Tumamoc...Then and Now

Take a View of Tumamoc Hill in History
by Reporter Ian Britanik, Manzanita Elementary

Tumamoc Hill has deep roots in Arizona’s history, and these deep roots are filled with rich history and scientific discoveries! In April I got the privilege of going behind the scenes at Tumamoc Hill with Dr. Owen Davis, a Professor and director of the Palynology Department at the University of Arizona. Palynology is the study of pollen and spores. Dr. Davis is also the senior researcher at Tumamoc Hill and he has been there since 1982. During my visit I learned about the history of Tumamoc Hill. Around 2500 BC the first Tohono O’odham people settled on Tumamoc hill and built a huge wall around their village made from volcanic rock. About 1050 years later in 1450 BC, the Tohono O’odham people started to move away from living on Tumamoc, but they had a spiritual connection to Tumamoc for generations later. When they moved away they left behind several artifacts that you can still see on Tumamoc hill today, like kivas, outlines of houses, and rocks that had been used as grinding stones.

From the 1700’s through the 1800’s the city of Tucson developed and flourished around Tumamoc. In 1903, Andrew Carnegie, one of the richest people at the time, and his team at the Carnegie Institute, chose Tumamoc Hill to build a botanical laboratory to study how plants tolerate the desert heat and dryness. In 1905, a botanist named Effie Spalding completed one of the first research papers done on Tumamoc Hill. This paper showed how a saguaro expanded and contracted depending on water availability, using its internal water storage. In 1940 Carnegie sold Tumamoc to the forest service for only one dollar, but the president of the Carnegie Institute Dr. Vannever Bush, wanted the facility to be maintained and serviced as a demonstration area of natural conditions. From 1940–60 the forest service continued to maintain Tumamoc Hill.

In the late 1960s, the Forest Service sold Tumamoc to the UofA, which promised to collect more data and construct more buildings for scientific data study. Today, the UofA still uses Tumamoc as a scientific research site. With the technology available today the scientists that work on Tumamoc are able to do things that seem totally unreal. Dr. Jen Johnson, one of the awesome researchers on the Hill from the U of A, is measuring the isotopic composition of water in our Tucson air. Isotopic composition is the measure of isotopes in the water. The isotopic composition for the water samples she collects with a busy machine on the hill is like a tag showing where that water came from on earth! This helps with understanding weather patterns and tells where the storms that fill our atmosphere come from. How cool is that?

To learn more about Tumamoc Hill go to avodah13.org.

Tumamoc Is More Than Just a Hill
by Reporter Aidan Frye
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Every week, many people take the walk up Tumamoc hill for exercise and for fun. You can hike Tumamoc weekdays from 5 pm to 7am or any time on weekends. Tumamoc is located across from St. Mary’s hospital and next to “A” Mountain. About half way up or 2663 ft above sea level, you will walk through the U of A research area. This area is made up of 3 buildings: the Carnegie House, Atmospheric Studies building, and the Snake Lab. Tours of the buildings are by scheduled appointment only.

Carnegie House, funded by Andrew Carnegie in the early 1900’s, has lots of pictures of plants and animals found on Tumamoc and historical photos of the site. It is the administration building which houses a library where meetings and classes are held.

Our tour guide was Owen Davis, a UofA professor who studies Palynology, the study of pollen and plant fossils. He showed us a 130-year-old saguaro just outside the Carnegie House. (There are old pictures to prove its age). It is so old, it has lost its spines, which do not grow back. Davis has studied the saguaro for years.

Jen Johnson was another person who showed us around. Jen is a UofA research associate who studies the atmosphere and rain to find the common point between different storms. She does some of this research out of the Atmospheric Studies building. Johnson operates a machine that takes samples of rainwater, and heats them up until they become water vapor. That water vapor is then analyzed and compared to the current atmosphere.

Jen Johnson checks the rainwater collected.

There is a 20,000 FPS (frame per second) camera that is run by the UofA physics lab, so they can study ground to cloud lightning. Ground to cloud lightning is caused when cloud to ground lightning strikes, and the area is charged with plasma. Another spot in that same building marks where gravity was first studied in the southwestern United States! The person who measured gravity comes to the spot every once in a while, to measure it again.

The three most common types of rattlesnakes on Tumamoc are: the Diamondback, Blacktail and Tiger-Snake. If you see one of these on a hike, be aware and give them space. In the Snake Lab snakes are tagged with a radio transmitter so their movement can be monitored. Some tags, naturally, end up being retrieved from coyote poop! Lucky tour goers may get a chance to hear the rattles from recently captured snakes.

Finally, while you hike you may find a relic such as arrowheads, spearpoints, other weapon(s), and pottery. If you do find these, please leave them exactly where they are to preserve them! This will allow future generations to enjoy the history and uniqueness of Tumamoc Hill.