BOLD IDEAS: RESEARCH AT THE UNIVERSITY OF ARIZONA

Studying sustainability in a living laboratory

By Barbara Sparks

An ocean...a mangrove wetlands...a tropical rainforest...a savannah grassland... Where can you find all of these biomes and more under one roof – lodged in a facility that allows scientists to manipulate environmental variables in ways that are simply not possible anywhere else on Earth?

The answer is Biosphere 2 – the University of Arizona’s gleaming 3.14-acre facility in the Arizona desert. With 7.2 million cubic feet of sealed glass and 6,500 windows, Biosphere 2 provides UA scientists with a unique living laboratory to study some of the planet’s most critical issues – including landscape evolution, water, climate, energy, and sustainability.

The sealed facility empowers researchers to move beyond simply observing natural phenomena to controlling them. By manipulating variables such as temperature, precipitation, humidity and more, UA scientists explore environmental interrelationships and the impact of change within the ecosystem.

Biosphere 2 brings together a powerful, multidisciplinary team with expertise in hydrology, geology, geochemistry, ecology, biology, physics, engineering, and atmospheric sciences to tackle the problem of sustaining a healthy planet.

Through robust outreach and education programs, it challenges and engages the next generation of environmental stewards – from grade school through graduate school.

No one knows for sure what tomorrow holds for Biosphere 1, our Planet Earth – but researchers at Biosphere 2 are working to make the planet’s future more sustainable and healthier for us all. Edie Jarolim is a travel journalist who lives in Tucson, Arizona.