Biosphere 2 Behind the Scenes

University Communications
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Each day, before the first visitors line up at the Biosphere 2 ticket counter, before conference speakers set up their PowerPoint presentations in the conference rooms, and before the first gaggle of middle schoolers pours through the entrance gate, UA employees have already been busy behind the scenes.

In recognition of the announcement [1] that the University has received a $30 million gift to support Biosphere 2, LQP spoke with three of the living laboratory’s employees about what it takes to keep a miniature Earth running while ensuring that visitors experience the facility as what it is ? one of 50 "wonders of the world [2]."

Rainmaker, Snake Wrangler, MacGyver-on-Call: Stephen Littler

Littler, who has been with Biosphere 2 for 25 years, is in charge of the operations and maintenance department. Littler and his small team of stationary engineers ? Charles Gates, Bob Willing and Matt Stickroth ? take care of miles of piping and climate controls that keep the facility running. They monitor energy usage and are always on the ready to fix anything on a moment’s notice. Biosphere 2 occupies about 40 acres of land, with more than 3 acres enclosed under a giant dome of glass and steel.
We perform instrumentation operations, throw in some landscaping, a little bit of maintenance," Littler says. "We have a lot of expertise in external defibrillator administration, and are the first responders for medical emergencies and security issues.

At Biosphere 2's Energy Center, we have three very large boilers and two generators— one that runs on natural gas and the other is diesel. We can choose which side to use based on our load. If something happens in the electrical system, we can be the first responders and know what to do. If the power lines come live again and are stable. If we had to, we could trim the site load and run on one generator alone.

Climate control is paramount at Biosphere 2, because with all that glass and the solar gain, things get warm very fast. The interchange between the air and the water is a huge challenge. In the summer, the interpretive specialists take their tour groups into that area, talk really quick and get out.

On a day-to-day basis, we monitor the ocean habitat, the marshland and our two streams—one in the rainforest and one in the desert. There are check valves and electronics, so we have to make sure the equipment is performing correctly and efficiently.

Oh, and when the need arises, we relocate venomous snakes and reptiles from our public trails and walkways, primarily for the safety of our visitors.

Event Organizer, Hospitality Queen, All-Around Problem Solver: Kimberly Land

Land, who has been with Biosphere 2 since 2011, is the coordinator of event operations. She oversees a team of nine, handling every single detail from start to finish. "You can imagine you have a hundred guests in the Conference Center. That's where the Conference Center encompasses meeting rooms of various sizes and 103 bedrooms, distributed across 28 cozy casitas.

"We host a variety of UA-sponsored as well as private-sector events. We do really well with conferences up to 120 guests. We help with logistics, room assignments, food and beverages, and anything else that's needed. We make sure the rooms are cleaned and ready to occupy upon arrival.

"Biosphere 2 lends itself so well to events, workshops, retreats and conferences. We know we are a bit off the beaten path, but there is a road going up there. You can connect over the scenic views of the Santa Catalina mountains, which is very conducive to collaboration and productivity.

"I enjoy the property, the beauty around it, and I get to work with some truly amazing team members who share the same passion of Biosphere 2 as I do. In a sense, it's a big place— but it's a small place, too. Everyone works really well together.

"My number one goal is to ensure a great experience and to deliver the best customer service possible for all of our visitors and guests."

Coral Whisperer, K-12 Educator, Ruler Over 10,000 Hermit Crabs: Katie Morgan

As Biosphere 2's program coordinator for marine science and outreach, Morgan manages the ocean habitat system, designed as a flourishing coral reef "ecosystem in a bottle" during the closed experiments at Biosphere 2.

"We are working on how we can rehabilitate the ocean in order to do coral reef research that can't be done anywhere else. We have the advantages of being able to change the water temperature, the light, the chemistry, the pressure. We can heat the ocean, we can change its chemistry and study the effects.

"Right now, we are in the process of restoring proper salinity. That has been quite a process. The ocean has around 35 parts per thousand of salt in it, and that is the salinity we are working towards. We are doing it step by step. This is important because we can't control the salinity in the closed systems.

"The second part of my job is outreach. I work under Kevin Bonine and help with our K-12 programs. We get about 7,000 kids a year, from grade school through high school. We also do field trips to K-12 schools and do some type of water-related activity to ensure that their event is successful. We make sure the rooms are cleaned and ready to occupy upon arrival.

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