In the Spotlight: Property Search and Building Plans Underway for Permanent USF Field School Facility

Following nearly two years of planning and preparation, early 2017 saw the official fundraising campaign kickoff to build a permanent USF Field School facility near Mackay, Idaho (click HERE for announcement). With the USF School of Geosciences and the Geology Alumni Society leading the charge, and with the support of USF Foundation and the College of Arts and Sciences, the campaign quickly raised the initial funds necessary for the purchase of the property upon which the facility would be constructed.

In Summer 2017, USF Field School faculty and staff began the property search, evaluating in earnest several properties in the Mackay area. Though prepared to make an offer on one such property, faculty paused the search when the property itself was removed from the market by the owner. Presently, faculty are spending the winter months realigning their search criteria based upon the prior summer’s search experience, and will re-initiate the search in Spring 2018 when snows in Idaho recede.

At the same time, 2017 saw the continuation of the development plan for a phased-approach to the Field School facility construction. Phase 1 will see the grand opening of the facility with full plumbing and electricity, secure interior storage facilities for equipment, and an interior vehicle storage bay that will double as teaching/lab space during the field season. During Phase 1, lodging will be camp-style for students and faculty/staff, with shelters for outdoor meals and activities. Phase 2 construction will include bunkhouse-style lodgings for students and expanded teaching/storage facilities.

Fundraising for facility construction is anticipated through Summer 2019, and will include a $150,000 match from the College of Arts and Sciences. Pending fundraising and construction milestones, opening of the facility is tentatively planned for Summer 2021.

If you would like more information about the USF Geosciences Field Station Campaign or to make a gift, please contact Director of Development Kelly Addington at kaddington@usf.edu or (813) 974-5764.
From the Editor:

When I was a grad student, the days between Christmas and New Year’s were always my favorite. The rush of the fall semester and sleigh-ride into the holiday season was over. Nothing was immediately due, and few people were around to get anything done anyway. A feeling of peace and calm, like a still evening on the buttery waters of Tampa Bay, would settle in as soon as I turned onto I-75 on my way back to town. There, I’d spend the next few days de-cluttering, decompressing, catching up on those things I’d had no time for in months prior, thereby easing my way into the upcoming semester.

A decade later, that picture doesn’t look much different. I’m no longer ruled by the academic calendar and my living conditions have markedly improved, but I still roll out of bed in those quiet few days, brew up a latte, get the fireplace going for the pets (they’re such wusses this time of year), cue up some music and settle myself in front of the laptop. This morning as I sort through the content for this year’s newsletter edition, however, I find that established state of peace and calm punctuated by feelings that were hard to come by this year---inspiration and joy.

I won’t mince words, 2017 was a tumultuous and trying year for us all—but you didn’t have to look very hard amid any of the chaotic events to find beautifully positive moments which would make the heart of the greenest Grinch grow several sizes larger. As I poured through the material for this issue---status reports for the field school facility, students’ experiences, notes from faculty and hundreds of photos---I was reminded that it is these elements of progress, of joy, of caring, and the expression of love for what we do which serve as lighthouses. They guide us away from the negativity, heal our tired selves, and inspire us to cast lights of our own to guide others.

Happy New Year to everyone in our USF Geosciences family, and cheers to a bright 2018!

-- Dorien McGee, Ph.D., Class of 2010

Did you know…?
Facts from the USF Field School

- The USF Field School will celebrate it’s 15th Anniversary this summer, following it’s inaugural session in 2004.

- The 2017 Field School session saw its highest-ever student attendance and faculty/staff participation rate.

- The planned USF Field School Facility sets a precedent for public Florida universities--no other university has purchased property out-of-state for field research, teaching, or any other purpose.

- USF College of Engineering is the lead consultant for the facility plans and drawings.

- USF Field School is taught in five modules of two weeks each: Coastal Processes, Hydrogeology, Structural Mapping, Geophysics, and Volcanology. Majors are required to complete three sections, but may take up to all five.

- Three of the five USF Field School modules require long-distance travel and lodging (Structural Mapping, Geophysics, and Volcanology). Hydrogeology and Coastal Processes modules are taught in-state, taking advantage of Florida’s unique teaching environment, and lessening the financial burden for students.

- For most geology majors, the USF Field School will be their first opportunity to observe tectonic-scale geology in-person. For a few, it will be the first time they have ever traveled out-of-state.

- In his 2017 Fall Assembly address, USF College of Arts & Sciences Dean Eric Eisenberg cited the USF Geology Field School as one of the truly innovative programs fostering student success at USF.
From the Volcanology Field School Module – A Student’s Introduction to Mapping

-- Dr. Chuck Connor

Do you remember making your first geologic map? Odds are you were a bit out of your depth. Possibly you were dropped off in a field area and asked to come back at the end of the day with meaningful contacts drawn on a base map. Most of us remember wandering around the field area on the first day of mapping, trying to determine our location, trying to identify map lithologies, and trying to figure where exactly to draw those geologic contacts. It can feel a bit like learning to swim by being tossed into a roiling ocean! While such an experience may be a rite of passage for geologists, there is no reason students need to plunge into the deep-end of geologic mapping given all of the innovative techniques and tools available today. In fact, we find that easing students into the mapping experience helps students learn about mapping faster, gives them a better experience, and makes them better mappers.

The volcano field module is designed to create a great experience for students who are taking their first steps in geologic mapping. We want USF students to love making geologic observations, and to love building their observations into useful maps. We want them to take pride in their skills, appreciate the skills of their peers and future colleagues, and use these skills to create value for their future employers. So, we structure the volcano mapping course as a series of stepping-stones to introduce and build mapping skills. Students acquire those skills, and see some cool volcanic rocks along the way.

We run the two-week volcano mapping module in Idaho, led by various USF faculty including Sylvain Charbonnier, Aurelie Germa, and Chuck and Laura Connor. Here, students encounter a Quaternary landscape with tuff rings, lava domes, scoria cones and tholeiitic lava flows, all sliced by young normal faults. This beautiful landscape tells a story of geologic upheaval, and students learn to decipher this history by reading the topography and by studying the rocks.

Did you know that the “flunk out” course for geology majors around 1900 was Landscape Illustration? That course has entirely disappeared from curricula in the face of advancing science, but geologists must continue to be just as skilled as our professional “ancestors” at reading the landscape. At the outset of the volcano mapping module we spend two days mapping in the Blackfoot Reservoir area, working on our skills as a group and using the dramatic topography, illuminated by the contour lines on our base maps, to discover the complexities of the volcanic history on the area. This field area provides a great introduction to the geology of the West, and to deciphering its geologic history with careful observations.

The “flag map” is the next major exercise in the volcano module, or a map constructed using a piece of blank paper, a Brunton compass, and several flags erected in the field area to sight-on. The map is created by plotting
the positions of the flags on a blank base map, then “shooting” the azimuths of flags to determine position and to draw geologic contacts. Although very few professional geologists today would use this technique, flag maps are wonderful ways for students to learn about map relations, how to find themselves on a map with a compass, and how to build a map from scratch. Students create flag maps of one square kilometer in the Challis formation, a tilted and faulted sequence of Tertiary volcaniclastic rocks. This exercise is an important part of the volcano mapping module because it is a confidence-builder—it proves to students they have the ability to construct a pretty good map by relying on their own skills. It is fantastic to see students gain confidence in their mapping abilities as they work step-by-step from a blank sheet of paper to a detailed map.

After the flag map exercise, we introduce more modern technology—GPS, laser rangefinders and the like—to map larger areas more accurately. Not surprisingly, many USF students have trouble with topography and topographic maps—they simply do not have much prior experience with steep hills in Florida! To get everyone on the same page, we created an exercise in which groups of students construct their own topographic base maps using lasers and GPS. Nothing seems to work better than drawing contour lines to create your own base map, in the field, where you can look at the topography and critically evaluate your own map-making skills. The students then superimpose geologic contacts onto their base maps, and in the process, reaffirm some fundamental concepts about the relationships between geologic contacts and topography. These exercises introduce mapping skills that are built upon in later field camp modules, such as Structural Mapping and Geophysics.

Later in the volcano module, students are introduced to Yellowstone caldera, the volcanoes of the Eastern Snake River Plain, and the Craters of the Moon. Here, they have the opportunity to make volcanic hazard assessments for communities living on the Snake River Plain. In these hazard assessments, our students use their observations of volcanism and computer simulations of volcanic processes to estimate volcanic hazards—likelihood of lava flow inundation, tephra fallout, and pyroclastic surges—for specific communities. Students learn to understand the strengths and weaknesses of computer models, how these models must be calibrated by geologic observations, and how they are used to solve geologic problems. That is a skill not emphasized in traditional field mapping classes, but one that is essential for success in today’s professional environment. We hope that USF students look back on the volcano field module as a stepping-stone to professional success, and a time when they learned that it is fun to solve tricky geological problems.
Straight from the Bull’s Mouth
USF Geology students share their own thoughts from the 2017 field season

“Field camp allowed me to learn new information, apply previous knowledge and experience, and help other students learn vital field skills. A significant part of field camp for me was helping my fellow students learn how to operate in a field environment and read maps. Being an Army veteran, I have more field and map experience than the average student and I put that to use during field camp. I was able to teach good practices and techniques that only come with experience. My medical training also proved useful for the variety of injuries that occur in the field as I was able to treat them and prevent further injury.

USF’s geology field camps offer students invaluable experience and teaches them how to operate in a field environment. It provides a learning opportunity that a classroom never could. The best way to study the Earth is to go outside and experience it for yourself.”

-- Bradford Mack, USF Geology Undergraduate and recipient of the 2017 USAA Student Veteran Award

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“Field camps are the best part of being a geology major. You are taken out of the classroom and encouraged to work with your peers instead of competing for grades. Being in the field makes you look at the world with a new appreciation—structures suddenly present themselves where you once saw a simple mountain. You also create profound relationships with the people who experience the camp with you. This experience was rewarding in the education that I received and the friends that I made in this journey.”

-- Kelly Curtis, USF Geology Undergraduate

“As a seismologist by training, I had never been to a Geology field camp before. When I left for Salt Lake City for the 2-week long Geophysics module, I had mixed feelings whether it was a good idea to have me as an instructor. But I knew experienced faculty members, including Rocco Malservesi and Judy McIlrath, would be there from whom I could learn on the spot.

During field camp not everything works perfectly and friction can occur. But I was impressed by the students, some in their third consecutive 2-week field module, some for the first time ‘out west’. We worked long hours and introduced new concepts, but everybody kept going. Having great food at the end of the day - Thank you, Lis Gallant! - and an extremely knowledgeable, helpful and always friendly TA (Sajad Jazayeri) in the field and our ‘lab’ made it fun. For me, as a northern European, escaping the humid Florida summer was an added bonus! “

-- Jochen Braunmiller, Research Assistant Professor & self-professed “newbie” Field School instructor.
By the Numbers

✦ 49 – total number of students enrolled in the 2017 USF Geology Field School (up 8 students from 2016).

✦ 3 – number of non-USF students enrolled in the 2017 USF Geology Field School.

✦ $63,643 – total cost of running the 2017 Field School sessions, a 15% decrease from 2016.

✦ $2,767 - in-state USF tuition for completing 3 sessions required for a B.S. in Geology ($4,950 for out-of-state USF students, $5,400 for out-of-state, non-USF students).

Alumni-supported initiatives*

✦ The 2017 Field School student tuition continues to be offset by the Sam Upchurch Scholarship Fund (Fund 420079), with benefits varying on an annual basis, dependent on factors such as field school cost, tuition/fees, student attendance, and funds raised by the donor base.

✦ In future years, tuition will be offset by the Field School Endowment (Fund 426063), an invested fund comprised of alumni donations and accrued interest, and designed as a more stable and long-term means of financial support.

* Many thanks to Sam Upchurch and numerous Geology Alumni Society donors for making this another great year! If you would like to support either or both funds, please contact Kelly Addington at the email/phone number shown on Page 1.

Happy New Year, and cheers to the 2018 field season!

Students make waves the old fashioned way and analyze the results with the help of equipment on loan from GeoView Inc., facilitated by Mike Wightman, President of GeoView Inc. and the USF Geology Alumni Society.

2018 Geology Alumni Society Banquet

February 10, 2017
Gibbons Alumni Center
Tampa, Florida

Click here to register, and select 2018 USF GAS Banquet from the list. To register by check or to view registration and sponsorship details, click here.

For Sponsorship and donation information, email Matt Wissler, Banquet Chair.

Photo Credits: We’d like to thank Laura Connor, Judy McIlrath and Kelly Curtis for generously providing the photos in this issue.