

A Solid Grounding

Last summer Alaska Upward Bound students took to the air, thanks to EPSCoR support of an unmanned aerial vehicle (UAV)-based educational program. This year they came back down to the ground.

Upward Bound students from five rural Alaskan high schools spent six weeks on the UAF campus this summer learning about quantum geographic information systems (QGIS), which they used to georeference UAV images of greater Fairbanks.

“We’ve taught them about QGIS, at the same time we’ve taken them outside, taught them about mapping, taught them about geotagging, taught them how to use GPSes,” said instructor Patrick Steckman. “They did georeferencing as well, they talked about how to make a professional-looking map product.”

The QGIS class had six Upward Bound students, who come from the communities of Bethel, Chefnak, Nikiski, Seward and Shishmaref. A dozen other students took part in UAV training as part of Alaska EPSCoR’s “Modern Blanket Toss” educational program. Students combined to gather and georeference aerial imagery of local Fairbanks spots, including Chena Lakes, the Dog Musher’s Hall, and the Ken Kunkel soccer fields, then to stitch together some basic aerial mosaics. Steckman wants to further the process with future students. “What I’m hoping to do, hopefully next summer, is for students to actually take the

images, turn them into a mosaic, and then georeference that mosaic.”

The idea behind the UAV and QGIS programs is to excite students about science, technology, engineering and math careers through training in UAVs and associated technologies. “The main goal is for them to take this information, learn from it, use it to have an impact on their community, and hopefully, in this process, they realize this is something really cool to get a degree in,” Steckman noted.

As part of the Modern Blanket Toss program, during the school year students will use hexacopter UAVs and GIS as the basis for projects to help their towns and villages. Tasks will range from studying river methane emissions to charting hazardous ice conditions, summer flood routes, and storm erosion.

A map of the UAF West Ridge created by an Upward Bound student.

they went back, they could make those final products to present to their communities,” noted Christine Butcher, another QGIS instructor. “So the ones that we made were just purely for them to go through the whole process.”



Upward Bound student Steve Nash works on a mapping exercise on the UAF campus.

Photo by Christine Butcher

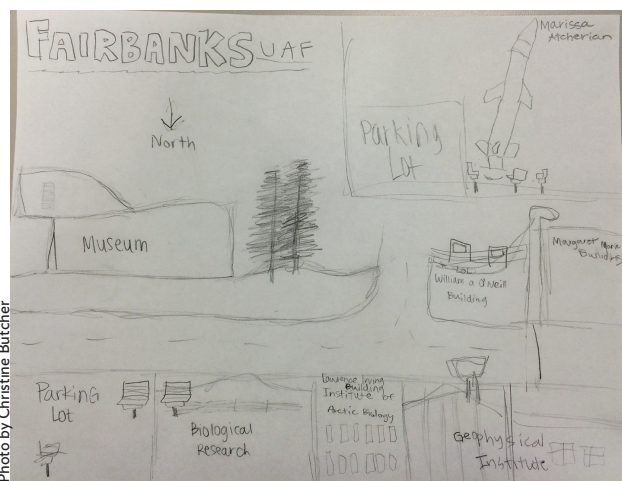


Photo by Christine Butcher



Alaska EPSCoR is funded through NSF awards #OIA-1208927 & #IIA-1348413 & the State of Alaska

