ACHIEVEMENTS

Analysis of genetic material from the remains of two ice-age infants discovered in Alaska has revealed connections to two ancient lineages of Native Americans, according to a paper published in the Proceedings of the National Academy of Sciences. UAF archaeologist Ben Potter and University of Utah geneticists Dennis O’Rourke and Justin Tackney deciphered ancient mitochondrial DNA from two infants buried in the Tanana Valley 11,500 years ago. They found that the infants had different mothers and descended from two distinct lineages not previously identified in the North.

Alaska fires release more carbon than trees absorb, according to a new analysis. The research team plugged their data into a computer model developed by co-authors Hélène Genet and A. David McGuire, colleagues at UAF and U.S. Geological Survey. They found that more frequent forest fires have turned Alaska’s Yukon Flats into a net exporter of carbon to the atmosphere. This is worrisome, researchers said, because Arctic and sub-Arctic boreal forests like those of the Yukon Flats contain roughly one-third of the Earth’s terrestrial carbon stores. The research is reported in the journal Nature Climate Change.

IARC researcher Igor Polyakov has been awarded more than $3 million by the National Oceanic and Atmospheric Administration for research on changes in the Arctic Ocean.

Ocean acidification from atmospheric carbon dioxide is expected to rapidly change the Southern Ocean’s chemistry during the next few decades and may threaten marine life, according to a study published in the journal Nature Climate Change. The onset of harmful conditions will be too abrupt and the duration of these events too long for some organisms to adapt. UAF researcher Claudine Hauri and colleagues from the University of Hawaii at Manoa explored how the uptake of anthropogenic carbon dioxide and the resulting ocean acidification will affect the Southern Ocean during the next century.

WHAT’S NEXT

UAF expects to contract with College Utilities Corp. to provide treated drinking water to the campus by the end of 2015. Until the College Utilities water becomes available to campus, UAF will continue to operate the central carbon filtration system for the campus drinking water. After connecting to College Utilities, UAF will monitor the drinking water quality on campus.

The Arctic Council’s Senior Arctic Officials meeting will take place at UAF March 15-17. The meeting will occur in conjunction with Arctic Science Summit Week 2016. The Arctic Council is a forum to promote collaboration and coordination on Arctic issues among the eight Arctic countries and their indigenous communities. Member countries include Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the United States. The United States assumed the chair of the council in April 2015 for two years.
Associate Professor Denise Thorsen works with electrical engineering graduate student Morgan Johnson on a prototype of the Alaska Research CubeSat.

Students designed and built the cubesat, which was launched into orbit Oct. 8 from Vandenberg Air Force Base in California.

The project was the culmination of an Alaska Space Grant Program project five years in the making. During that time, 36 students worked on the cubesat, with collaboration between the College of Engineering and Mines and the Geophysical Institute.

The Oct. 8 launch put ARC-1 in an elliptical orbit between 310 and 500 miles above Earth. At last check, ground stations had not yet picked up a broadcast signal from the cubesat.

Photos, clockwise from left

Students walk across campus on a sunny first day of classes on the Fairbanks campus with the unfinished engineering facility in the background. UAF Photo by JR Ancheta.

Veterinary medicine major Chris Clement checks the heartbeat of a reindeer during a class outing to UAF’s Large Animal Research Station.

A disc jockey entertains the crowd during the Starvation Gulch bonfires Sept. 26 in the Nenana parking lot. Students lit the first fall bonfire at UAF in 1923, and the event has since become a university tradition.

Cameron Gackstetter of Fairbanks claims the $10,000 grand prize in the 2015 Arctic Innovation Competition’s main division at the award ceremony in Wood Center on Oct. 17. Gackstetter won for creating the ThawHead, a portable, 40-pound apparatus that melts ice in a container or work area and then quickly removes the water and any debris.

The UAF School of Management coordinates the competition with help from numerous business sponsors. UAF Photo by JR Ancheta.