



# *The Florida Surveyor*

Volume XXV, Issue II

December 2017

*Happy Holidays!*

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- Army Bans DJI Drones
- From the Archives
- The Mason-Dixon Line

*A publication of the Florida Surveying and Mapping Society since 1992*



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## President's Message



I hope everyone enjoyed some time off with family and friends and had a wonderful Thanksgiving holiday. I know I sure did! Being with family and my grandson Samuel for his first Thanksgiving sure puts things in perspective, and shows how precious and short life is. You just can't sweat the small stuff, and money can't buy the most important things in this life.

November was a busy month for FSMS and the surveying & mapping profession in Florida. We kicked off the month with our FSMS Board meeting in Lakeland with an overwhelming turnout. Thanks to everyone that attended Thursday for the committee meetings and participated in getting a lot of the material discussed and sorted out prior to our board meeting on Friday. It sure helped, I believe, having the majority of the board members there Thursday to be briefed and involved in all aspects of the society's business, so that when formal motions and actions are taken on Friday, important information has already been presented and motions move much more efficiently.

FSMS has a challenge ahead of us, and that is to increase our membership by enhancing the value and meaning of this society to our members and to the entire Geospatial community. Our newly adopted mission and vision statements say it all:

### ***Mission Statement***

*To promote, enhance and defend the surveying and mapping profession through public awareness, education efforts, advocacy for the profession and legislative action.*

### ***Vision Statement***

*To be the national leader in development of education programs, public/professional outreach and development of governmental policies for the Geospatial Community.*

December is the time of the year that we all renew our dues and commitment to the society. We must all join in and promote, preserve and protect our profession as one entity. We all need to be the voice to encourage everyone working in and around the surveying & mapping profession in Florida to join FSMS, and help us help them prosper in their daily business and livelihoods.

The BPSM Board met the second week of November and it was also a very productive meeting. We finally are at the end of the SOP 5J-17 journey and we have a newly adopted set of rules. A lot of people spent a lot of time and effort to see this through, and I do believe the work has paid off with the revisions we were all hoping to see and embrace for the future. Thank you to the FSMS members who gave their time and expertise in helping see this through. Make sure to go to the state website and download the current 5J-17, so you can be up-to-date on all of the new changes.

I wish everyone a safe and happy holiday season. Merry Christmas to one and to all! And Happy Birthday to my Lord & Savior, Jesus Christ.

"Christmas is not a time nor a season, but a state of mind. To cherish peace and goodwill, to be plenteous in mercy, is to have the real spirit of Christmas." – Calvin Coolidge

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Issue 9, October 2017



# NSRS Modernization News

For all issues of **NSRS Modernization News**, visit:

[geodesy.noaa.gov/datums/newdatums/TrackOurProgress.shtml](http://geodesy.noaa.gov/datums/newdatums/TrackOurProgress.shtml)

## Blueprints

**NOAA Technical Report NOS NGS 64, "Blueprint for 2022, Part 2: Geopotential Coordinates,"** will see a late October release. A third and (expected) final document in the series is currently in the initial production stages and when complete will address the use of the modernized NSRS.

## The Mariana Plate Survey

A field crew of three NGS employees and one NOAA Corps officer spent three weeks during August and September surveying select points in Guam and the Commonwealth of the Northern Mariana Islands (including the isolated northern islands). The team wanted to determine recent IGS coordinates and compare those coordinates with historic IGS coordinates. The effort will contribute to the creation of a new Mariana Plate rotation model, which will be used in the definition of MATRF2022.

In addition to GPS, a gravity survey was performed throughout the project to improve the geoid in the region.

## Preparing USGS

NGS employees met with teams of U.S. Geological Survey (USGS) employees and contractors at the USGS Geospatial Technical Operations Center in Rolla, Missouri, in September. The two days of meetings concentrated on understanding the impact the NSRS modernization will have on both USGS's historic and ongoing data collection, as well as their digital map production. Pilot projects were established to guide NGS toward building the tools USGS needs to facilitate a smooth transition.

## Progress in ongoing Projects

There are currently 17 ongoing projects at NGS that are directly related to the NSRS modernization. Highlighted below are a select few.

### NADCON 5 Project Manager: Dr. Dru Smith

NGS approved the NADCON 5 tool as the official replacement for all previous versions of NADCON and GEOCON, and it will soon be moved to the live NGS web page. A vote by the Federal Geodetic Control Subcommittee to adopt the tool across the federal government is expected to occur in the next six months.

### NSRS Database Project Manager: Krishna Tadepalli

The NSRS database structure continues to grow. NGS has recently begun integrating all data from CORS, GRAV-D, and GPS occupations on passive control into the new database.

### OP2IDB Project Manager: Dr. Mark Schenewerk

A working version of OPUS Projects that fully supports (behind the scenes) bluebooking, including adjustments and submission to the NGS Integrated Database, is now up and running on the NGS BETA website! Sign up for training with the new version of OPUS Projects here: <https://www.ngs.noaa.gov/corbin/>

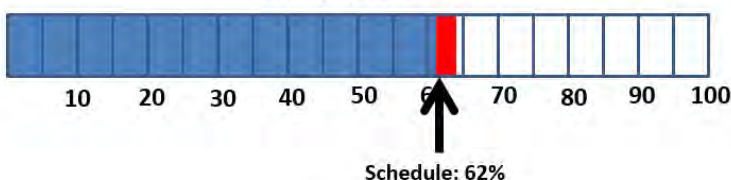
### xGEOID Annual Project Manager: Dr. Yan Wang

We have begun a collaboration with NGA. NGS will annually provide NGA with GRAV-D data, and NGA in turn will produce a global geopotential model updated with those data. That model will then serve as the foundation for each xGEOID model until 2022.

GRAV-D progress last quarter: **up 2.0% to 63.9%**

**Ahead of Schedule!**

Recently: GA and SC





# Surveyors in Government



Richard Allen, PSM, CFM

In this month's article I will hopefully make most of you in government, and hopefully all surveyors in general, aware of the recent changes to 5J-17 of the Florida Administrative Code. These changes went into effect on November 13<sup>th</sup>. As the Orlando City Surveyor, I have several issues that need to be quickly addressed, because they are no longer covered as standards. One such issue is the requirements for as-built, control, hydrographic and topographic surveys. Each of these surveys is used for various types of city projects, and we do not have our own standards for each. This will be changing - hopefully quickly - as I should be working on that right now!

## **5J-17.050 Definitions.**

*As used in this chapter, the following terms have the following meanings:*

(1) *Benchmark: a point, natural or artificial, bearing a marked position whose elevation above or below an adopted datum plane is known.*

(2) *Boundary Survey: a survey, the primary purpose of which is to document the perimeters, or any portion thereof, of a parcel or tract of land by establishing or re-establishing corners, monuments, and boundary lines, such as for the purposes of describing the parcel, locating fixed improvements on the parcel, dividing the parcel, or platting.*

(3) *Computation records: Calculations and/or numerical values that are derived from measurements. These records include coordinate geometry data, coordinate list, computer aided drafting files, horizontal and vertical traverse closure, and adjustment computations.*

(4) *Conflict of Interest: a conflict between one's duty to act for the benefit of the public or a specific individual or entity, and the interests of self or others; which conflict has the potential of influencing, or the appearance of influencing, the exercise of one's professional judgment in carrying out that duty.*

(5) *Corner: a point on a land boundary that designates a change in direction, for example: points of curvature, points of tangency, points of compound curvature and so forth.*

(6) *Faithful Agent: a licensee acting in professional*

*“One such issue is the requirements for as-built, control, hydrographic and topographic surveys. Each of these surveys is used for various types of city projects, and we do not have our own standards for each.”*

*surveying matters who safeguards as confidential any information obtained by the licensee as to the business affairs, technical methods or processes of a client or employer, and who avoids or discloses a conflict of interest that might influence the licensee's actions or judgment.*

(7) *Map of Survey (or Survey Map): a graphical or digital depiction of the facts of size, shape, identity, geodetic location, or legal location determined by a survey. The term “Map of Survey” (Survey Map) includes the terms: Sketch of Survey, Plat of Survey, or other similar titles. “Map of Survey” or “Survey Map” may also be referred to as “a map” or “the map.”*

(8) *Measurement records: Sufficient data that can be used to reconstruct the measurements, including but not limited to angles and distances to determine locations of fixed improvements, property corners and other points on a survey. These records include field notes, angle and distance measurements and raw data files.*

(9) *Monument: an artificial or natural object that is permanent or semipermanent and used or presumed to occupy any real property corner, any point on a boundary line, or any reference point or other point to be used for horizontal or vertical control.*

(10) *Redundancy measurement: One or more measurements that independently verifies another set of measurement(s) to the same point, to identify and minimize errors.*



(11) *Remote Sensing: The process of acquiring knowledge about physical features by analyzing data obtained from instrumentation located at a distance from the features being examined.*

(12) *Survey: The result of any professional service or work resulting from the practice of Surveying and Mapping as defined in Chapter 472, F.S., which includes, As-built/Record Surveys, Boundary Surveys, Construction Layout Surveys, Condominium Surveys, Construction Control Surveys, Control Surveys, Hydrographic/Bathymetric Surveys, Tidal or non-tidal Water Surveys, Photogrammetric Surveys (including Orthorectified Imagery), Quantity Surveys, and Topographic Surveys, whether it is measured by direct or remote sensing methods.*

(13) *Survey and Map Report: a written or digital document, that adequately communicates the survey results to the public through a map, (written or digital), or in a report form with an attached map and details methods used, measurements and computations made, accuracies obtained, and information obtained or developed by surveying and mapping techniques. The map and report shall identify the responsible surveyor and mapper.*

(14) *Work Product: the drawings, plans, specifications, plats, reports, and all related calculations and field notes, either hard copy or digital, of the professional surveyor and mapper in responsible charge or made under his/her supervision.*

*Rulemaking Authority 472.008, 472.027 FS. Law Implemented 472.027 FS. History—New 9-1-81, Formerly 21HH-6.02, Amended 12-18-88, Formerly 21HH-6.002, Amended 12-25-95, 5-25-99, 3-25-01, 3-13-03, 4-4-06, Formerly 61G17-6.002, Amended 5-11-15, 11-13-17.*

Additionally, in 5J-17.051 and 5J-17.052, there isn't any mention of requirements or definitions for the surveys noted in 5J-17.050(12), other than boundary surveys. However, we are professionals and should be doing professional work. Let the Board handle those who choose to produce inferior work. The one main problem is that the Board can only act on something that is submitted to them, and can only be handled on a quarterly basis. Therefore, it is generally left to us government surveyors to manage and hold companies and individuals responsible for the surveys they submit. Without defined requirements, the validity of surveys is up to our discretion, until we adopt our own minimum standards. We'll have to see how we adjust to the new requirements as well as the ones we provide - I will be drafting them as you are reading this!

I want to make as many government surveyors and regulatory officials aware of the new changes so they can prepare themselves or their agency to address these potential issues - especially in regards to manag-

ing survey data that is submitted for both public and private projects. A lot of us run into the same issue: it is not the surveyors who are doing what's right, it is those who are either uninformed, or those who just don't care! I see all kinds of different products that are submitted as surveys, but are far from it.

Now that these requirements have changed, we will begin to adopt the previous requirements of Minimum Technical Standards/Standards of Practice to at least define the minimums of what is acceptable, so we can reject submittals that are substandard, instead of saying that a product is not acceptable because we don't like it. I cannot tell you how many times we have to educate decent surveyors on what an as-built survey is. It is not a topographic survey! If there is nothing to compare against, say construction plans, why would it be an as-built survey? I have to say, when I was on the private side, the company I worked for made the same mistakes and I was none the wiser! If anyone is interested in implementing similar standards please let me know, I have been reaching out to county surveyors in surrounding areas in order to develop standards.

*You can reach Richard at  
Richard.Allen@cityoforlando.net or 407.246.2788.*



# AIR&SPACE

## Smithsonian

### U.S. Army Puts a Halt to Its Use of Chinese-Made DJI Drones *Security concerns lead to a ban of a popular brand of UAV.*

By Tim Wright  
Airspace.com  
August 4, 2017

Citing a worry over “cyber vulnerabilities,” the U.S. Army this week ordered that all drones built by China-based DJI, the world’s biggest drone maker, be immediately removed from Army service. The order comes following a classified study of the issue completed in May by the Army Research Laboratory, and the simultaneous release of a Navy memorandum titled “Operational Risks with Regards to DJI Family of Products.”

According to aviation attorney Jonathan Rupprecht, the FAA has recently created more than 500 security-related flight restrictions prohibiting unpiloted aircraft flights over military locations. Last month, Air Force General Mike Holmes of the Air Combat Command at Langley AFB in Virginia revealed that quadcopters had penetrated controlled air space at unidentified air bases, with one drone overflying a flight line. Drones are known to overfly sensitive nuclear sites, and Holmes has requested authority to down unpiloted aircraft.

According to Patrick Egan, North American Editor for SUAS News, which covers the drone industry, this is not the first time DJI products have been grounded by U.S. government agencies over security concerns. He says NASA and the Department of Energy have already stopped using DJI products. When Egan looked into why, he says they weren’t allowed to use the drones “because they are Chinese.”

Information provided by the Department of Interior last year in response to a Freedom of Information Act request by cyber security expert David Kovar confirms that DJI products had already been grounded by the Department of Energy due to security concerns. The



same documents show that Interior had decided to purchase products built by California-based 3D Robotics because of security concerns about DJI. Just this week, however, DJI announced a partnership with 3DR whereby DJI aircraft would become compatible with 3DR surveying software.

Michael Blades, North American Research Director for Aerospace and Defense at Frost and Sullivan, says that approximately 70 percent of drones flying today are built by DJI. With such massive market penetration, some worry that DJI aircraft are collecting intelligence across the globe, particularly in the country’s largest market, the United States. DJI’s privacy policy explains that drone owners agree to the company’s collecting information from onboard cameras, including actual photos and videos, along with location information showing where they were taken.

According to Blades, because DJI is privately owned, it could be more vulnerable than public corporations would be to pressure from the Chinese government to provide access to drone data. With drones being used more and more for inspections and surveys,

the fear is that the Chinese government could develop a massive database of information about critical civilian U.S. infrastructure, in addition to any government- or military-related data or imagery that DJI drones may be capturing.

Not everyone is convinced that DJI is spying. Kevin Finisterre, Senior Software Security Engineer at Department 13, a firm focused on anti-drone work, said by email, “Even though I tend to be one of the more vocal folks against DJI, I have to caution folks on some of the lines of commentary here, as none of them have been ‘technically’ proven. I get the ‘allowing them to build a massive infrastructure database of this country’ line of chatter, but I have yet to see any factual basis for it.”

DJI operates a website called Skypixel, where

drone pilots can share photos and video, but Finisterre says there is no proof as yet of an intent to use this material for any other purpose.

Adam Lisberg, Corporate Communications Director for DJI’s North America operations, released a statement this week saying, “We are surprised and disappointed to read reports of the U.S. Army’s unprompted restriction on DJI drones, as we were not consulted during their decision. We are happy to work directly with any organization, including the U.S. Army, that has concerns about our management of cyber issues.

“We’ll be reaching out to the U.S. Army to confirm the memo, and to understand what is specifically meant by ‘cyber vulnerabilities.’ Until then, we ask everyone to refrain from undue speculation.”

*Special thanks to Rick Pryce for sending us this article.*

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The advertisement features three images: a tall transmission tower, a 3D LIDAR point cloud map of a landscape, and a small aircraft on a runway. Below the images is the Pickett Surveying & Engineering logo, which consists of a stylized globe icon and the company name. At the bottom, the company's locations and contact information are listed.

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# San Francisco Chronicle

## Northern Nevada mines adopting drone technology

November 30, 2017

ELKO, Nev. (AP) — The use of unmanned aerial vehicles at mines is taking off in northern Nevada as operators apply the technology to tasks such as surveying and inspections.

The Federal Aviation Administration made way for the commercial use of drones, such as work at mines, when it updated commercial operation rules for small UAVs effective August 2016. Instead of requiring a pilot's license, the federal government allows an operator to pass an aeronautical knowledge test to be able to fly commercially under certain restrictions.

Drone-based businesses have since launched to answer the growing demand for drone equipment and services.

Pennsylvania-based Identified Technologies serves the SSR Mining Inc. Marigold Mine in Valmy, east of Elko, by providing a drone and data-processing services. In January, the company began training its staff and started to work flights into its routine at the run-of-mine heap leach operation.

On a blue-sky day in early October, Marigold Mine Chief Surveyor Alan Clayson unpacked a tote containing a DJI-brand drone with four helicopter blades and coordinating equipment for a demonstration flight.

Watching was Identified Technologies CEO Dick Zhang, visiting the mine on a customer service call. Zhang started the business almost five years ago and got his start serving the construction industry.

"We've come so far. It's so satisfying, so fulfilling," Zhang said, explaining how his role at Marigold has morphed from trainer to spectator now that the mining staff is trained and certified.

Clayton and another employee earned their remote pilot certification through the FAA by com-

pleting an aeronautical knowledge test at an FAA-certified testing center. Marigold staff said they could have another person certified by the end of the year.

After the startup protocol, everyone stood back while Clayson launched the craft. It ascended with a buzzing sound like a mob of mosquitoes and stirred a low cloud of dust. Soon, the small flyer was a mere speck in the sky.

The drone automatically followed a line pattern according to the flight plan and captured data for about 14 minutes while Clayson monitored the object and tablet.

"Most of the magic of the process is after the flight," Zhang said, describing his company's data processing services.

At Marigold, the technology is used mainly for making topographic maps for reports and audits; taking detailed aerial photos of leach pads for solution application management; and inspecting slopes and high-walls in areas with limited access to search for tension cracks, settling and bench integrity.

Future uses at Marigold could include providing power infrastructure inspections, and creating multispectral and thermal maps to improve solution application management and detect hot spots in equipment.

The technology helps save the company manpower and money.

"With traditional methods, it took 20 hours of surveying and processing labor to obtain a detailed survey of a specific section of the mine site," Identified Technologies stated in a press release. "Using Identified Technologies' drone solution, the same results were achieved with (one) hour of work. This has allowed SSR to increase speed and productivity, without increasing staffing costs and headcount, while decreasing the frequency of its full site flyovers."

# Boundaries

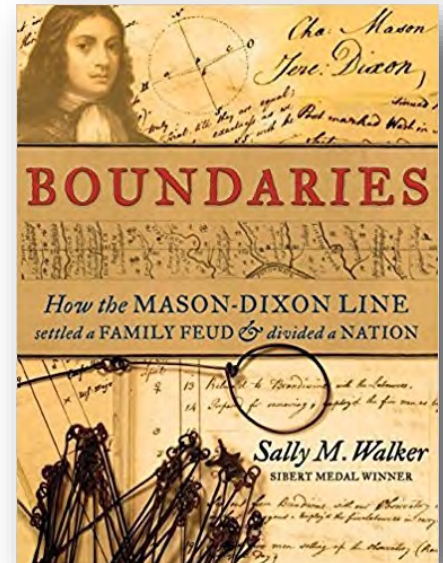
## How the Mason—Dixon Line Settled a Family Feud & Divided a Nation

### Book Synopsis Part I: Chapters 1-3

**Editor's Note:** Today, the Mason-Dixon Line is used to reference the boundary between Southern states and Northern states. This present-day application began during the Civil War. However, the Mason-Dixon Line was actually completed nearly 100 years before the start of the Civil War, and originally served as the boundary line delineating Maryland and Pennsylvania.

The story of the Mason-Dixon Line begins over a century before its completion, in 16th century England. It involves two aristocratic families, the Calverts and the Penns. Across the Atlantic in the New World, the families would find themselves in perhaps the most infamous land dispute in history.

At the time, the Mason-Dixon Line was the largest and most ambitious survey project in history to ever be attempted. Over the next three issues of *The Florida Surveyor*, the entire history of the Mason-Dixon Line will be presented through a synopsis of "Boundaries", by Sally Walker.



George Calvert was born in England in 1579, during the Protestant reign of King James. Because of the anti-Catholic sentiment of the time, only Protestants could attend University and hold government positions. Thus, Calvert had little choice in deciding which religion he would conform to – regardless of his personal preference.



George Calvert.

Calvert attended Oxford University, and in 1603 he became a personal secretary to Sir Robert Cecil, King James's Secretary of State. Calvert steadily rose through the ranks of government and was himself appointed Secretary of State in 1619. As a reward for his loyalty, King James granted him a royal charter in Newfoundland (in present-day northeast Canada).

His official title was Lord Proprietor, which meant he could rule the land as he saw fit, but was still loyal to the throne in England. He was also given the official title of Lord Baltimore.

In 1628, after an extremely harsh winter in his

new colony, Calvert left Newfoundland and settled in the new English colony of Virginia. He asked the newly-crowned King Charles for a new royal charter in the Chesapeake Bay area, with the intention of establishing a land where colonists could have religious freedom. He was granted the colony in 1632, and it was named Maryland, after King Charles's wife, Queen Henrietta Maria. Unfortunately, Calvert would die that same year, and his son Cecil would become the Second Lord Baltimore and Lord Proprietor of Maryland.

In November 1633, the *Ark* and the *Dove* sailed from England with 140 passengers aboard – a mixture of Protestants and Catholics. The pilgrims founded Saint Mary's City near the mouth of the Potomac, and traded with the local Yaocomico Native Americans. Cecil Calvert remained behind in England in order to lobby for the newly-formed colony, so his 27-year-old younger brother, Leonard, was appointed Governor of Maryland.

George Calvert's dream of a free religious colony became a reality, as the new colonists of Maryland could practice whichever religion they chose. But naturally, tensions would rise between the two sides. They suspected that colonists of the other denomination were trying to undermine the other's authority and authenticity.



As expected, the colonists faced incredible hardships in the new land. Hard work was required of everyone, including women and children. Weather and disease would prove fatal to the colonists. In fact, 25% of babies died in their first year, and 50% who survived infancy died before they were 20. Adults didn't live long, either: 75% of men died before they were 50, and women had even shorter life expectancy.

While the colony of Maryland was in jeopardy, things were not much better back home: a civil war was brewing between King Charles and Parliament.



King Charles I.

William Penn was born in London in 1644. His father, William Penn, Sr. was a captain in the Royal Navy. Penn Sr. was a conflicted man: he supported King Charles personally, but the Royal Navy was to side with Parliament in the impending civil war. He would remain with Parliament forces, which went on to win the civil war. King Charles was subsequently executed on January 30, 1649.

Penn Sr. eventually became an Admiral in the Royal Navy, and was granted a castle in Ireland by Oliver Cromwell in 1656. Here, his son was groomed for a

public career during his youth. Around this time, a Quaker missionary came to the castle, and his teachings resonated with young William.

Penn (junior) enrolled at Oxford in 1660. He was almost immediately discontent with university life and was upset about its strict Anglican policies. He pursued his own religious beliefs, and officially joined the Quakers in 1667.



William Penn.

He was expelled from Oxford and imprisoned three times before 1668 and 1671.

In one such instance, Penn was charged with inciting a riot on Gracechurch Street in London. During the trial, he proved to the jurors that he was only speaking his beliefs, and was found innocent by the jurors. However, the presiding judge overturned their ruling, and threw both Penn and the jury into jail. But the case was not yet finished: the jury would later sue the judge, on the grounds that a jury should be able to decide a case without the judge's interference. This case was instrumental in establishing that legal standard, which has influenced the role of the jury in Western governments ever since.

Penn could have paid a fine and been released, but chose to remain in prison. However, his father soon fell ill, and Penn left prison to be with him. William Penn Sr. died just two weeks later.



"The Founding of Maryland", 1634.

# Did YOU Ever WONDER Why?

Michael Whitling, PSM

## Why is something genuine called the “real McCoy?”

The “real McCoy” most likely came from Kid McCoy, the world welterweight boxing champion from 1890 to 1900. The Kid was such a popular fighter that other fighters traveling the small town boxing circuit would claim to be Kid McCoy to draw larger crowds and increase their payouts. The problem of imitators became so severe that McCoy began billing himself as Kid “The Real” McCoy, and from this came the expression we now apply to any genuine article. I said most likely because there are other theories including one about a Pennsylvania man name McCoy who supplied commercial grade nitroglycerine to safecrackers who deemed it superior to homemade products. For real.



## Why when we have a grievance do we have “an axe to grind?”

Although there are a few theories about the origin of the expression “an axe to grind,” one of the most popular comes from a proverbial story dating back to the mid-1800s, in which a man convinces a boy to turn a grindstone so that he can sharpen an axe. The story starts as follows: *“When I was a little boy, I remember, one cold winter morning, I was accosted by a smiling man with an ax on his shoulder. “My pretty boy,” said he, “has your father a grindstone?” “Yes sir,” said I. “You are a fine little fellow!” said he. “Will you let me grind my ax on it?” Pleased with the compliment of “fine little fellow,” “Oh, Yes, sir,” I answered. “It is down in the shop.” Tickled with the flattery, like a little fool, I went to work, and bitterly did I rue the day. It was a new ax, and I toiled and tugged till I was almost tired to death.”* When the school bell rang, the man starts scolding the boy as a truant, chasing him off, and does not pay him. Therefore, the boy now has “an axe to grind” with the man who insults him as a truant and who owes him money.



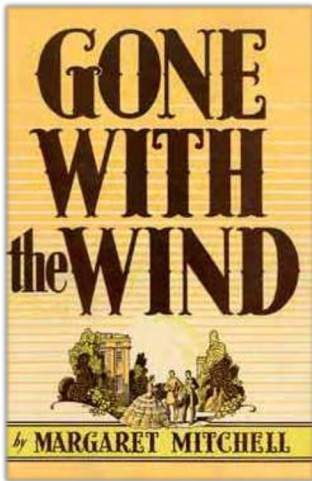
## Why when jurors cannot agree on a verdict it’s called a “hung jury?”

The term “hung jury” has been around since the early 1800’s. A “hung jury” results in a mistrial. The case is not decided, and it may or may not be tried again at a later date before a new jury. This one was tough to figure out. Hang and hung are used in all sorts of ways; he hung a right, a fog hung over the city, get the hang of, let’s hang out. Hang seems to come from a fusion of Old English *hon* meaning suspend and *han-gian* meaning to be suspended. Mostly this refers to the method of execution, hanging, but suspend can also be to temporarily prevent something from continuing which works for a “hung jury.” Note: Teen slang of hang out and hang around as a way to spend time has actually been around since the early 1800’s. And we thought we were so cool.



## Quick Facts:

⇒ Ba! Ba! Black Sheep was one of several working titles Margaret Mitchell used for her most famous novel, *Gone With the Wind*. She also considered the titles *Tote the Weary Load*, *Bugles Sang True*, *Not In Our Stars*, and *Tomorrow is Another Day* before finally settling on a phrase that she had used in the critical scene where Scarlett returns to Tara and asks, "Was Tara still standing? Or was Tara also gone with the wind which had swept through Georgia?"



- ⇒ PE teachers were originally banned from the modern Olympics because they were professionals.
- ⇒ The ancient Greek city of Megara held a version of the Olympic Games that included a kissing contest. Only boys were allowed to enter.
- ⇒ The fastest 100 meters run by an eight-year-old today would have won bronze at the 1896 Olympics.
- ⇒ In 1910 Alice Wells became the 1st policewoman in the US. She was hired by the Los Angeles Police Department. She was allowed to design her own uniform and was active in propagating the need for policewomen elsewhere. As a result of her efforts seventeen departments in America were employing policewomen by 1916.



- ⇒ The little lump of flesh just forward of your ear canal, right next to your temple, is called a tragus.
- ⇒ Your stomach cells secrete hydrochloric acid, a corrosive compound used to treat metals in the industrial world. It can pickle steel, but mucous lining the stomach wall keeps this poisonous liquid safely in the digestive system.
- ⇒ The smallest country in the world is the Vatican. It also is the only country where Latin is the official language



- ⇒ Tequila is Mexico's national drink. While Mexico is where tequila originated, the United States consumes twice as much tequila. On average, Americans purchase 12.3 million cases of tequila a year. Good tequila, supposedly, does not result in hangovers. That said, it does have a mild hallucinogenic effect.
- ⇒ The pupil of the eye expands as much as 45 percent when a person looks at something pleasing.
- ⇒ After returning to Earth, many astronauts have a difficult time adjusting to gravity and often forget that things fall if you drop them.
- ⇒ Cheddar cheese is naturally white or pale yellow. These days, much of it is dyed orange with seeds from the annatto plant, and early cheese makers used carrot juice and marigold petals.



- ⇒ The tradition that inspired the phrase "You may kiss the bride" probably originated in ancient Rome. To seal their marriage contract, couples kissed in front of a large group of people. The Romans had three different categories of kisses: osculum, a kiss on the cheek; basium, a kiss on the lips; and savolium, a deep kiss.
- ⇒ Fifteen million blood cells are produced and destroyed in the human body every second.

*Send your thoughts to [drmjw@aol.com](mailto:drmjw@aol.com)*





# PLUMB LINES



VOLUME III, ISSUE #5  
FEBRUARY, 1982



## FLORIDA'S ECONOMY - SHARP '82 SLOWDOWN--THEN BOOM-----FORECASTS

Look for an economic boom to follow a dramatic slowdown of growth in the state in 1982, reports Hank Fishkind, Associate Director of the Bureau of Economic and Business Research at the University of Florida.

As 1982 dawned..the Sunshine State was just beginning to feel the effects of the national recession, but lower interest rates and reduced inflation should fuel the boom in 1983-84, says Fishkind. Tourism and construction are two sectors hit hardest during the current decline. Meanwhile, population and non-agricultural employment tend to score gains. Looking ahead, Fishkind projects:

**Population:** growth will slow in 1982 to 2.8 percent, compared to 1981's pace of 3.6 percent. Recovery of the housing market in 1982, coupled with renewed employment growth will stimulate rapid population growth in 1983 and 1984.

**Housing:** starts will dip in 1982 to 144,300. Renewed population growth and lower mortgage rates set the stage for starts to reach 195,300 in 1983 and 222,300 the following year.

**Tourism:** will receive a boost in the second half of 1982; and by 1984, 38.4 billion tourists will visit Florida. (That compares with 32.2 million in 1981 and 33.7 million projected for 1982).

**Employment:** growth in non-agricultural jobs will be flat in the first half of 1982 but will reach new highs in 1983 and 1984 because of resurgent population growth, an upswing in housing starts and beefed up defense spending.

**Income:** real personal income is projected to post modest gains of 5.4 and 5.1 percent in 1982 and 1983, respectively. A robust 7.8 percent gain is forecast in 1984.

Still another prognosticator paints a somewhat less rosy picture--the State Revenue Estimating Conference forecasts state personal income after inflation will rise by 3.5 percent in 1982; unemployment will average 7.1 percent; the prime rate will average 18.2 percent; and mortgage rates will hover around 15.1 percent by the end of the year.

THE OFFICES OF THE FLORIDA SOCIETY OF PROFESSIONAL LAND SURVEYORS HAVE MOVED!! OUR NEW ADDRESS IS NOW 119 NORTH GADSDEN STREET, TALLAHASSEE, FLORIDA 32301. PLEASE MAKE THE NECESSARY CHANGES IN YOUR RECORDS. THANK YOU!!!

## WALT DISNEY'S MAGIC KINGDOM CLUB

### OFFERS NATIONAL CAR RENTAL

#### DISCOUNT

Now members of FSPLS can enjoy a 10% discount off the lowest applicable rate offered by National at participating locations in the U.S. That even includes Weekend or Holiday Specials and Weekly Vacation Saver Rates!

INSTRUCTIONS: Present your valid Magic Kingdom Club Membership card at the time of rental, and you will receive the special Club discounts indicated below. Some locations may limit the number of free miles per day, and a few may offer other rates. Member pays for gas used. Discounts do not apply to Package Tour Rates.

#### REMEMBER, IF YOU HAVE NOT PAID

#### YOUR 1982 DUES, YOU HAVE UNTIL

#### MARCH 31 AND THEN YOU WILL BE

#### DELETED FROM THE MAILING LIST!

#### PLEASE SUPPORT YOUR SOCIETY BY

#### SUBMITTING YOUR DUES AS SOON AS

#### POSSIBLE!! THANKS!!

## Florida Society of Professional Land Surveyors

An Affiliate Of The American Congress On Surveying And Mapping Since 1956

Henry T. Vinson  
Executive Director and Editor

NEWSLETTER

Jeannie Paugh  
Executive Secretary

**From February 1982:** Plumblines, the original FSMS newsletter. The newsletter began in 1974, but was renamed Plumblines in 1980. (zoom in to read)



# Around the State



*Geospatial User Group's (GUG) first meeting since its reboot at Valencia College in Orlando. Over 30 people attended and Wantman Group sponsored the food. Allen Nobles is seen presenting in this picture.*

## Land Surveyors In Action

Click on the picture to view the video!



*Thank you to Rick Pryce for showing us this video!*

## Protecting Yourself at the Pump

Many Floridians travel to see friends and family during the holiday season, and the U.S. Department of Transportation reports that about 91 percent of long-distance holiday travel is by personal vehicle. It's imperative to take precautions against scammers aiming to profit off holiday travel.

Card skimmers are small, electronic devices that capture information from the magnetic strip on credit or debit cards when swiped during a transaction. Over 900 of these skimmers have been found on gas pumps in Florida since March 2015, and individual skimmers have been found to hold as many as 100 credit card numbers. These devices were commonly attached to card readers on the outside of the pump, but some criminals now install skimmers inside the pump and use Bluetooth technology to transmit card and pin information. These devices are undetectable unless the pump is opened for maintenance or inspection.

Here are a few tips that will reduce your risk of encountering skimmers at the pump:

- Pay inside with either cash or a credit card.
- Use a pre-paid cash card to pay for your gas at the pump.
- Do not use a pump that looks as though it has been tampered with.
- Use the pumps closest to the front of the station, as scammers usually place skimmers in pumps furthest out of sight.
- Monitor your credit and bank accounts regularly for unauthorized activity.

If you identify unauthorized activity on your accounts, contact your bank or credit card company, file a report with local authorities, and consider placing a credit freeze or fraud alert on your accounts.



# The FSMS Marketplace



## Used Fixed Height Tripods (2m)

\$100 + \$7.50 tax

⇒ Must pick up in Tallahassee

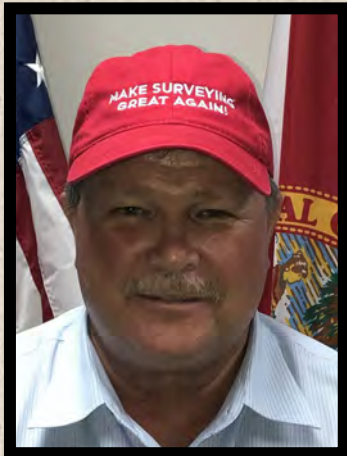
⇒ 100% of sale donated to FSMS Disaster Relief Fund



## FSMS Coolers

\$18 (\$15 + shipping and tax)

⇒ \$5 of each purchase is donated to the FSMS Disaster Relief Fund



## Make Surveying Great Again Caps

\$18 (\$15 + shipping and tax)

⇒ Available in neon

⇒ \$5 of each purchase is donated to the FSMS Disaster Relief Fund



Order company caps with your logo and the FSMS logo!

24 hats for \$258 (\$10 per hat + tax)

⇒ Donations to the FSMS Disaster Relief Fund appreciated

*To purchase caps, coolers or tripods, email [communications@fsms.org](mailto:communications@fsms.org) or call 850-942-1900.*





## 2018 NSPS and AAGS Scholarship Program



Each year, through the National Society of Professional Surveyors Foundation, over \$30,000 dollars in scholarships funded by a variety of individuals, companies, and organizations are made available to encourage and support college education in geospatial sciences. These scholarships are a great opportunity for college students in surveying, mapping, geographic information systems, and geodetic science programs. The application deadline is January 15, 2018.

Contact information: Scholarships, 5119 Pegasus Court, Suite Q, Frederick, MD 21704; 240-439-4615, ext. 105; fax 240-439-4952; [trisha.milburn@nsps.us.com](mailto:trisha.milburn@nsps.us.com)

### SELECTION PROCESS

Recipients of scholarships are selected by a Scholarship Committee drawn from the Board of Trustees of the NSPS Foundation, Inc. and other scholarship-funding entities. The committee has the option of awarding no scholarships if its members come to the conclusion that none of the applicants is deserving.

### SELECTION CRITERIA

Scholarships will be awarded based on the following criteria:

- 30% academic record;
- 30% applicant's statement;
- 20% letters of recommendation;
- 20% professional activities;

Degree of financial need will be used, if necessary, to break ties, after the primary criteria have been considered.

### NOTIFICATION

Selected recipients of scholarships will be notified by letter. In addition, the names of the recipients will be published at [www.nsps.us.com](http://www.nsps.us.com), [www.aagsmo.org](http://www.aagsmo.org), and in the *NSPS News and Views* newsletter. Scholarship checks will be mailed to the address on the application.

### SCHOLARSHIPS

#### CATEGORY 1

Students enrolled in (2) two year degree programs in surveying technology.

**\$2000 BERNTSEN INTERNATIONAL SCHOLARSHIP IN SURVEYING TECHNOLOGY**— Awarded by Berntsen International Inc., Madison, Wisconsin. Awarded in ***EVEN years only.***

#### CATEGORY 2

Students enrolled in, or accepted to, a graduate program in geodetic surveying or geodesy.

#### **\$2000 AAGS GRADUATE FELLOWSHIP AWARD —**

Awarded by the American Association for Geodetic Surveying (AAGS). Preference will be given to applicants having at least two years of employment experience in the surveying profession.

#### CATEGORY 3

Students enrolled in (4) four year degree programs in surveying (or in closely related degree programs such as geomatics or surveying engineering).

#### **\$2000 AAGS JOSEPH F. DRACUP SCHOLARSHIP AWARD —**

Awarded by the American Association for Geodetic Surveying (AAGS). Preference will be given to applicants enrolled in programs with a significant focus on geodetic surveying.

#### **\$2000 BERNTSEN INTERNATIONAL SCHOLARSHIP IN SURVEYING—**

Awarded by Berntsen International Inc., Madison, Wisconsin.

**\$2000 NSPS SCHOLARSHIP —** Awarded by the National Society of Professional Surveyors (NSPS). This scholarship is given to an outstanding student enrolled full-time in an undergraduate surveying programs.

#### **\$2000 NETTIE DRACUP MEMORIAL SCHOLARSHIP**

— This scholarship is intended to provide financial assistance to U. S. citizens enrolled in an undergraduate program in Geodetic Surveying at an ABET-accredited college or university.

### **\$2000 SCHONSTEDT SCHOLARSHIP IN SURVEYING**

— The Schonstedt Instrument Company, Kearneysville, West Virginia, funds this scholarship each year to support a student enrolled in an undergraduate surveying programs. Preference will be given to applicants with Junior or Senior standing.

**\$2500 WALTER ROBILLARD SCHOLARSHIP IN SURVEYING** - Sponsored by the New Jersey Society of Professional Land Surveyors (NJSPLS). The scholarship shall be awarded to a full time undergraduate student enrolled in a (4) four year ABET accredited program from a college or university in one of the following disciplines; surveying, geomatics, or geodesy.

### **CATEGORY 4**

Students enrolled in (2) two or (4) four year surveying (and closely related) degree programs, either full or part-time.

**\$5000 NEW JERSEY SOCIETY OF PROFESSIONAL LAND SURVEYORS SCHOLARSHIP FOR LAND SURVEYING EDUCATION**—The scholarship will be awarded to a student in a (2) two or (4) four year ABET accredited program in land surveying or closely related field. Preference will be given to New Jersey residents. ***This scholarship will be awarded in AUGUST 2018.***

**\$2000 CADY MCDONNELL MEMORIAL SCHOLARSHIP** — This scholarship is intended to support female students and is awarded in **ODD years only**. The applicant must be a resident of one of the following western states: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming,. Proof of legal home residence must be submitted with the application.

### **\$2000 NSPS BOARD OF DIRECTORS SCHOLARSHIP**

— This scholarship is available to students enrolled in a (4) four-year degree program in surveying, who are entering their Junior year of study and who have maintained a minimum 3.0 grade point average. It is awarded in **EVEN years only**.

### **\$2000 TRI- STATE SURVEYING AND PHOTOGRAMMETRY KRIS M. KUNZE MEMORIAL SCHOLARSHIP**

— This scholarship is available to candidates throughout the United States. First priority will be given to candidates who are licensed Professional Land Surveyors or Certified Photogrammetrists pursuing college-level courses in Business Administration or Business Management. Second priority candidates are certified Land Survey Interns pursuing college- level courses in Business Administration or Business Management. Third priority candidates are full-time students enrolled in a (2) two or (4) four-year degree program in Surveying and Mapping pursuing a course of study including Business Administration or Business Management. It is awarded in **ODD years only**.

### **\$2000 LOWELL H. AND DOROTHY LOVING UNDERGRADUATE SCHOLARSHIP**

— This scholarship is available to students in either their Junior or Senior year who are pursuing a 4-year degree at a university or college in the United States. In addition to a course in basic surveying, an applicant's program of study must include courses from at least two of the following areas: land surveying; geometric geodesy; photogrammetry/remote sensing; or analysis and design of spatial measurement systems. Additional coursework, which is desirable but not required, includes theory and applications of geographic information systems, cartography, digital image processing, spatial modeling and analysis, and spatial statistics.

### **\$2000 SLAVOJ (Dr. Ing. Desider E.) SCHOLARSHIP**

- Awarded by the National Society of Professional Surveyors (NSPS) to a student enrolled in a (2) two or (4) four year undergraduate degree program at an ABET accredited college or university in the field of surveying engineering.



# 2018 NSPS and AAGS Scholarship Program

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## APPLICATION INSTRUCTIONS

Applicants should select the scholarship Category for which they are most eligible. Categories include:

### Category 1

Students enrolled in (2) two year degree programs in surveying technology.

### Category 2

Students enrolled in, or accepted to, a graduate program in geodetic surveying or geodesy.

### Category 3

Students enrolled in (4) four year degree programs in surveying (or in closely related degree programs such as geomatics or surveying engineering). Applicants in Category 3 may apply for any of several awards in that category for which they wish to be considered.

**Category 4** - Students enrolled in (2) two or (4) four year surveying (and closely related) degree programs, either full or part-time. Applicants in Category 4 may apply for any of the awards in that category for which they wish to be considered.

Applicants who apply for Category 1 through 3 awards may also apply in Category 4.

## HOW TO APPLY

Applications for scholarships should include the following information:

1. A completed application form.
  2. Proof of student membership will be checked. Student membership in NSPS is required for all scholarships except for AAGS GRADUATE FELLOWSHIP AWARD in Category 2 and the AAGS JOSEPH F. DRACUP SCHOLARSHIP AWARD in Category 3. For these two scholarships Student membership in AAGS is required. Applicants who are not members may go to the NSPS web site at [www.nsp.us.com](http://www.nsp.us.com) or the AAGS website at [www.aagsmo.org](http://www.aagsmo.org), as appropriate, for more information on how to join.
  3. A brief, yet complete, statement indicating educational objectives, future plans of study or research, professional activities, and financial need.
  4. Three letters of recommendation (at least two from faculty members familiar with the student's work).
  5. A complete original official transcript through the end of the school year prior to when the scholarship will be presented. Additionally, as soon as available, please send unofficial transcripts for the most recently completed semester.
- Incomplete or improperly completed applications will be discarded.
  - Applications for all scholarships must arrive at NSPS headquarters no later than 5:00 p.m. January 15, 2018. Late applications will not be accepted.
  - With the exception of students in Category 1 and undergraduates in Category 2, students planning to graduate prior to December 2017 are not eligible for a scholarship.
  - Mail all documents in ONE envelope. Applications sent by fax or e-mail will not be accepted. Return completed applications to:

**NSPS and AAGS Scholarships, 5119 Pegasus Court, Suite Q, Frederick, MD 21704**



# 2018 NSPS and AAGS Scholarship Application Form



Mail Application to: NSPS/AAGS Scholarships, 5119 Pegasus Court, Suite Q, Frederick, MD 21704

Inquiries: 240-439-4615 ext. 105 or [trisha.milburn@nsps.us.com](mailto:trisha.milburn@nsps.us.com) **Application deadline - January 15, 2018**

## Scholarships Offered

### **Category 1: (Students enrolled in (2) two year degree programs in surveying technology.)**

- ☐ Bernsten International Scholarship in Surveying Technology (\$2000)

### **Category 2: (Students enrolled in, or accepted to, a graduate program in geodetic surveying or geodesy.)**

- ☐ American Association for Geodetic Surveying Graduate Fellowship (\$2000)

### **Category 3: (Students enrolled in (4) four year degree programs in surveying (or in closely related degree programs such as geomatics or surveying engineering.)**

- ☐ AAGS Joseph F. Dracup Scholarship (\$2000)
- ☐ Bernsten International Scholarship in Surveying (\$2000)
- ☐ NSPS Scholarship (\$2000)
- ☐ Nettie Dracup Memorial Scholarship (\$2000) - 2 awarded
- ☐ Schonstedt Scholarship in Surveying (\$2000)
- ☐ Walter Robillard Scholarship in Surveying sponsored by the New Jersey Society (NJSPLS) (\$2500)

### **Category 4: (Students enrolled in (2) two or (4) four year surveying (and closely related) degree programs, either full or part-time)**

- ☐ New Jersey Society of Prof. Land Surveyors Scholarship for Land Surveying Education (\$5000)  
*(The NJSPLS Scholarship will be awarded in August 2018)*
- ☐ NSPS Board of Directors Scholarship (\$2000)
- ☐ Lowell H. and Dorothy Loving Undergraduate Scholarship (\$2000)
- ☐ Slovoj (Dr. Ing Desider E.) Scholarship (\$2000)

## Personal Information

Full Name \_\_\_\_\_

Full Address \_\_\_\_\_

Phone Number \_\_\_\_\_ Email Address \_\_\_\_\_

Place of Birth \_\_\_\_\_ US Citizen? Yes ☐ No ☐ Last 4 digits of Social Security # \_\_\_\_\_

Student Member Number \_\_\_\_\_

(Note: You can apply for membership with your scholarship application. Visit [www.nsps.us.com](http://www.nsps.us.com) or [www.aagsmo.org](http://www.aagsmo.org) for an application.)



## 2018 NSPS and AAGS Scholarships

### Educational Institution and Course Details

College or University _____
Curriculum enrolled in _____
Field of Specialization (ie: Geomatics, Geodesy, Survey Engineering, etc.) _____
Enrollment dates _____
If currently not enrolled in a course, please give reason for interruption in enrollment (i.e. military training, illness etc.) _____ _____
Faculty advisor _____ Phone Number _____
Email address _____

### Checklist

<i>Enclose any statements required by the deed of the scholarship you are applying for</i>	
<input type="checkbox"/>	Complete Application
<input type="checkbox"/>	Proof of Membership
<input type="checkbox"/>	Statement
<input type="checkbox"/>	Letters of Recommendation
<input type="checkbox"/>	Transcripts

### Declaration

I certify that the information given in this application is true and accurate. I further certify that if for any reason subsequent to receiving a scholarship, I elect to substantially alter my proposed study plan, I will immediately inform NSPS or AAGS, as appropriate, and if requested, I will return the money paid to me.	
_____ Signature of applicant	_____ Date

### Reminders

<ul style="list-style-type: none"><li>• Do not send application by fax or email</li><li>• Include one set of original transcripts</li><li>• Include one copy of completed application</li><li>• If possible mail all documents in one packet</li></ul>	<ul style="list-style-type: none"><li>• Deadline January 15, 2018</li><li>• Mail completed application to: NSPS and AAGS Scholarships 5119 Pegasus Ct, Suite Q, Frederick, MD 21704</li></ul>
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## Florida Surveying and Mapping Society

# 2017 eLearning Courses



Basics of Real Property  
Course #8360 (3 General  
CEC)

**\$ 70<sup>00</sup>**



Boundaries in Florida  
Course #8255 (6  
SOP/L&R CEC)

**\$ 120<sup>00</sup>**



Contracts for the  
Professional Course  
#8412 (3 General CEC)

**\$ 70<sup>00</sup>**



Elevation Certificates and  
the Community Rating  
System Course #8256 (3  
General CEC)

**\$ 70<sup>00</sup>**



Ethics for the Design  
Professional Course  
#8621 (6 General CEC)

**\$ 120<sup>00</sup>**



Florida Laws Course  
#7149 (6 SOP/L&R CEC)

**\$ 120<sup>00</sup>**



Professional Ethics and  
Professional Courtesy  
FULL Video Course  
#8363 (6 General CEC)

**\$ 120<sup>00</sup>**



Georgia Technical  
Standards for Property  
Surveys Course #8554 (6  
General CEC)

**\$ 120<sup>00</sup>**



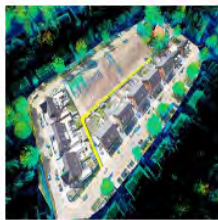
History of Surveying  
Course #7140 (6 General  
CEC)

**\$ 120<sup>00</sup>**



Identification of Native  
and Non-Native Trees in  
Florida Course #8132 (6  
General CEC)

**\$ 120<sup>00</sup>**



Introduction to  
Photogrammetry Course  
#7968 (3 General CEC)

**\$ 70<sup>00</sup>**



Land Tenure and  
Cadastral Systems  
Course #8260 (6 General  
CEC)

**\$ 120<sup>00</sup>**



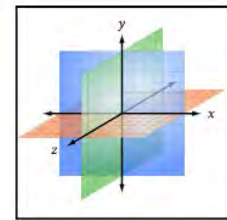
Map Projections and  
Plane Coordinate  
Systems Course #8261 (6  
General CEC)

**\$ 120<sup>00</sup>**



Mean High Water  
Observations &  
Computations Course  
#8262 (6 General CEC)

**\$ 120<sup>00</sup>**



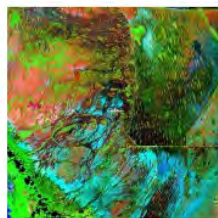
Practical Geometry for  
Surveyors Course #7141  
(6 General CEC)

**\$ 120<sup>00</sup>**



Public Land Survey  
System Course #7147 (6  
General CEC)

**\$ 120<sup>00</sup>**



Remote Sensing  
Applications to Surveying  
& Mapping Course #7148  
(6 General CEC)

**\$ 120<sup>00</sup>**



Writing Boundary  
Descriptions Course  
#8362 (3 General CEC)

**\$ 70<sup>00</sup>**





# Correspondence Courses



## Step 1: Choose Course(s)

- ☐ **5J-17 Standards of Practice (SOP)**, #6962, 6 SOP/L&R CEC
- ☐ **A History of the Prime Meridian Marker**, #8403, 3 General CEC
- ☐ **Basics of Real Property**, #8359, 3 General CEC
- ☐ **Boundaries in Florida**, #7667, 6 SOP/L&R CEC
- ☐ **Chapter 177, Platting (Plat Law)**, #6970, 6 SOP/L&R CEC
- ☐ **Client Satisfaction Excellence for Surveying and Mapping Professionals**, #7229, 6 General CEC (*Only available by mail*)
- ☐ **Contracts for the Professional**, #8411, 3 General CEC
- ☐ **Critical Communication for Surveying & Mapping Professionals**, #7228, 6 General CEC (*Only available by mail*)
- ☐ **Digital Signatures for Surveyors**, #8491, 3 General CEC
- ☐ **Elevation Certificates and the Community Rating System**, #8257, 3 General CEC
- ☐ **Ethics for the Design Professional**, #8620, 6 General CEC
- ☐ **Florida Laws**, #6966, 6 SOP/L&R CEC
- ☐ **Georgia Technical Standards for Property Surveys**, #8553, 6 General CEC
- ☐ **Geographic Information Systems (GIS)**, #7107, 6 General CEC
- ☐ **History of Surveying**, #7108, 6 General CEC
- ☐ **Identification of Native and Non-Native Trees in Florida**, #7874, 6 General CEC
- ☐ **Introduction to Photogrammetry**, #7887, 3 General CEC
- ☐ **Land Tenure and Cadastral Systems**, #7829, 6 General CEC
- ☐ **Map Projections and Plane Coordinate Systems**, #7669, 6 General CEC
- ☐ **Mean High Water Observations and Computations**, #8220, 6 General CEC
- ☐ **Practical Geometry for Surveyors**, #7109, 6 General CEC
- ☐ **Public Land Survey System**, #6979, 6 General CEC
- ☐ **Remote Sensing Applications to Surveying & Mapping**, #6972, 6 General CEC
- ☐ **Stress Management for Surveyors & Mappers: How to be Productive Under Pressure**, #6902, 6 General CEC (*Only available by mail*)
- ☐ **Time Management for Surveyors & Mappers: How to be Productive & Exercise Time Mastery in A Hectic World**, #6901, 6 General CEC (*Only available by mail*)
- ☐ **Writing Boundary Descriptions**, #8361, 3 General CEC



# Correspondence Courses Order Form

## Step 2: Choose Member Type

☐ **FSMS Member**

<b>EMAILED</b>		<b>Quantity</b>			
<b>6 CEC</b>	\$115 Per Course	x	_____	=	\$ _____
<b>3 CEC</b>	\$58 Per Course	x	_____	=	\$ _____
<b>MAILED</b>					
<b>6 CEC</b>	\$125 Per Course	x	_____	=	\$ _____
<b>3 CEC</b>	\$68 Per Course	x	_____	=	\$ _____
<b>TOTAL</b>			_____		\$ _____

☐ **Non-Member**

<b>EMAILED</b>	<b>Fee</b>		<b>Quantity</b>		<b>Amount</b>
<b>6 CEC</b>	\$135 Per Course	x	_____	=	\$ _____
<b>3 CEC</b>	\$78 Per Course	x	_____	=	\$ _____
<b>MAILED</b>					
<b>6 CEC</b>	\$145 Per Course	x	_____	=	\$ _____
<b>3 CEC</b>	\$88 Per Course	x	_____	=	\$ _____
<b>TOTAL</b>			_____		\$ _____

☐ **Non-Licensed in ANY State**

<b>EMAILED</b>	<b>Fee</b>		<b>Quantity</b>		<b>Amount</b>
<b>6 CEC</b>	\$100 Per Course	x	_____	=	\$ _____
<b>3 CEC</b>	\$60 Per Course	x	_____	=	\$ _____
<b>MAILED</b>					
<b>6 CEC</b>	\$110 Per Course	x	_____	=	\$ _____
<b>3 CEC</b>	\$70 Per Course	x	_____	=	\$ _____
<b>TOTAL</b>			_____		\$ _____

## Step 3: Payment Information

Name: \_\_\_\_\_ PSM#: \_\_\_\_\_ State: \_\_\_\_\_ FSMS Member: \_\_\_\_ YES \_\_\_\_ NO

Firm: \_\_\_\_\_ Sustaining Firm: \_\_\_\_ YES \_\_\_\_ NO

Address: \_\_\_\_\_

City/State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Email Address: \_\_\_\_\_ Work Phone: \_\_\_\_\_

Payment Information: \_\_\_\_\_ Check Enclosed (Payable to FSMS) \_\_\_\_\_ VISA/MasterCard/American Express

Card #: \_\_\_\_\_ Exp. Date: \_\_\_\_\_ Card CVV Number (3 or 4 Digits) \_\_\_\_\_

Billing Address for Credit Card: \_\_\_\_\_

Signature: \_\_\_\_\_

IF PAYING BY CHECK, MAIL FORM TO: FSMS, P.O. Box 850001-243, Orlando, FL 32885-0243

IF PAYING BY CREDIT CARD - EMAIL FORM TO [education@fsms.org](mailto:education@fsms.org) or FAX TO 850.877.4852

QUESTIONS? CALL 800.237.4384



## District 1

### Panhandle

David Glaze  
(850) 434-6666  
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### Emerald Coast

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### Chipola Area

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### Northwest Florida

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## District 2

### Florida Crown

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cfaust@drmp.com

### North Central Florida

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### UF Geomatics

Eric Didion  
(352) 272-1835  
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## District 3

### Central Florida

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### Indian River

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tdittman@bowmanconsulting.com

### Space Coast

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Joew.fsms@gmail.com

### Volusia

Anthony Sanzone

## District 4

### Ridge

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### Tampa Bay

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(813) 321-5775  
cwild@drmp.com

## District 5

### Charlotte Harbor

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### Collier-Lee

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### Manasota

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## District 6

### Broward

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(954) 739-6400  
rpryce@craventhompson.com

### Palm Beach

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(561) 655-1151  
kbeck@engenuitygroup.com

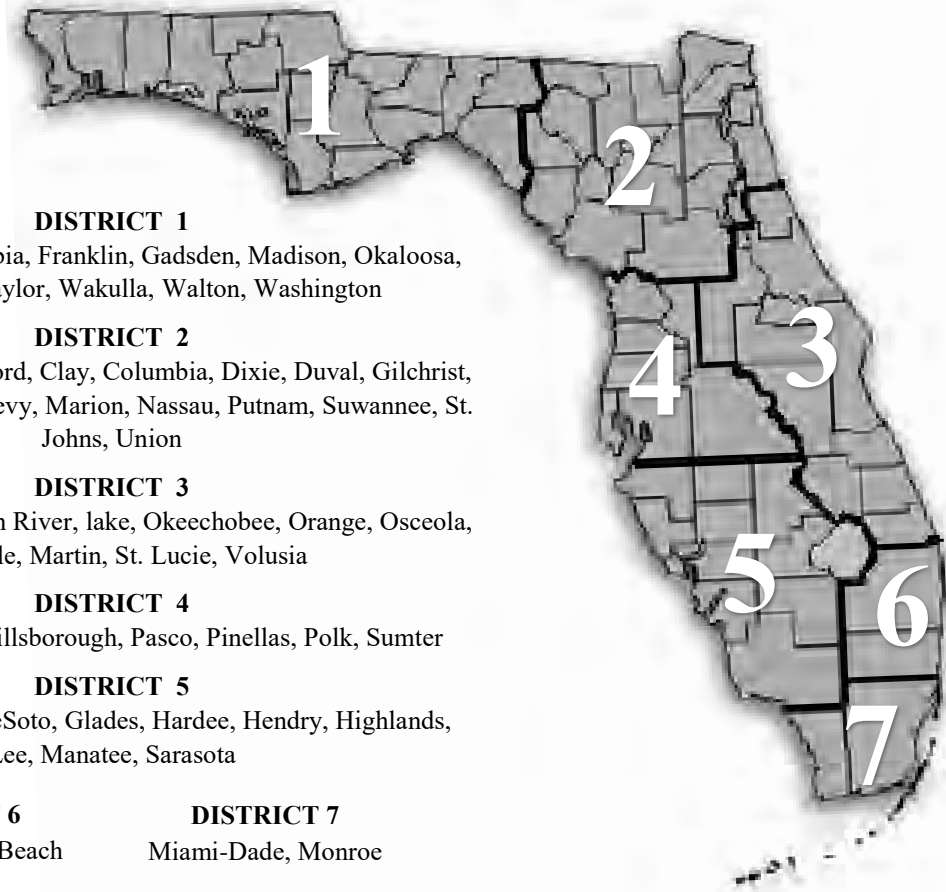
### FAU Geomatics

Da'Neil Campbell  
dcampb11@fau.edu

## District 7

### Miami-Dade

John Liptak  
(305) 597-9701  
jliptak@masterconsulting.com



## **DISTRICT 1**

Bay, Calhoun, Escambia, Franklin, Gadsden, Madison, Okaloosa,  
Santa Rosa, Taylor, Wakulla, Walton, Washington

## **DISTRICT 2**

Alachua, Baker, Bradford, Clay, Columbia, Dixie, Duval, Gilchrist,  
Hamilton, Lafayette, Levy, Marion, Nassau, Putnam, Suwannee, St.  
Johns, Union

## **DISTRICT 3**

Brevard, Flagler, Indian River, Lake, Okeechobee, Orange, Osceola,  
Seminole, Martin, St. Lucie, Volusia

## **DISTRICT 4**

Citrus, Hernando, Hillsborough, Pasco, Pinellas, Polk, Sumter

## **DISTRICT 5**

Collier, Charlotte, DeSoto, Glades, Hardee, Hendry, Highlands,  
Lee, Manatee, Sarasota

## **DISTRICT 6**

Broward, Palm Beach

## **DISTRICT 7**

Miami-Dade, Monroe

## **District 1 - Northwest**

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Justin@polaris-survey.com

## **NSPS Director**

Ronnie Figueroa  
(407) 292-8580  
rfigueroa@southeasternsurveying.com



## Committees

### Standing Committees

<b>Nominating Committee</b>	Dianne Collins
<b>Membership Committee</b>	Joe Perez
<b>Finance Committee</b>	Bon Dewitt
<b>Executive Committee</b>	Bob Strayer
<b>Education Committee</b>	Don Elder
<b>Annual Meeting Committee</b>	Tom Brownell
<b>Legal Committee</b>	Jack Breed
<b>Strategic Planning Committee</b>	Dianne Collins
<b>Ethics and Professional Practice Committee</b>	John Liptak
<b>Constitution and Resolution Advisory Committee</b>	Art Mastronicola

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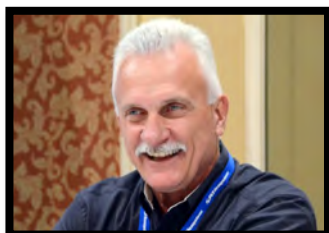
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<b>Young Professionals Committee</b>	Chris Wild
<b>Awards Committee</b>	Lou Campanile, Jr.
<b>UF Alumni Recruiting Committee</b>	Jeff Cooner

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<b>FDACS BPSM</b>	Don Elder
<b>Surveyors in Government</b>	Richard Allen
<b>Academic Advisory UF</b>	Bon Dewitt

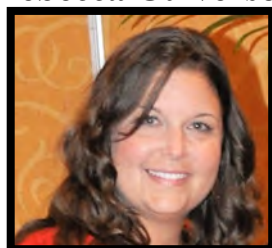
## Administrative Staff

### Tom Steckler



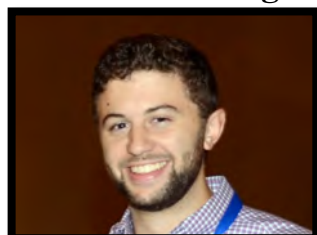
Executive Director  
director@fsms.org

### Rebecca Culverson



Education Director  
education@fsms.org

### Dominic Levings



Communications Director  
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### Cathy Campanile



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seminolecc84@gmail.com

## Tom's Tip of the Month

### Everyday Leadership

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The Florida Surveyor is the official publication of the Florida Surveying and Mapping Society, Inc. (FSMS). It is published monthly for the purpose of communicating with the professional surveying community and related professions who are members of FSMS. Our award winning publication informs members eleven months of the year of national, state, and district events and accomplishments as well as articles relevant to the surveying profession. The latest educational offerings are also included.

## 2017-2018 Sustaining Firms

A M Engineering, Inc.	941-377-9178	Caulfield & Wheeler, Inc.	561-392-1991
Accuright Surveys Of Orlando, Inc .	407-894-6314	Causeaux Hewett & Walpole, Inc.	352-331-1976
Aerial Cartographics Of America, Inc.	407-851-7880	Central Florida Surveys, Inc.	407-262-0957
Aim Engineering & Surveying, Inc.	239-332-4569	Chastain-Skillman, Inc.	863-646-1402
All County Surveyors, Inc.	800-860-9119	Choctaw Engineering, Inc.	850-862-6611
Allen & Company, Inc.	407-654-5355	Civilsurv Design Group, Inc.	863-646-4771
Allen Engineering, Inc.	321-783-7443	Clary & Associates, Inc.	904-260-2703
AllTerra Florida, Inc.	954-850-0795	Coffin & Mclean Associates, Inc.	352-683-5993
Alvarez, Aiguesvives & Associates, Inc.	305-220-2424	Collins Survey Consulting LLC	863-937-9052
AM Engineering, Inc.	941-377-7178	Compass Engineering & Surveying, Inc.	727-822-4151
American Consulting Engineers Of FL, LLC	813-435-2600	Compass Point Surveyors PL	954-332-8181
American National Commercial Real Estate Service, LLC	239-963-2245	Control Point Associates FL, LLC	908-668-0099
American Surveying, Inc .	813-234-0103	Controlcam, LLC	904-758-2601
Amertritt, Inc.	813-221-5200	Countywide Surveying, Inc.	850-769-0345
ARC Surveying & Mapping, Inc.	904-384-8377	Cousins Surveyors & Associates, Inc.	954-689-7766
Associated Land Surveying & Mapping, Inc.	407-869-5002	CPH, Inc.	407-322-6841
ATS Land Surveying, LLC	386-264-8490	Craven-Thompson & Assoc, Inc.	954-739-6400
Avirom & Associates, Inc.	561-392-2594	Cross Surveying, LLC	941-748-8340
Bannerman Surveyors, Inc.	850-526-4460	Culpepper & Terpening, Inc.	772-464-3537
Barraco And Associates, Inc.	239-461-3170	Dagostino & Wood, Inc.	239-352-6085
Bartram Trail Surveying, Inc.	904-284-2224	Deal Land Surveying LLC	407-878-3796
Baseline Engineering And Land Surveying, Inc.	561-417-0700	Degrove Surveyors, Inc.	604-722-0400
Bay Area Sinkhole Investigation & Civil Engineering, LLC	813-885-4144	Dennis J. Leavy & Associates	561-753-0650
Bay Area Surveying And Mapping, Inc.	727-271-0146	Deren Land Surveying LLC	352-331-0010
BBLS Surveyors, Inc.	239-597-1315	Diversified Design & Drafting Services, Inc.	850-385-1133
Bean Whitaker Lutz & Kareh, Inc.	239-481-1331	DMK Associates, Inc.	941-475-6596
Banks Engineering	239-939-5490	Donald F. Lee & Associates, Inc.	386-755-6166
Bello & Bello Land Surveying Corporation	305-251-9606	Donald W. McIntosh Associates, Inc.	407-644-4068
Benchmark Land Services, Inc.	239-591-0778	Donoghue Construction Layout LLC	321-248-7979
Benchmark Surveying And Land Planning	850-994-4882	Douglass Leavy & Associates, Inc.	954-344-7994
Beta Company Surveying, Inc.	941-751-6016	DRMP, Inc.	407-896-0594
Betsy Lindsay, Inc.	772-286-5753	DSW Surveying and Mapping, PLC	352-735-3796
Biscayne Engineering Company, Inc.	305-324-7671	E.R. Brownell & Associates, Inc.	305-860-3866
Boatwright Land Surveyors, Inc.	904-241-8550	Echezabal & Associates, Inc.	813-933-2505
Bock & Clark Corporation	330-665-4821	Eda Engineers-Surveyors-Planners, Inc.	352-373-3541
Bowman Consulting Group, LTD., Inc.	703-464-1000	Edwin G. Brown & Associates, Inc.	850-926-3016
Bradshaw-Niles & Associates, Inc.	904-829-2591	E.F. Gaines Surveying Services, Inc.	239-418-0126
Brown & Phillips, Inc.	561-615-3988	Eiland & Associates, Inc.	904-272-1000
BSE Consultants, Inc.	321-725-3674	Element Engineering Group, LLC	813-386-2101
Buchanan & Harper, Inc.	850-763-7427	Engenuity Group, Inc.	561-655-1151
Buchheit Associates, Inc.	321-689-1057	Engineering Design & Construction, Inc.	772-462-2455
Bussen-Mayer Engineering Group, Inc.	321-453-0010	England, Thims & Miller, Inc.	904-652-8990
Burkholder Land Surveying, Inc.	941-209-9712	ESP Associates PA	803-802-2440
C&M Roadbuilders	941-758-1933	Evans Land Surveying, Inc.	727-734-3821
Calvin, Giordano & Associates, Inc.	954-921-7781	Exacta Land Surveyors, Inc.	305-668-6169
Cardno, Inc.	407-629-7144	F. R. Aleman & Associates, Inc.	305-591-8777
Carter Associates, Inc.	772-562-4191	Fabre Engineering, Inc.	850-433-6438
		Ferguson Land Surveyors, PLC	727-230-9606
		First Choice Surveying, Inc.	407-951-8655



## 2017-2018 Sustaining Firms

Flanary Surveying and Mapping, Inc.	941-915-8655	Long Surveying, Inc.	407-330-9717
Florida Engineering and Surveying, LLC.	941-485-3100	Ludovici & Orange Consulting Engineers, Inc.	305-448-1600
Foley/Koloarik, Inc.	941-722-4561	Manuel G. Vera & Associates, Inc.	305-221-6210
Fortin, Leavy, Skiles, Inc.	305-653-4493	Mapping Resource Group, Inc.	386-439-4848
Franklin Surveying & Mapping, Inc.	407-846-1216	Marco Surveying & Mapping, Inc.	239-389-0026
Ganung-Belton Associates, Inc.	407-894-6656	Mark Dowst & Associates, Inc.	386-258-7999
Gary G. Allen, Regis Land Surveying, Inc.	850-877-0541	Maser Consulting P.A.	813-207-1061
Geodata Consultants, Inc.	407-732-6965	Massey-Richards Surveying & Mapping LLC	305-853-0066
Geoline Surveying, Inc.	386-418-0500	Masteller, Moler & Taylor, Inc.	772-564-8050
Geomatics Corp.	904-824-3086	McKim & Creed, Inc.	919-233-8091
GeoPoint Surveying, Inc.	813-248-8888	Mehta & Associates, Inc.	407-657-6662
George F. Young, Inc.	727-822-4317	Metron Surveying And Mapping LLC	239-275-8575
GeoSurv LLC	877-407-3734	Millman Surveying, Inc.	330-342-0723
Germain Surveying, Inc.	863-385-6856	Mock Roos & Associates, Inc.	561-683-3113
GPServ, Inc.	407-601-5816	Moore Bass Consulting, Inc.	850-222-5678
Greenman-Pedersen, Inc.	352-547-3080	Morgan & Eklund, Inc.	772-388-5364
GRW Engineers, Inc.	859-223-3999	Morris-Depew Associates, Inc.	239-337-3993
Gustin, Cothorn & Tucker, Inc.	850-678-5141	Murphy's Land Surveying, Inc.	727-347-8740
H. L. Bennett & Associates	863-675-8882	Northstar Geomatics, Inc.	772-781-6400
Hamilton Engineering & Surveying	813-250-3535	Northwest Engineering, Inc.	813-889-9236
Hanson Professional Services, Inc.	217-788-2450	O'Brien Suiter & O'Brien, Inc.	561-276-4501
Hanson, Walter & Associates, Inc.	407-847-9433	Oceanside Land Surveying LLC	386-763-4130
Hayhurst Land Surveying, Inc.	772-569-6680	Omni Communications LLC	813-852-1888
HLSM LLC	407-647-7346	On The Mark Surveying LLC	321-626-6376
Hole Montes, Inc.	239-254-2000	Peavey & Associates Surveying & Mapping, PA	863-738-4960
Honeycutt & Associates, Inc.	321-267-6233	Pec - Survey & Mapping LLC	407- 542-4967
HSA Consulting Group, Inc.	850-934-0828	Pennonni Associates, Inc.	215-222-3000
Hutchinson, Moore & Rauch	251-626-2626	Pickett & Associates, Inc.	863-533-9095
Hyatt Survey Services, Inc.	941-748-4693	Platinum Surveying & Mapping LLC	863-904-4699
I.F. Rooks & Associates, Inc.	813-752-2113	Point To Point Land Surveyors, Inc.	678-565-4440
Inframap Corp.	804-550-2937	Polaris Associates, Inc.	727-461-6113
John Ibarra & Associates, Inc.	305-262-0400	Porter Geographical Positioning & Surveying, Inc.	863-853-1496
John Mella & Associates, Inc.	813-232-9441	Precision Surveying & Mapping, Inc.	727-841-8414
Johnson, Mirmiran & Thompson, Inc.	813-314-0314	Pulice Land Surveyors, Inc.	954-572-1777
Johnston's Surveying, Inc.	407-847-2179	Q Grady Minor And Associates, PA	239-947-1144
Jones, Wood & Gentry, Inc.	407-898-7780	Robayna & Associates, Inc.	305-823-9316
Keith & Associates, Inc.	954-788-3400	Reece & White Land Surveying, Inc.	305-872-1348
Keith & Schnars, P.A.	954-776-1616	Rhodes & Rhodes Land Surveying, Inc.	239-405-8166
Kendrick Land Surveying	863-533-4874	Richard P. Clarson & Associates, Inc.	904-936-2623
King Engineering Associates, Inc.	813-880-8881	Riegl USA	407-248-9927
Kugelman Land Surveying, Inc.	321-459-0930	Ritchie & Associates, Inc.	850-914-2774
Kuhar Surveying & Mappin LLC	386-295-8051	RJ Rhodes Engineering, Inc.	941-924-1600
Landmark Engineering & Surveying Corporation	813-621-7841	Robert A. Stevens & Associates	863-559-1216
Leading Edge Land Services, Inc.	407-351-6730	Robert M. Angas Associates, Inc.	904-642-8550
Leiter Perez & Associates, Inc.	305-652-5133	Rogers Engineering LLC	352-622-9214
Leo Mills & Associates	941-722-2460	Rogers, Gunter, Vaughn Insurance, Inc.	850-396-1111
Littlejohn Engineering Associates, Inc.	407-975-1273	S&ME, Inc.	407--975-1273
Lochrane Engineering, Inc.	407-896-3317	SCR & Associates NWFL, Inc.	850-265-6979
		Sergio Redondo & Associates, Inc.	305-378-4443

## 2017-2018 Sustaining Firms

Shah Drotos & Associates, Inc.	954-943-9433	Thurman Roddenberry & Associates, Inc.	850-962-2538
Sherco, Inc.	863-453-4113	Tuck Mapping Solutions, Inc.	276-523-4669
Sliger & Associates, Inc.	386-761-5385	Upham, Inc.	386-672-9515
Southeastern Surveying And Mapping Corporation	407-292-8580	Wade Surveying, Inc.	352-753-6511
Spalding Dedecker Associates Inc	248-844-5404	Wallace Surveying Corporation	561-640-4551
Stephen H Gibbs Land Surveyors, Inc.	954-923-7666	Wantman Group, Inc.	561-687-2220
Stephen J. Brown, Inc.	772-288-7176	WBQ Design & Engineering, Inc.	407-839-4300
Strayer Surveying & Mapping, Inc.	941-497-1290	Winningham & Fradley, Inc.	954-771-7440
Suarez Surveying & Mapping	305-596-1799	Woolpert, Inc.	937-461-5660
Survtech Solutions, Inc.	813-621-4929	York & Associates Engineering, Inc.	229-248-0141
Tetra Tech, Inc.	407-839-3955	ZNS Engineering LLC	941-748-8080



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## Upcoming Events

**February 9-10, 2018**

Board of Directors Meeting  
Tallahassee

**March 18-24, 2018**

National Surveyor's Week

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Harry C. Schwebke  
John P. Goggin  
R.H. Jones

**1960**

Hugh A. Binyon  
Russell H. DeGrove  
Perry C. McGriff  
Carl E. Johnson  
James A. Thigpenn, III  
Harold A. Schuler, Jr.  
Shields E. Clark  
Maurice E. Berry II  
William C. Hart  
Frank R. Schilling, Jr.

**1970**

William V. Keith  
James M. King  
Broward P. Davis  
E.R. (Ed) Brownell  
E.W. (Gene) Stoner  
Lewis H. Kent

Robert S. Harris

Paul T. O'Hargan  
William G. Wallace, Jr.  
Robert W. Wigglesworth

**1980**

Ben P. Blackburn  
William B. Thompson, II  
John R. Gargis  
Robert A. Bannerman  
H. Bruce Darden  
Buell H. Harper  
Jan L. Skipper  
Steven M. Woods  
Stephen G. Vrabel  
W. Lamar Evers

**1990**

Joseph S. Boggs  
Robert L. Graham  
Nicholas D. Miller  
Loren E. Mercer  
Kent Green  
Robert D. Cross  
Thomas L. Conner

Gordon R. Niles, Jr.

Dennis E. Blankenship  
W. Lanier Matthews, II  
Jack Breed

**2000**

Arthur A. Mastronicola  
Michael H. Maxwell  
John M. Clyatt  
David W. Schryver  
Stephen M. Gordon  
Richard G. Powell  
Michael J. Whitting  
Robert W. Jackson, Jr.  
Pablo Ferrari  
Steve Stinson

**2010**

Dan Ferrans  
Jeremiah Slaymaker  
Ken Glass  
Russell Hyatt  
Bill Rowe  
Dale Bradshaw  
Lou Campanile, Jr.

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