.



Peter Schlosser



## Global Futures Laboratory at COP28

The 28th convening of the United Nations Conference of Parties of the UNFCCC, or COP28, ran from Nov. 30 - Dec. 12 in Dubai, United Arab Emirates, with the Julie Ann Wrigley Global Futures Laboratory hosting a pavilion in the Blue Zone. We invite you to watch the recorded series of presentations and conversations around addressing the challenges human activity has brought upon our planetary systems and learn more about the delegation of ASU representatives on the ground in Dubai.

[Learn more](#)



## 40-year study charts oceans in peril

A [recent paper](#) from the team at the Bermuda Institute of Ocean Sciences was published in the current issue of the journal *Frontiers in Marine Science*. The paper provides the longest sustained time series in the global ocean, tracking critical ocean trends over four decades. The comprehensive study shows a rise in surface ocean temperature of about 1 degree Celsius (1.80 F). The ocean acidity and salinity have also risen by 30% and 0.136 parts per thousand, respectively, according to the findings.

[Read more](#)

## Paper explores future limits of survival, livability in extreme heat conditions

[Jennifer Vanos](#), a senior Global Futures scientist and associate professor in the School of Sustainability is the lead author of a paper recently published in *Nature Communications*: “A physiological approach



for assessing human survivability and liveability to heat in a changing climate,” which explores the temperatures at which humans can survive.

[Read more](#)

## Study models strategies to alleviate extreme heat in specific U.S. cities through the end of the century

New research published in *Nature Cities* examines the potential benefits of combining heat adaptation strategies — such as implementing cool roofs and planting street trees — with mitigation strategies to lessen heat exposure across major U.S. cities.

[Matei Georgescu](#), lead author of the paper and a Senior Global Futures Scientist, also identifies the regions in which these strategies could best benefit future populations.

[Read more](#)



**Research: Alleviating water**



## scarcity by optimizing crop mixes

Yufei Zoe Ao, a postdoctoral research scholar in the School of Sustainability, was an author in a recent study published in *Nature Water*. The study, which is currently subscription-access-only, demonstrates the interconnectedness of crop production and freshwater availability and offers a more water-secure path forward.

[Read more](#)

## Arizona Water Innovation Initiative research featured in “ACS Applied Polymer Materials”

A new research paper from the Global Center for Water Technology, part of the Arizona Water Innovation Initiative, unveils a patented approach leveraging "light" rather than traditional chemicals for water treatment.



[Read the report](#)

## Fishery management study may have implications for public policy decisions

Ten years of coral reef research efforts are now on display in a recent paper published in “*Proceedings of the Royal Society B*.” [Mary Donovan](#), a Senior



Global Futures Scientist, said coral reefs are on the front lines of climate change. The paper investigates local management of herbivore fisheries that can improve reef resilience.

[Read more](#)

## News

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### Assistant Research Professor Jesse Senko named recipient of \$100,000 Theodore Roosevelt Genius Prize

[Jesse Senko](#) received a \$100,000 Theodore Roosevelt Genius Prize from the U.S. Fish and Wildlife Service for his development of a solar-powered light that doubles as a buoy to reduce bycatch of endangered sea turtles, sharks and marine mammals while maintaining target fish catch. The innovation is lifesaving for the marine animals it protects — and immediately implementable for fishers using their existing fishing gear.





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## Former SRP leader brings utility, sustainability expertise to Global Futures Laboratory

Through an impactful career at Salt River Project developing and implementing new sustainability programs, [Kelly Barr](#) is uniquely positioned to understand Arizona's relationship with water and energy services. Barr now joins the Global Futures Laboratory where she will serve as the associate vice president and chief alliance officer.

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## College of Global Futures partners with game-based learning platform Kahoot

ASU has partnered with Kahoot! to develop a new collection of quizzes on the game-based learning platform, inspired by the College of Global Futures' four schools. Topics cover the impacts of rising temperatures on the human body, coral reef conservation, innovations in wearable technology and the importance of rainforests for our global future.



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## Senior Global Futures Scientists contribute to the Ten Across Los Angeles Summit

ASU's Ten Across [Los Angeles Summit: The Future is Here](#), ran from Dec. 5-7 at the ASU California Center and the Los Angeles City Club. The summit brought together more than 180 experts in science, policy and leadership to discuss the country's most critical, climate-related issues of our time. Senior Global Futures Scientists [Dave White](#) and [David Hondula](#) were among the experts who contributed to the event.

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## New NSF funded collaborative Rhizaria research project underway

A new three-year National Science Foundation-funded study aims to look at Rhizaria, a group of single-celled marine organisms, in nutrient-depleted marine environments. [Leocadio Blanco Bercial](#), an assistant professor in the School of Ocean Futures, is the study's principal investigator.



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## Senior Global Futures Scientists offers insight into ongoing Arizona Public Service rate case

[Lauren Keeler](#), a professor in the School for the Future of Innovation in Society, co-wrote commentary for the AZ Mirror with [Amanda Ormond](#), professor and executive director of the Just Energy Transition Center. Their essay asks, “If you had to pay an extra few cents per month to help your rural Arizona neighbors, would you?”

[Read more](#)

## Global Futures affiliated programs, centers and initiatives thrive at 2023 President's Awards

The Swette Center for Sustainable Food Systems, Global Locust Initiative, Sustainable Purchasing Research Initiative, Sustainability Analyst Certificate Program and YouthMappers at ASU were awarded President’s Awards for their demonstrated excellence in advancing the university’s mission.



[Read more](#)



## Meet our Outstanding Graduates

A new cohort of future leaders and changemakers walked across the stage at ASU Gammage on Dec. 14 to receive their diplomas. Of this group, five were nominated as Outstanding Graduates:

- Don Christoff, Innovation in Society B.A. (SFIS)
- Claudia Lumbi, Sustainability B.A. (SOS)
- Jamie Winterton, Human and Social Dimensions of Science and Technology Ph.D. (SFIS)
- Jake Swanson, Sustainability M.S. (SOS)
- Robin Berry, Biomimicry M.S. (SCAS)

[Robin Berry](#), [Don Christoff](#) and [Jamie Winterton](#) were featured in the ASU News wrap-up of notable graduates across campus.

[Read the full list](#)



## Futurecast

### Edition 5 | Fall 2023

In this issue of Futurecast, we explore a number of topics including electrification, a conversation with Arizona's State Climatologist Erinanne Saffell, the deployment of humanitarian aid in the face of global challenges and a museum exhibition that explores what Arizona may look like for the next generation.

[Read now](#)

## 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](#)

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**#1 in the U.S.  
for global impact**

**–Times Higher Education, 2021**

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Be sure to receive this newsletter as well as other journals and updates including our biannual journal, Futurecast.

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