



Florida Association of Professional Geologists (FAPG)

Florida Chapter of American Institute of Professional
Geologists (AIPG)

June 2021 Newsletter



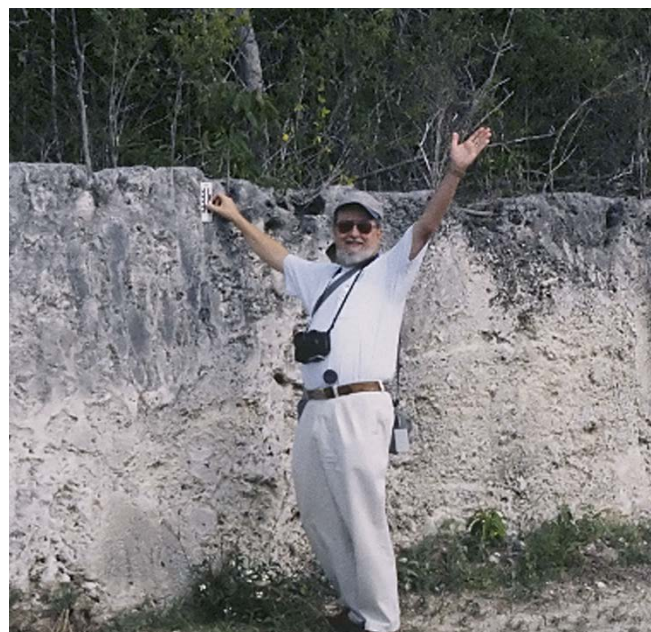
EDITOR'S MESSAGE

Welcome to the summer 2021 FAPG newsletter. The FAPG, a Section of the AIPG, was formed to protect, enhance and promote the Professional Geology practice within the state of Florida. Your membership and participation in the FAPG is greatly appreciated and our goal is to continue bringing value to the geologic community through communications, advocacy, scholarships, and networking. Please do not hesitate to reach out to FAPG if you would like to share information or concerns, or if you would like to assist in administration and growth of the organization.

In this issue we provide an end of session report from FAPG's lobbyist, Natalie Kato, as well as some additional legislative updates on geologically relevant state water issues. Thankfully, once again, legislative attempts to de-regulate geology licensure and to repeal Chapter 492 F.S. failed.

AIPG awards approximately a dozen student scholarships annually, nationwide. This year two of them were awarded to Florida geology students, both from University of Florida. FAPG President Clint Noble was happy to present these scholarships in person to the students at UF. FAPG and AIPG remain great sources of scholarship funding for geology students!

Last but certainly not least, in this issue we wish a very special happy 80th birthday to Florida geology legend, Dr. Sam Upchurch!! Dr. Upchurch (a.k.a. Dr. Sam, Sam, Sammy, Dad, Grandpa, Grandpa Sam, and, most notoriously, Chucky Jam Sam) is a founding and central figure in the Florida geology community as a professor, mentor, and professional for nearly 40 years. Dr. Upchurch was an instrumental member of a small team of geologists who are responsible for working with Florida legislature in the 1980's to get PG licensure adopted by our state. He is Florida PG #4. Happy Birthday to Dr. Upchurch and happy reading : -)



HAPPY 80TH BIRTHDAY DR. SAM UPCHURCH!

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<https://fapg.org/>

<https://fapg.org/contact.php>

Contact the editor: William.aley@gmail.com

END OF SESSION REPORT FROM FAPG LOBBYIST NATALIE KATO

The 2021 Florida Legislative Session adjourned at approximately 2:40 pm on Friday, April 30th. This was one of the earliest Sine Die times in recent memory, in a session that was in some ways, the least productive: of the 3,140 bills filed this session, only 275 passed both chambers. The \$101.5 billion state budget, given a boost with almost \$10.2 billion in federal stimulus money, included a pay bump and \$1,000 bonus for public school teachers, \$36 million to overhaul the state online unemployment portal, major environmental and water quality projects, and a crosssection of local projects.

Despite the low overall number of bills passed this session, the Governor, as well as leadership in both the House and Senate, were able to pass many of their top priorities. The Governor’s “anti- riot” bill, HB 1, passed early in the session, as did lawsuit immunity for business from COVID- related claims. A long-awaited update to the Seminole Gaming compact was also a top priority of the Governor’s, and will likely be ratified in a special session that begin the week of May 17th. On the legislative side, Senate President Wilton Simpson achieved his goal of passing an update to agritourism, while Speaker Chris Sprowls successfully passed legislation to combat the effects of sea level rise, and a bill to allow home-based businesses to operate without local government regulation. Other high-profile bills that passed included an overhaul to the state elections code, a bill aimed at regulating “big tech” social media companies, and insurance reform. Notably, priority legislation related to data privacy failed to pass, after significant pressure from business groups.

For FAPG, this was a hugely successful session. The details are outlined below.

Legislative Review of Occupational Regulations-FAILED
 SB 344/HB 471 required that the legislature, over the next five years, review the regulations and licensing structure associated with a wide swath of regulated professions in the state, including PGs. The original version of both bills would have repealed Chapter 492 (regulating professional geologists) on July 1, 2025, unless the legislature acted before then to enact legislation allowing the profession to continue. Other professions, including landscape architects, architects, and engineers, were also subject to the same timeline. This bill was not heard at all in the House, but did receive one hearing in the Senate. During the Senate



Kato Law

Natalie@kato.law

(850)724-0605

hearing, an amendment was adopted that required that all professions in the bill be reviewed by 2026, but did not require the legislature affirmatively pass a bill in order for the profession to continue to be regulated. This amendment was widely supported by groups affected by the bill (including the design professions).

The legislative review of occupations will likely continue to be a priority for Speaker Designate Paul Renner (R-Palm Coast), and will almost certainly return next year.

Petroleum Restoration Program Funding: \$125 million in total program funding

During the initial round of appropriations, the legislature appropriated \$75 million in funds from the Inland Protection Trust Fund to the program. During the budget conference process, the budget chairs (Senator Kelli Stargel and Representative Jay Trumbull) agreed to put another \$50million into the program. These additional funds came from the federal stimulus money and are non-recurring.

Other Bills of Note

Statewide Flooding and Sea-level Rise Resilience- PASSED

SB 1954 establishes the statewide resiliency programs that assess and address inland and coastal flooding and sea level rise. The bill creates a grant program within DEP to provide funding to local governments for the cost of resilience planning and projects, creates a comprehensive statewide flood vulnerability and sea level rise data set and assessment, and creates a statewide flooding and sea level rise resilience plan. DEP will be required to submit an annual plan proposing up to \$100 million in funding for projects that address risks from flooding and sea level rise.

Budget Items of Note

Piney Point Funding

The budget contains \$100 million in funding from federal stimulus funds to address environmental impacts either directly or indirectly related to the emergency response and closure.

PFAS Pilot Project Funding

The University of Florida received \$1 million in non-recurring funding from DEP for a PFAS contaminated material treatment pilot project. Under the project, research on PFAS will be performed by FDEP and UF, plant modifications will be performed by local contractors, and an experimental thermal treatment

facility will be operated by an entity chosen through the competitive bid process.

Florida Geological Survey

The Florida Geological Survey was funded at just over \$4.1 million, with 33 staff positions.

LEGISLATIVE UPDATES ON STATE WATER ISSUES

From: Chuck Drake, PG and WaterReuse Association

FAPG Board Advisor Chuck Drake is a Board Trustee with the Florida section of WaterReuse Association, the nation's only trade association solely dedicated to advancing laws, policy, funding, and public acceptance of recycled water. WaterReuse was established in California in 1990 and now has members in 38 states, the District of Columbia, and 11 countries. Below are brief updates on water-related legislative issues that Florida's WaterReuse members have been participating in through recent legislative sessions.

- **Central Florida Water Initiative (CFWI) Rules –**
Draft rules this session would've allowed Water Management Districts (WMDs) to issue letters to permittees reducing their permitted water allocation to the Demonstrated 2025 Demands. As a result of this change, if the Demonstrated 2025 Demands are less than the permitted allocation, some water users' permitted allocations could be cut from a little to a lot.

The draft rule also included those permits in the Southwest Florida Water Management District (SWFWMD) Southern Water Use Caution Area (SWUCA) in CFWI permitting requirements. From the outset of CFWI, it was understood that those permittees in SWUCA would only be part of CFWI's planning process, and not subject to CFWI rules.

Groundwater volumes used to generate the Demonstrated 2025 Demands and to calculate the potential modified water allocations were based on the use of the ECCTX groundwater flow model. According to WaterReuse, the ECCTX model was developed and stated many times as a planning level tool, and not to be used for permitting and decision making.

During the previous legislative session, the utility council and several local municipal utilities submitted draft language that would remove those SWUCA permittees from CFWI rule requirements and also said that the burden of proof of adverse impact is on the WMD, not the permittee. This is temporarily protecting permittees from potentially receiving modified water allocations.

- **Potable Reuse Draft Rule**, was revised and there's a workshop in June 2021 to discuss the changes. Direct and indirect potable reuse are addressed, and will help the water resources of the state when potable reuse becomes a new piece of the water pie. Codifying direct potable reuse will allow utilities to reduce groundwater withdrawals and use the aquifer system as a storage tank, essentially. Potable reuse can also be used to stop surface water discharge of reclaimed water which could also help meet Basin Management Action Plans and/ or Total Maximum Daily Loads.
- **Septic to Sewer Conversions**, are a huge part of the state's budget and getting septic tanks that are in hot spots (as defined by the FDEP) off-line will provide a huge benefit to springsheds and groundwater quality.

For more information, please visit the WaterReuse website at: <https://watereuse.org/sections/watereuse-florida/>

Charles (Chuck) Drake, P.G., CPG is the Vice-President, RSI Division at Tetra Tech in Orlando, FL.

AIPG 2021 SCHOLARSHIPS AWARDED TO UNIVERSITY OF FLORIDA STUDENTS

Early this past May, FAPG President Clint Noble travelled to Gainesville to present University of Florida Geology Students Emily Sonnenberg and Jamie Good with 2021 AIPG National Undergraduate Scholarships of \$1,000 each.

AIPG provides a limited number of National Undergraduate Scholarships annually to assist students with college education costs and to promote student participation in the American Institute of Professional Geologists (AIPG).

Details regarding Eligibility Requirements and Application Process can be obtained from AIPG's website linked below:

<https://aipg.org/page/UndergraduateScholarship>

FAPG also provides scholarships to geology students in Florida to assist with college education costs and to promote student participation in the American Institute of Professional Geologists (AIPG) and the Florida Section (FAPG). Details for applying for these scholarships are provided at the link below:

<https://fapg.org/Students>



FAPG President Clint Noble presenting AIPG Annual Undergraduate Scholarships to UF students Emily Sonnenberg and Jamie Good.

Why I Want to be a Geologist

By: Emily
Sonnenberg



As someone who is pursuing my dreams for my own personal fulfillment as well as for informing and protecting human populations from future hazards, becoming a geologist is the ultimate satisfaction I can achieve in my lifetime. Being a geologist means that I can combine my love for working both in the lab with various chemicals and acids as well as trekking the outdoors and carrying far too many rocks in my pack than I should. I have spent an abundance of hours in the clean lab and experimental petrology lab, taking part in the vital processes it takes to obtain the data that will change or heighten the collective knowledge of significant topics in geology, such as the Lesser Antilles subduction zone and high Mg-suite of lunar rocks. There is nothing more challenging yet thrilling than to be an important cog in the overall collection and interpretation of geologic data that will ultimately be shared with not only other scientists, but to inquisitive minds of the public population.

My drive to become a geologist also stems from how I grew up in a minute town in the middle of central Florida called Tavares, where disregard for scientific pursuit was prominent. My understanding of small-town America mindset has urged me to become an excellent communicator of geologic information to a range of audiences such as my hometown. Small-town America is a segment of our population that can become somewhat marginalized in respect to the dissemination of scientific or geologic information due to the draw that dense urban centers have for the scientific community. My desire to spread awareness of science and geology intertwines perfectly with the global drive to push consciousness of how we affect our world, such as climate change, through scientific evidence.

It is extremely relevant to my ambition to become a geologist that I was raised from this kind of community and understand how to approach these topics in a public forum. For example, sinkholes in central Florida are an increasing hazard and should be better addressed in order to recognize the warning signs, but it

requires efficient communicators as to why this geologic topic is significant to acknowledge. Another instance would be minor towns located near a dangerous volcano where there is a high risk for eruptions, but not enough scientific communication to properly inform the population. Everyone, no matter where they live or how small the community, should have access to this information and have someone who can facilitate communication of these vital concepts, such as a geologist like me. For this reason, I am driven to make geologic information readily available and understood by the general population a major focus of my lifetime career as a geologist.

Alongside the effort to publicize geologic information, nothing has drawn me in more than the instinct to understand the complexities of our earth, let alone the universe as a whole. My career choice as a geologist is the perfect concoction of major sciences like chemistry, biology, and physics that come together in unison to explain the history of the ground beneath us as well as the distant planets that occupy the same universe as us. I am blessed that there are opportunities in my career to conduct my own research ranging from understanding eruptive timings for hazard mitigation all the way to understanding how geologic and volcanic activity occurs on separate planetary bodies. My career choice also includes being able to teach geology classes and inspiring undergraduate and graduate students through the academic platform. There is not just one motivation, but instead a diverse and colorful array of reasons for why I want to be a geologist.

Why I Want to be a Geologist

By: Jamie Good



I am from a small farming community, nestled in the middle of Florida's springs heartland. Growing up, the health of our local water resources was -

and still is - a consistent issue. My father worked as an environmental engineer for our water management district. Many of my weekends were spent with him on the Suwannee River, where he told me about the aquifer and springs and their most pressing issues. Given my childhood, I was inspired to go into the physical sciences, in the hopes of eventually helping

communities such as my own. Although the work I end up doing may not be as specific to my hometown as I had once imagined, I know that my work will be applicable to the relationship between a people and their occupied environment, and I would like to play a part in improving that relationship.

Once I graduated high school and began my secondary education at the University of Florida, I chose to major in Geology on a whim. My father had told me of his geologist coworkers, who had many opportunities for field work and often reminisced on their times as an undergrad. I decided that for the time being I would explore geology. At that time, I didn't understand the full scope of geology and thought it was "just about rocks," as most people do.

However, upon taking my first geology class, I was hooked! I decided to go on an impromptu field trip which was led by some members of UF GeoClubs. That trip resulted in me falling in love with geology. I realized that geology is the intersection of nearly every branch of science, history, and exploring the great outdoors, all of which can be used to make sense of this messy world we call home. With each few steps, the Earth tells a different story and records millions of years. As a geologist, I get to piece together that history and I could not be more excited to do so!

FLORIDA GEOLOGY LEGEND DR. SAM B. UPCHURCH TURNS 80!

On June 30th, Sam Upchurch, Ph.D, P.G., is turning 80 years old! Dr. Upchurch is widely known and highly regarded in Florida's geologic community and beyond. He has influenced numerous students and professionals alike during his more than 47 years as a geologist in Florida. He is known by a number of monikers including Dr. Upchurch, Dr. Sam, Sam, Sammy, Dad, Grandpa, Grandpa Sam, and, most notoriously, Chucky Jam Sam!

Sam's love for geology started at an early age. In the 5th grade, Sam lived on a 10-acre farm outside of Nashville, Tennessee. There were two large sinkholes at the back of the property, as well as a swallet and a cave with an arch near the back of the property. After a family trip out west around that time, Sam had determined that he wanted to be a geologist. Beginning in the 11th grade, Sam began volunteering as a docent at the Tennessee State Museum. The museum had a small collection of minerals and rocks, and he

contributed a few of his own to create a "geology of Tennessee" exhibit.

During his undergraduate studies at Vanderbilt University, Sam majored in geology and minored in chemistry, worked for the Tennessee Division of Geology, and courted the love of his life, Mary Ann Comer. On graduation, he was commissioned as a Second Lieutenant in the U.S. Army Corps of Engineers, and proceeded to Northwestern University for his graduate studies, where he earned his doctorate in geology with specialization in geochemistry, statistics, hydrology, and oceanography.



Sam and Mary Ann at his commissioning ceremony in 1963

Sam and Mary Ann moved to Florida in 1974, where Sam became an Associate Professor (later Professor) of Geology at the University of South Florida. Dr. Richard A. "Skip" Davis hired him to assist in building the USF Geology Department. From 1974 until 1993, he taught courses and aided undergraduate and graduate (Masters and Doctoral) students' research projects, theses, and dissertations. He was the department chair from 1982 until 1989. Although Dr. Upchurch left USF in 1993 to become a geological consultant, he was a Courtesy Professor of Geology until 2015. Since leaving USF, he has presented, and continues to present, frequent lectures in a variety of courses at the university.

After moving to Florida, Sam and Mary Ann also started their family, raising their kids Samantha and Will to appreciate science and the natural world around them. Sam's love of teaching extended to his parenting, where he took his kids on slogs through Florida's wetlands and on travels through the beautiful national parks that inspired his own love of geology. Samantha fondly remembers building an "aquifer" out of an old sandbox for her 6th grade science project, and to this day, Will

still loves practicing the skills Sam taught him and his friends as the Scoutmaster of his boy scout troop. While neither kid caught “the geology bug,” they both built careers around their love of science and math.

As a geological consultant, Sam was a Principal with Environmental Resource Management from 1993 until 2001. In 2001, he moved to SDII Global Corporation as the Vice President and Senior Principal Geologist. SDII is a company started by USF Geology alum Bob Windschauer. His clients ranged from private firms/individuals to local, county, State and Federal government entities. At SDII, Sam developed a program to provide support to the burgeoning sinkhole activity industry in Florida. He was a participant in the Florida Geological Survey’s “Sinkhole Summit 2” in the 2004 that resulted in the publication of FGS Special Publication 57 (2005) “Geological and Geotechnical Investigation Procedures for Evaluation of the Causes of Subsidence Damage in Florida” which became known as the unofficial bible for sinkhole activity investigations in the State. Sam continued teaching short courses on hydrogeology, geochemistry, geostatistics and more.



Sam teaching at a recent exhibit on Agatized Coral at the Gillespie Museum.

Dr. Upchurch’s teaching, research and consulting ranges from geochemistry and hydrogeology to karst geology. He has authored and co-authored hundreds of research papers and presented hundreds of lectures to professional and public groups. In 2018, he was the lead author on “[The Karst Systems of Florida:](#)

[Understanding Karst in a Geologically Young Terrain”](#)

published by Springer International Publishing (450 pages). Among Sam’s continuing research and publication efforts include a follow up to the “Karst Systems of Florida” entitled “Florida’s Karst Landscapes: Sinkholes, Springs, Caves and Other Landforms.” He is also working on an online atlas of Florida’s geomorphology – the first comprehensive compilation of Florida’s geomorphology – with Drs. Tom Scott (Assistant State Geologist Emeritus) and Christopher Williams (FGS Professional Geologist).

Sam has been involved in the Florida geological community’s activities since joining the Southeastern Geological Society (SEGS) in 1974. With the SEGS, he has assisted in running field trips and, in the process, presented many lectures at trip stops. In the mid- to late 1980s, he worked with the Florida Section of the American Institute of Professional Geologists to get PG licensure adopted by the State. He served on the first Board of Professional Geologists and is Florida PG #4. Sam has served as a committee chair and various officer positions for a number of professional organizations. He is a senior Fellow of the Geological Society of America. In 2008, Dr. Upchurch was presented the University of South Florida, Geology Alumni Society’s annual award for his contributions to the department.

So, happy 80th birthday Dr. Upchurch, Dr. Sam, Sam, Sammy, Dad, Grandpa, Grandpa Sam, Chucky Jam Sam from Florida’s geological community. Thank you for your contributions and friendship.

If you would like to wish Sam a happy birthday, please contact his daughter, Samantha, at vandyviolet@gmail.com and she will include you in the festivities.

Throughout his career, Sam has been an advocate for the importance of firsthand field experience for geology students, and as a result, USF has a Field School Scholarship established in his name. If you would like to contribute in honor of Sam’s 80th Birthday, you can do so at <https://giving.usf.edu/online/gift/f/420079/>

HAPPY 80TH BIRTHDAY SAM UPCHURCH!!





USF Foundation

UNIVERSITY of SOUTH FLORIDA

Sam Upchurch Field School Scholarship

<https://giving.usf.edu/online/gift/f/420079/>

People can also send payments via check, made out to the USF Foundation, listing fund #420079 in the memo section:

Sharon Hamisak
CAS Development Office
4202 E. Fowler Ave, CPR 107
Tampa, FL 33620

If anyone has any trouble they can email Sharon at shamisak@usf.edu.

Sam Upchurch on Field Camp

I don't think I have ever spoken with a fellow geologist who did not state that field camp was the best experience they had as a geology major. Field camp provides an opportunity to develop the two skills that are virtually unique to our science: three-dimensional thinking and understanding deep time. It is especially important that geology majors in Florida enroll in and actively embrace field camp because the geology of Florida is so limited in terms of the scale and scope of earth science. In order to develop the professional skills necessary to conduct field work and understand three-dimensional concepts and deep time, one must see many different types of rocks in a variety of settings. One must stand on an outcrop and debate its origins and implications. One must collect and describe rocks, and develop the confidence to interpret their origins.

My field camp experience was through on-the-job training. I started work with the Tennessee Division of Geology as a freshman in college. I was paid \$1/hour to wash and archive oil-well test cuttings. Working with several of the geologists at the survey, I learned the rocks of Tennessee. By the time I was a junior in college, I was being paid to accompany a professor at Vanderbilt as his field assistant during the school season and mapping geological quadrangles in the summer. The mapping was delightful. I would drive every road and trail in a quadrangle, climbing hills and noting geological formations and structures off road. One summer, I would park my car in the Cumberland Mountains on Monday and backpack on long treks until Friday. Several of my maps were published by the survey, and I was given credit for field camp for admission to graduate school. Even so, when I got to graduate school, I discovered that my experience was limited and that there were basic skills that I did not know. So, I got my field camp experience as a graduate student. My point is, undergraduates, get your field experience, when you have time to enjoy it and learn in the context of your course work.

USF has a wonderful field camp program that meets the goals I am suggesting, and it is getting better and more comprehensive every year. I am honored to have my name associated with the endowment USF is using to assist undergraduates to attend field camp. I urge everyone to support USF's plans to expand the field camp experience and assist students to attend. Please contribute to the field camp fund and support USF's growth plans.

A Personal Reflection on Sam Upchurch turning 80!

By Tom Scott

It sure doesn't seem like it has been 47 years since Sam and I first met, but man we were young – 33 and 24 years old. We both started jobs in Florida in 1974. Sam came to the University of South Florida and I started at the Florida Geological Survey (FGS). Neither one of us can remember exactly when we met but we agree that we both were on the Southeastern Geological Society's (SEGS) 1975 field trip on the hydrogeology of west-central Florida. We quickly became great friends. Sam was the older brother I never had and I was the younger brother he never had. Sam's late wife, Mary Ann, said that, if we lived in the same town, the two nerdy geologists would have been arrested for something.

Sam and I have worked on numerous geologic projects over the years. The first that I can recall was setting up the "Miocene Symposium" for the SEGS in 1980. Subsequently, we edited the papers presented at the symposium and created FGS (then FL Bureau of Geology) Special Publication 25 – Miocene of the Southeastern United States. We have written numerous papers, presented "tag-team" lectures, created and edited fieldtrip guidebooks, and, most recently, Sam asked me to be one of the co-authors on *The Karst Systems of Florida: Understanding Karst in a Geologically Young Terrain*. Currently, we are working together on a new book entitled *Karst Landscapes of Florida: Sinkholes, Springs, Caves and other Landforms*. As often was the case, Sam tasked me with keeping him out of "rabbit holes" and keeping him on track. Once we figured out how to merge our different research and writing styles, we have had a blast working together. We tend to "irritate" each other at times but it almost always ends up with "well damn, you're right!" When Sam and I have presented lectures on fieldtrips and in classes, we've been known to interrupt each other and say "that's not right" or "you're full of it!" It has gotten a lot of laughs and it's usually true!



Tom, Nada, and Sam. 2019 on the Ring Road on the northern coast of Iceland

When I was retiring from the FGS after 35 years, Sam convinced me that I should come to work with him at SDII. We brought the same dynamic to our work at SDII as we had with our research and publishing. It made for some interesting discussions with the younger project geologists as Sam and I told each other how crazy some ideas were!

From 2009 until 2017, my wife, Nada, and I just about lived with Sam in Land O' Lakes. She calls him her second husband, the easy one! Sam worked from his home office a lot while we "lived" with him. He would be working on the first karst book but would get sidetracked and end up in his recliner talking with Nada. I'd get home from the office and find them watching TV shows like "Botched"! We sure enjoyed our time living with him.

Starting in 2009, we all travelled together on vacations. We've gone out west several times, to Iceland twice, to New Zealand and polar bear watching in Churchill, Canada. More trips are being planned. Nada's familiar refrain on the trips has been "leave my Sammy alone!" as we got acting like brothers.

Sam has a world-class mineral, fossil and rock collection. I drool over many of the specimens he has. To give you an idea of our relationship, Sam says he has instructed his kids to give me his coprolite collection when he dies! Thanks!! Wait! It's a damned cool coprolite collection!!

Sammy, it's been fantastic fun! Happy 80th birthday!

FROM THE FLORIDA GEOLOGIC SURVEY

In case you missed it, Florida Department of Environmental Protection's (FDEP's) Florida Geological Survey (FGS) has improved access to geoscience data and information through delivery of online maps and datasets, including lithologic and geophysical records.



The Geologic Data Enterprise System (GEODES) offers a cloud-based solution that allows users to drill down into the data by visiting the [online interface](#), or by visiting its associated [online map](#). Upon loading the map, zoom in to view thousands of points representing samples archived in the FGS Geologic Collections Facility. Click on a point and scroll down to select links to additional data, including lithologic descriptions and geophysical logs.

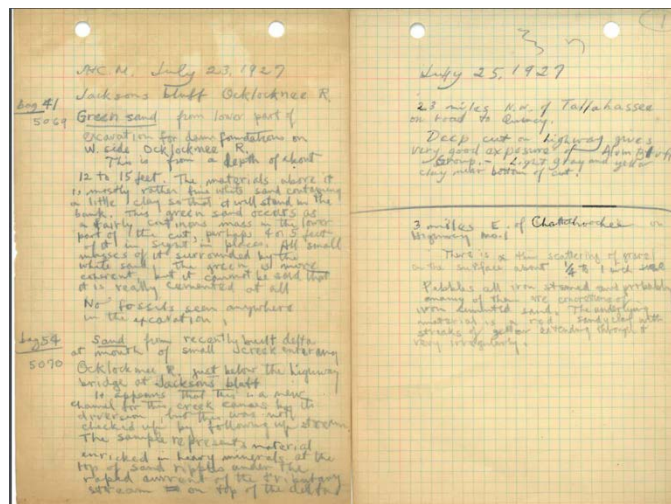
The FGS team is still working to bring forward legacy lithologic data, such as the typewritten descriptions from the 1980's and earlier. For access to these older descriptions, visit our "[Greenbooks](#)" page and search by county and well number. Links to the scanned notebooks are found in the "Volume" column.

Thanks to matching funds from the U.S. Geological Survey - National Geological and Geophysical Data Preservation Program, [scans of field notebooks](#) dating back to 1906 are also available, as well as a library of images of geologic information, locations and activities within the [FGS ResourceSpace](#). The latter website recorded more than 1.3M image visits in the last 12 months!

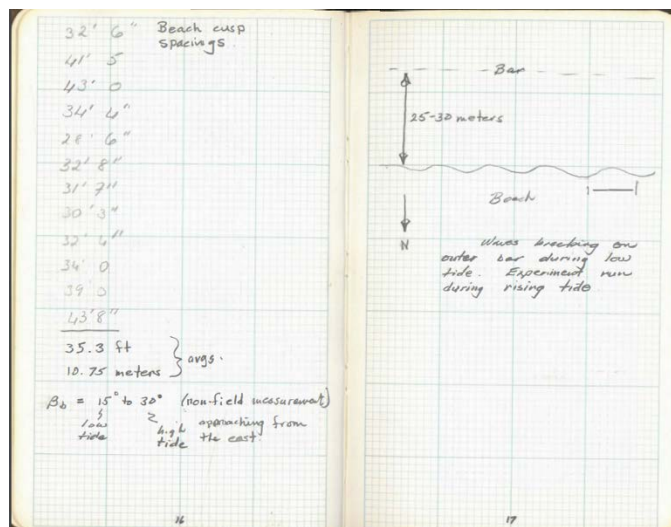
Not everything the FGS accomplishes is published, however, it is indeed useful. Among these resources are FGS contract deliverables, including those we receive and those we produce. You are invited to visit our webpages that provide access to [coastal-related reports](#) and [reports related to Florida's aquifer systems \(including aquifer storage and recovery\)](#), [geomorphology and land-based geophysics](#).

Finally, [this link](#) provides access to three dozen GIS datasets including potentiometric maps, aquifer

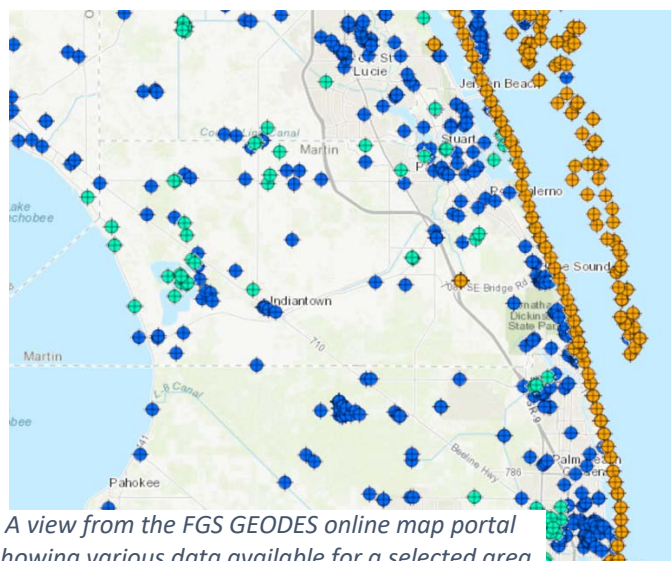
vulnerability, STATEMAP geology, subsurface maps, and more. Happy data and information mining!



Details from a 1906 FGS field book now available via GEODES online data repository



A page from James H. Balsillie's field book documenting wave conditions during a trip to Point Mugu, CA in 1967



A view from the FGS GEODES online map portal showing various data available for a selected area

FLORIDA GULF COAST UNIVERSITY GEOPATH PROGRAM

FGCU's New Environmental Geology Program Rocks!

The new Environmental Geology major at Florida Gulf Coast University (FGCU) in Fort Myers, Florida hosted a geology field course this summer to recruit and retain geology students into the major. The course, called GEOPATH, is an NSF-funded program that will extend into 2023 to establish the new Environmental Geology Bachelor's of Science Degree within The Water School at FGCU in Fort Myers, Florida. The first part of the three-year program was a summer field course held in the beginning of May and consisted of three subjects including mineralogy, hydrology, and climate change.



Figure 1. GEOPATH students on Sanibel Island returning from a day on the water obtaining sediment cores to look at the history of the barrier islands including major storm events.

Students joined together to survey climate change effects on a barrier island along the coast of southwest Florida. Students learned sediment coring in Sanibel Island's Tarpon Bay to identify modern storm events in the geological record over the past few hundred years. Students also learned how to conduct a beach profile survey using surveying and GNSS equipment. In addition, students conducted fieldwork in southwest Florida where they evaluated the formation, mineralogy, and geochemistry of calcite crystals, as well as applied surface and subsurface hydrological research methods on Sanibel Island to investigate nitrate and phosphate in surface water and groundwater.



Figure 2. Students Zoie Kassis (left) and Lane Davis (middle) learn how to measure the water surface of a pond on Bob Wigley Preserve with Dr. Rachel Rotz (right) using a Trimble GNSS.

The GEOPATH program is designed to introduce students to geological field work. Student Lane Davis said, "I am using the newly learned techniques for my job now. I believe the course is a great way to introduce geology majors to the field work side, it gains them experience they can use in the future. I had a lot of fun during the short-course and was able to gain new friends."

The program has already recruited two additional majors for a total of fourteen geology majors. Part of the allure for many students are the career opportunities as a geologist in Florida. Speakers from all around Florida including Johnson Engineering, Black & Veatch, Lee County Public Utilities, the USGS, and Miami-Dade Water and Sewer presented to students for a Hydrogeology Roundtable during the course. Student Jasmine Morejon said, "When I first started the GEOPATH course, I was an Environmental Studies major. This course was able to provide a hands-on experience based around hydrology and climatology. These experiences in the field and in the lab helped me understand the science of geology, and I am proud to say that I am officially an Environmental Geology Major."



Figure 3. Students Shayna Konen, Jasmine Morejon, Branden Cantos, and Lily Silva (left to right) assist Dr. Joanne Muller in obtaining a sediment core from Tarpon Bay.

The Environmental Geology major currently has seven faculty members, including four that are women. Student Lily Silva said, “Now entering my junior year in the Environmental Geology program at FGCU, I can pursue my degree in full confidence that this program was meant for me. Working alongside Dr. Abercrombie, Dr. Muller, and Dr. Rotz was truly inspiring; I have never before worked alongside so many women scientists. I am very grateful for my experience in the Geopath program, which was deeply motivating whilst educational and fun.”

The Environmental Geology program at FGCU is part of The Water School, a new interdisciplinary initiative to bring water studies together in Southwest Florida. Students will still engage in a traditional geology curriculum but will be actively involved in research and outreach activities that serve Southwest Florida’s environmental challenges including climate change, energy, resources, and water. All students are encouraged to take the Geologist In Training (GiT) exam upon graduation, and are actively seeking support to send students to the annual Geological Society of America conference in Portland, Oregon this year.

Information about the program can be obtained from Dr. Joanne Muller (Chair) jmuller@fgcu.edu, or Dr. Rachel Rotz rrotz@fgcu.edu (Hydrogeologist) at Florida Gulf Coast University.

STUDENT CHAPTERS

The FAPG continues striving to revitalize our scholarship program and continue to provide helpful resources to new geologists entering into and maneuvering through the geosciences workforce. Through these efforts we hope to re-engage our student chapters and provide graduating geologists with resources to guide them into their first jobs and into exciting careers in geosciences.

We encourage students and professors interested in organizing student chapters of the AIPG/FAPG to contact William.aley4@gmail.com.

There are many benefits to participating in an AIPG/FAPG student chapter. AIPG recognizes the need to establish programs of professional encouragement for young people beginning their careers in the geological sciences. Each Student Member of AIPG is viewed by the Institute as a force that will determine the future vitality of the profession. The AIPG Student Chapter brings together students and practicing geologists to build a broad-based understanding of the profession and a sense of unity and identity with their peers. The Chapter is the link between school and business, which enables each participant to engage in the type of activity necessary for professional development. As transitions are made from study to career, from entry level to upper levels in business, government and academia, AIPG provides a continuous source of professional support and counsel.

SPONSORSHIP OPPORTUNITIES

Become a Sponsor and get your company's name and logo in the newsletter, support our legislative efforts, and support our student scholarship opportunities! Sponsor logos will be posted to our website home page (www.fapg.org) and ads included in e-mails and all newsletters.

Business card (\$200/year)

Quarter page (\$500/year)

Full Page (\$1000/year)

Contact William Aley for more information.

William.aley4@gmail.com

ADDITIONAL GEOLOGIC RESOURCES

American Geosciences Institute (AGI)

<https://www.americangeosciences.org/>

American Geophysical Union (AGU)

<https://www.aegweb.org/>

American Institute of Professional Geologists (AIPG)

aipg.org

Association of Environmental and Engineering Geologists (AEG)

<https://www.aegweb.org/>

Florida Geologic Survey (FGS)

<https://floridadep.gov/fgs>

Florida Museum of Natural History

<https://www.floridamuseum.ufl.edu/>

Florida Society of Mining Engineers (FLSME)

<http://flsme.org/>

National Association of State Boards of Geology (ASBOG)

<https://www.asbog.org/>

Southeastern Geologic Society (SEGS)

segs.org