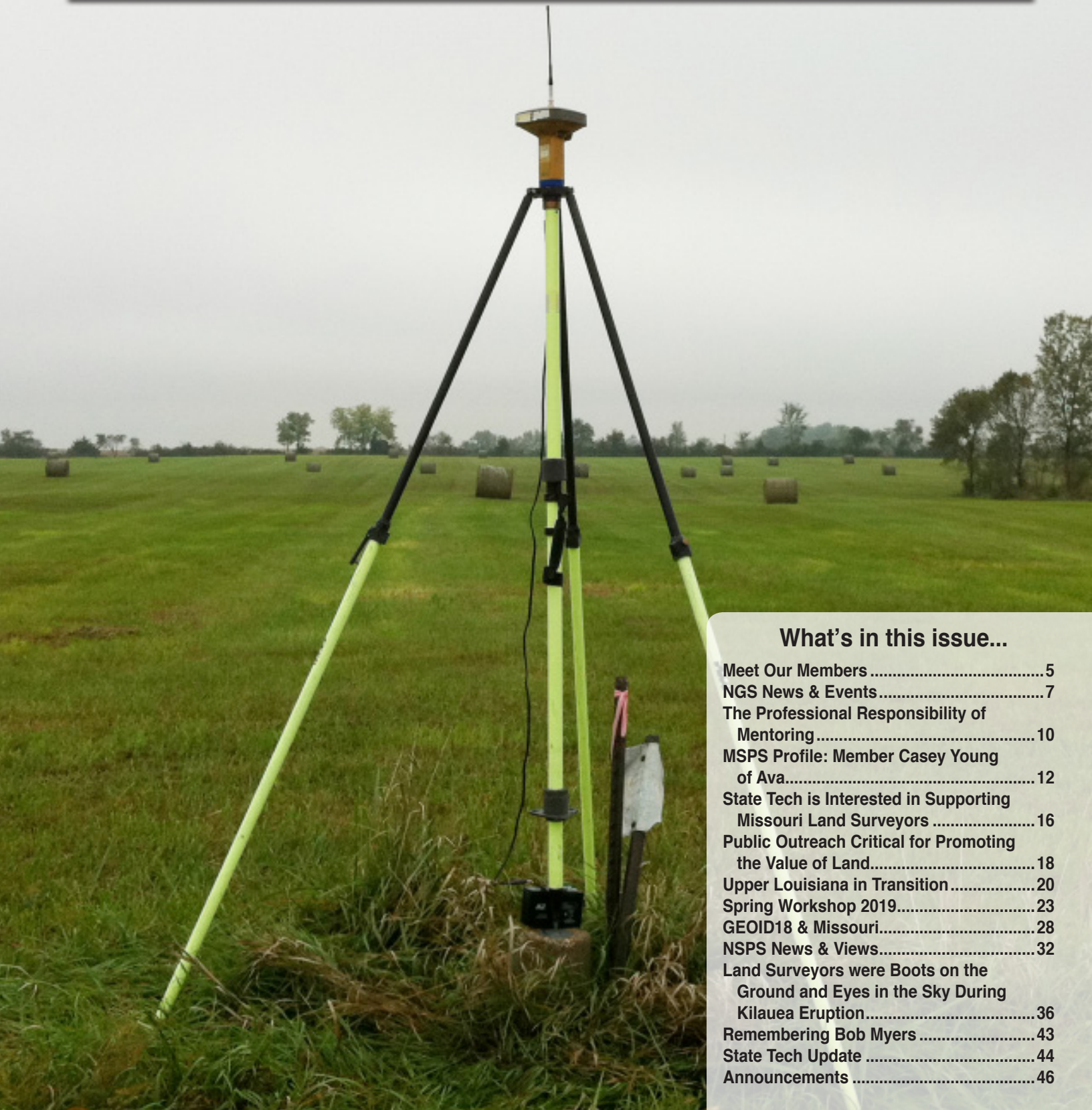


# MISSOURI SURVEYOR

A Quarterly Publication of the  
Missouri Society of Professional Surveyors

Jefferson City, Missouri

March 2019



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## CALENDAR OF EVENTS

2019

### May 2-4, 2019

41<sup>st</sup> Annual Spring Workshop  
Lodge of Four Seasons,  
Lake Ozark, MO

### July 27, 2019

Board Meeting  
MSPS Office, Jefferson City, MO

### August 14-16, 2019

Review Course  
Jefferson City, MO

### October 3-5, 2019

62<sup>nd</sup> Annual Meeting and Convention  
Holiday Executive Center  
Columbia, MO

### December 7, 2019

Board Meeting  
MSPS Office, Jefferson City, MO

2020

### April 30 - May 2, 2020

42<sup>nd</sup> Annual Spring Workshop  
Lodge of Four Seasons,  
Lake Ozark, MO

### October 22-24, 2020

63<sup>rd</sup> Annual Meeting  
Oasis Hotel and Conference  
Center  
Springfield, MO

The cover photo depicts  
two of Missouri's  
GPSonBM sessions  
from 2018. Courtesy of  
Jess Moss.

Donald R. Martin, Editor



## Notes from the Editor's Desk

Donald R. Martin



Welcome readers to the March 2018 Edition of *Missouri Surveyor*. Another February 2<sup>nd</sup> has come and gone for our ol' pard Tripod the three-legged groundhog. The surveying woodchuck was dismayed while analyzing the scientific evidence associated to weather prognostication. He's bothered by the confusion exhibited by so many these days when they fall for consensus as a determinate of scientific fact in critical matters such as climate change, the beginning of human life and so-called settled science. Tripod recalls an eternal lesson from past Registration Board President Dr. Paul Munger, "everyone agreeing to do it wrong, doesn't make it right." That's consensus for ya'! Even a tripod land beaver knows that! Well, for members missing mini memoirs on material of mutual mattering to mates of Missouri's mapping measurers may I move your mind into March's magazine...

Before previewing this edition, I must share the news on a couple of important items. Last summer the field observations for GPSonBM were completed and NGS is on the cusp of releasing GEOID18. Geodetic Section Chief Jess Moss of the Missouri Land Survey Program (LSP) made a point of citing LSP appreciation for the support and help of MoDOT, MSPS, participating Missouri surveyors and NGS Geodetic Advisor Brian Ward during the GPSonBM and GEOIS18 campaigns! These people stepped up and made it happen for the surveying community of Missouri. Read about it in this edition's *GEOID18 & Missouri*. The other news comes from NSPS. In their February 6<sup>th</sup> *News & Views* they reported about a recent Court ruling in Louisiana which threatens the PLSS. A judge deemed a cartographic map was a more accurate depiction of a boundary than the GLO Plats! This is a threat to the surveying profession and readers would do well to educate themselves more on this matter by going to <http://www.multibriefs.com/briefs/nsps/louisiana2019.pdf> for the full news from NSPS.

The usual briefing of edition contents has been superseded for this issue due to some very unwelcome news. It is with sorrow that *Missouri Surveyor* must share the sad news of the passing of two giants of Missouri surveying. A stalwart of surveying in southwest Missouri has past away; Robbie Wayne Neece of Joplin. See *In memory of Robbie Wayne Neece, PLS #396* (Page 60) for sincere reflections on this fine man and his more than six decades of surveying. As we were sending this edition to print came news of the earthly departure of Robert (Bob) Myers, our charter State Land Surveyor and the grand gentleman of Missouri surveying. News of Mr. Myers passing was still coming together as of our publishing date, but former State Land Surveyor and past MSPS President Darrell Pratte shares his respectful, loving recollection of Bob's survey career in *Remembering Bob Myers* (Page 39). The namesake of our Society's career achievement award, Bob Myers leaves a bountiful legacy for all Missouri surveyors.

Dashing through the list of features and authors enclosed in the March edition, I present you with the roster of contributors who have made this issue come to life. Thank you each and all – you have made this *Missouri Surveyor*. Chris Wickern, *President's Message*; Ray Riggs, *Mister Pot and Old Man Kettle*; Michelle Brown and Tom Reynolds, *Meet Our Members*; Joe Paiva, *The Professional Responsibility of Mentoring*; Casey Young, *MSPS Member Profile*; Joe Paiva, *State Tech is Interested in Supporting Missouri Land Surveyors*; James Purcell, *Public Outreach Critical for Promoting the Value of Licensure*; Steve Weible, *Upper Louisiana in Transition*; Ron Heimbaugh, Jess Moss, Brian Ward and Jim Copeland for their interviews related to, *GEOID18 & Missouri*; Darrell Pratte, *Remembering Bob Myers*; Joe Paiva and Cynthia Cox, *State Tech Update: The Last Two Semesters, and if You're Planning to Enroll*.

Well, I best break-it-down and bunch-it-up so I can start getting ready for the next edition ...I'll get back with ya' then... 🇲🇴

Donald



# THE MISSOURI SURVEYOR

Published quarterly by the  
Missouri Society of  
Professional Surveyors

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## President's Message

Chris Wickern, PLS



My first message was in keeping with the holiday spirit, while stating the nobility of the professional surveyor. This message addresses some, not all, of our Society's on-going work.

One of the items the Legislative Committee and Standards Committee are preparing for is the upcoming changes to the State Plane Coordinate System. As this develops, we must be ready to respond in timely manner. Additionally, the committee's and directors are following several bills and proposed legislation affecting our profession.

Our committees are always in need of new members, bringing new perspectives and thoughtful consideration. As a member, when you wonder why something was done one way or think it should have been this way, it is not a problem with the committee or action by our Society. It simply means you did not take the time to become involved. We are all busy, but our work to better the profession and to protect the public is a responsibility we all share.

Choose a committee where your interests lie and *Volunteer Today, You are needed!*

On a more somber note, much has been said of raising the perception of the profession of land surveyors. Some think the problem would be resolved by creating a degree requirement to qualify for licensing. Others think it can be resolved by increasing the education requirements and structuring a mentor program. There have been many discussions and ideas to address the perception that land surveying is more of a trade rather than a profession.

We are a well-regulated profession. Our State Laws concerning the land surveyor trace their roots to the Territorial laws for the Territory of Missouri. New legislation has been introduced, passed, enacted and revised from time to time throughout our history. These laws were not enacted to bolster the perception of the profession. They were enacted in large part, because surveying was being practiced as a trade and not a profession.

There are some today who survey land and hand the client a description. The client records this description in a deed, creating a parcel of record. The surveyor then publishes an unrecorded survey of an existing parcel. This is a practice which separates what was intended to be a survey creating a new parcel, into one created by description only with no original monuments.

Instead of applying the legal principle of following the footsteps of the original creating survey, all subsequent surveys must consider the legal principles of junior/senior rights. A practice which introduces uncertainty and circumvents the intent of RSMo 137.185, 60.650, 442.020, just to name a few.

Are these the actions of a Professional, or are they the practice of a tradesman working around the intent of our laws? If we had held ourselves and advised our clients to comply with the intent of our laws, would there be the persisting notion that surveying is a trade rather than a profession?

Perhaps it is time to consolidate these existing laws under one requirement across the State. This would not affect City or County jurisdictions where they have local requirements meeting or exceeding State Laws.

We are paid by a client, but serve the public. Each survey is an opportunity to earn their trust. Through the high standards of our noble profession, we lead our clients and the public to find their lines as stated in the book of Psalms 16:6, "The boundary lines have fallen for me in pleasant places; surely I have a delightful inheritance." 🇺🇸

Chris

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# Mister Pot and Old Man Kettle

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by Ray L. Riggs, PLS

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Sometimes, the meaning of idioms are lost with the passage of time.

I have been accused of “Beating Around the Bush” and there really is no sick like being “Sick as a Dog.” But really and truthfully; when was the last time you saw it “raining cats and dogs”? (I know, I know... it was that time when you stepped in a poodle...) However, when an old idiom is played out right before your very eyes (and ears) the story just begs repeating.

I was working in the southern part of a southern county in southern Missouri when I happened upon a gentleman by the name of \*Mister Pot.

We were traversing along an old trail that was the eastern boundary of a rural subdivision. The original surveyor had set large nails at the angle points of the meandering old road and we were locating and tying them with our traverse.

A few hundred feet down the trail, we passed by the driveway to Mister Pot’s house. With human nature being what it is and knowing that “curiosity kills the cat”, it wasn’t long until Mister P strolled down his driveway and initiated the conversation with the usual question; “You gonna widen the road?”

This question, more often than not, precedes a ten to fifteen minute discussion on how you’re not widening the road, just finding the old markers at the angle points; and No, you didn’t begin your survey at the brass marker, in the concrete post, on top of the big hill, five miles to the north; Yes, we are licensed surveyors; No, that “thang” does not take pictures... \*sigh\*

When we had satisfactorily answered his questions, Mr. P had a final word of warning for us that went something like this....

“Now you got to watch out for Old Man Kettle that lives on down the road there. Let me tell you, He-Is-A-Weirdo! At night, he gets out and sneaks around, peeking into people’s houses and crawling around their yards. Why, the other night, I caught him out in my yard, in full camouflage, face painted and everything! I took my shotgun and run him off! I tell ya! He’s dangerous!”

To say the least, he got my attention!

We continued to traverse and about an hour or so later, a pickup truck makes its way down the narrow trail toward us. When it pulled up beside me and stopped, the passenger’s window was rolled down so I stepped over to explain what we were doing.

The first thing I saw when I leaned down into the window to talk with the driver, was a rifle with a scope... Which thankfully was leaning on the seat with the muzzle pointed toward the floor. There was also a couple of handguns, of quite a large caliber, lying on the seat, within easy reach of said driver...

By the vivid and colorful description given by Mister Pot, I knew that this had to be “Old Man Kettle”!

For the second time that day, I answered the “usual” questions and received Old Man Kettle’s sage and scholarly (but quite useless) advice, that I should start my survey from “The brass marker in the concrete post, on top of the big hill, five miles to the north.”

When our conversation about surveying was complete, Old Man Kettle had some parting words of caution for me, that went something like this...

“Now you got to watch out for that ole Mister Pot that lives up toward the county road there. Let me tell you, he’s a Blue-ribbon Weirdo! He gits out at night and sneaks around, crawling around people’s yards, just a dirty peeping-tom I tell ya! Why, the other night, I caught him out in my yard, in full camouflage, had his face all painted! I took my pistol and run him off! I tell ya! He’s dangerous!”

After he had moseyed on down the road and we had had our laugh (because “Laughter is the best medicine”), I realized that the old idiom:

“That’s like the pot, calling the kettle black” had not lost its relevance in our “Post-Modern” world!

\*Real names are not used to protect the reputation of the kitchen utensils 🍲



## Meet Our Members!

*LS Member*

Tom Reynolds  
Hillsboro, Missouri

**Position:**  
Survey Manager,  
Cole & Associates



### **Focus of survey practice:**

The full scoop of site development surveying – boundary, topo, ALTA, construction layout, as-built. Most of my work is in the city and suburban subdivisions for developers and title companies. But I am happiest when I can pick up a large parcel boundary survey requiring PLSS retracing.

### **Finding a career in surveying:**

I was going to community college on an A+ scholarship studying Business. While in school I had a part-time job at a restaurant, and one of our frequent patrons was a shareholder with Cole & Associates. We became acquainted, he described surveying and told me I could have a job if I wanted it. I graduated and went to work the next day; I've been surveying ever since.

### **Likes about surveying:**

Surveying is a natural fit for me because it aligns things I enjoy studying and doing with my work. I was a history nerd, and when the other kids said they would never use what they learned in trigonometry class, I saw the practicality of trig. That's two matches to surveying. I love the outdoors and I was a walk-around-the-woods kind of kid even finding survey flagging and baling twine on trees marking property lines of the parcels near home. Another match. And then there is the sense of accomplishment... being a part of taking undeveloped land, measuring around it, marking it off, and bringing housing or businesses to that place. I get to see my work grow into making communities. I really like that! So you see, surveying is my work, but it is a reflection of the things I like.

### **Concerned about the profession:**

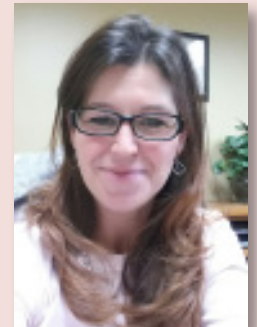
Not only a surveyor, I am a manager in my field, so I know the challenge of finding people to do this work. I hope we find a way to enhance our profile such that young people will consider surveying as a career option. We need a presence in the schools and with job placement counselors to get out the word "there's good jobs in surveying!" 🇺🇸

## Meet Our Members!

*LS Member*

Michelle Brown  
Lee's Summit, Missouri

**Position:**  
Project Manager,  
Lovlace & Associates



### **Focus of survey practice:**

Working mostly for municipalities and in residential suburbs, my focus is surveys in support of engineering, construction and development. So I do a lot of boundaries for subdivisions, plot plans for builders, topo for engineering and layout for construction.

### **Most memorable project:**

The project that first introduced me to surveying. I was in the Air Force and we went to El Salvador to convert an outdated airfield into an Army base camp. We only had two weeks to do it, and we got the whole site laid out and set up. At times we had motor-graders and bulldozers climbing up our backs, but we got it done. We even connected the locals to running water!

### **Likes about surveying:**

In surveying there is always change. I'm never in one place too long, stuck doing the same thing with no sense of accomplishment. With surveying it seems like I'm always someplace new, confronting and solving new challenges, and seeing my work come to life in the form of properties, homes, and infrastructure. As a surveyor I arrive on site to raw ground and my measurements, marking and mapping results in streets and neighborhoods. That is very satisfying. Also, the mix of office and field is much to my liking!

### **Why a member of MSPS:**

Being in MSPS is the way I am part of the group in this career field. The fellowship and networking it provides I continue my surveying education through the exchange of ideas and peer learning membership affords. One's own work doesn't always provide the breadth of experience needed for all we do. With the association of others in my profession I broaden my knowledge base through their experience. 🇺🇸



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# National Geodetic Survey

Positioning America for the Future

## NGS News & Events

### CORS Network Provides Vital Post-Earthquake Support in Alaska

Friday, December 14, 2018

Precise positioning data from NGS' **Continuously Operating Reference Station (CORS)** network provided vital assistance following the magnitude 7.0 earthquake centered near Anchorage, AK, on November 30. Regional surveyors and engineers are evaluating damages and planning recovery efforts; the U.S. Army Corps of Engineers is assessing damages to the Port of Alaska; and the State of Alaska is collecting high-resolution, three-dimensional digital maps of affected transportation corridors. CORS data will be used to georeference these and many other post-event measurements.



### NGS Webinar Attendance Reaches All-time High

Friday, December 14, 2018

With 991 attendees, NGS' November webinar, "Vertical Datum Changes for Floodplain Mapping, surpassed all previous NGS webinar attendance levels. The webinar provided an introduction to geodetic control in the context of flood mapping, presented case studies highlighting the importance of well-defined heights, and outlined the expected impacts of a modernized vertical datum on flood maps and related products. The NGS Webinar Series invites speakers to present information related to NGS products, services, and program activities. Webinars are usually held on the second Thursday of the month from 2-3 pm (Eastern). Registration is free and video recordings of all webinars are available for later viewing. A list of upcoming webinars and links to subscribe to training opportunities and other NGS notices are posted on the NGS website. NGS is exploring alternatives to increase attendance capacity for future webinars.

*(continued on next page)*



# NGS News & Events (continued)

The screenshot shows the National Geodetic Survey (NGS) website. At the top left is the NGS logo. The main header reads "National Geodetic Survey" with the tagline "Positioning America for the Future". A navigation bar includes links for "NGS Home", "About NGS", "Data & Imagery", "Tools", "Surveys", and "Science & Education", along with a search box. The page features a sidebar on the left with sections for "Webinar Series" (Overview, Upcoming Webinars, Recorded Webinars, User Forums and Q&A Sessions, NGS Testing & Training Center Home), "Have Webinar Questions?" (Frequently Asked Questions (FAQ), Contact Us), and "Subscribe for webinar notifications". The main content area is titled "Vertical Datum Changes for Floodplain Mapping" and includes the date "November 15, 2018, 2 pm, Eastern Time" and the presenter "Nicole Kineman, NGS Regional Geodetic Advisor for Alaska and the U.S. Arctic". The text explains that flood mapping depends on vertical accuracy and that the NGS is improving the height system by replacing the North American Vertical Datum of 1988 (NAVD88) with the North American-Pacific Geopotential Datum of 2022 (NAPGD2022). A video player is embedded, showing a "Welcome to the NGS Webinar Series" slide with a list of instructions for attendees. Below the video are buttons for "DOWNLOAD VIDEO" and "DOWNLOAD SLIDES". The footer contains the website owner information and a list of links: "NGS Home", "NGS Employees", "Privacy Policy", "Disclaimer", "USA.gov", "Ready.gov", "Site Map", and "Contact Webmaster".

## International Surveying Competition Builds Strong Professional, Cultural Bonds

Friday, December 07, 2018

The NGS Testing and Training Center in Woodford, VA, hosted a competition between surveying teams from the United States and China. The competition was sponsored by the National Society of Professional Surveyors in partnership with the Beijing Institute of Surveying and Mapping, the Beijing Municipal Federation of Trade Unions, and Trimble, Inc. Two nine-member teams represented their countries in a three-component, day-long field surveying exercise. The competition also included a survey theory exam that was compiled and agreed upon by the Chinese and U.S. delegation leaders. Awards were presented at the end of the competition. Participants from each team agreed that the competition built strong professional and cultural bonds.

*(continued on page 34)*

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# The Professional Responsibility of Mentoring

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WHAT IS IT? AND WHY IS IT IMPORTANT?

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## INTRODUCTION

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Mentoring, loosely defined (by me), is the process of helping a younger and/or less-experienced person, navigate a process, life-activity, occupational or vocational skill or career. The dictionary says a mentor is, “*a trusted counselor or guide.*” I use my definition to better help professional surveyors, as well as non-licensed experienced people in surveying and mapping occupations, understand their role in mentoring “mentees,” that is the people who are mentored.

In the case of younger and/or less-experienced people in surveying, mapping or other geospatial activities, being actively mentored is a way for them to get up-to-speed quicker, to take on more responsibilities knowledgably, and to accomplish their projects correctly, faster and with greater customer satisfaction. The mentors, who regardless of their place on their career path, are more experienced, and more professionally advanced, i.e. “older” in the profession, do their job of counseling or guiding by remembering how it was for them early in their careers, and communicating with their mentees in various ways to help them navigate their progress in their career path.

My observation of the land surveying profession, which includes those who might be future candidates for licensure, is that the process for people in the profession to advance, including licensure, can be much improved.

Here are some of the ways mentees can benefit from mentoring:

- Be identified as a person who is likely to do well in surveying; recognizing aptitude as a student, as an employee of a surveying business, or while on some other career path,
- Explaining how “things” work around the office, whether that is figuring out how to advance in the place of employment, or showing mentees how the organization wants things done (such as paper filing, electronic filing on company server, other recordkeeping, including field book setup, responding to client communications, etc.),
- Be encouraged to learn by receiving suggestions for books, setting up study groups, informally meeting to teach advanced surveying concepts, encouraging bosses to send the mentee to learning opportunities, suggesting opportunities for networking with others in surveying who are not from within the organization,
- If the mentor is in a supervisory or management role with respect to the mentee, suggesting the mentee as a candidate for advancement when the mentee is ready,
- Coaching, teaching or tutoring on a one-on-one or group basis,
- Regularly meeting with the mentee to discuss, technical, professional and other questions such as how to best communicate with clients, other professionals, third parties who are involved in the business, but not as clients, etc.,
- Assistance with professional communication, including teaching about various styles of writing depending on the purpose, requesting references via letter or email, filling out applications to the licensing board, requests for information, whether from third parties or clients, professional telephone communication, and the appropriateness of text messaging and when it should be used,



- When mentees have been accepted to take examinations whether for certified survey technician (CST), fundamentals of surveying (FS) or other licensing exams, to give them test-taking tips, helping them build a study and reference library, arranging for tutoring prior to the exam,
- Holding professional discussions to explain how decisions are made regarding boundary and other types of surveying, teaching ethics issues, building an understanding of professional behavior
- Deriving confidence from know that there is a person who is interested in seeing the mentee thrive and succeed.

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## WHY IS MENTORING IMPORTANT TO THE PROFESSION?

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It is widely understood that the body of surveying professionals is an aging group. There is a further concern that the number of new licensees created annually are quite a bit lower than the annual attrition (retirement, death, illness or disability, etc.).

It is widely understood that helping and encouraging people who have an interest in the profession is one of the best ways to make sure they can succeed, regardless of the profession that they have chosen to enter. We also know that creating an interest in the profession by simply talking about it as a career goal to students at the college level, high school level or even lower is a great way to help the future adult population understand what surveying is, what surveys are, and how surveyors can perform surveys to benefit them in some way.

So, mentoring and talking about the profession is a *responsible* way to be a professional. I believe it a duty of all licensed professionals to see to it that they not only have successors to fill their shoes, but that they are better prepared than today's professionals are. I also believe that it a responsible to today's professionals to do all they can to make sure that the professionals coming to succeed them are on the average, *more competent*, more business minded and have a better understanding of their role in contributing to the economy.

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## WHAT CAN YOU DO?

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There are many things that rank and file members of the profession can do to foster the activities important to the profession (and thereby, the public).

They can

- Speak about the profession of surveying or the benefits of getting land surveyed to students
- Speak about the benefits of getting land surveyed to organizations such as service organizations (Optimists, Rotarians, Elks, etc.), church groups, civic groups
- Carry the message of the importance of good surveys and surveyors to groups of allied professionals such as engineers, architects, the real estate division of the local bar associations, realtors' groups, title insurance associations, lenders associations, municipal, county and state officials' organizations such as DOTs, recorders, assessors, planners, public works etc.
- Develop a mentoring plan on their own and start mentoring, or encourage their state professional society to help them by developing guidelines on how to mentor, and then mentor
- Readily respond positively to requests from students who need field mentors for those who are too far from campus to attend labs for their college-level surveying classes.

I'm sure there are many more ways; you are just limited by your own creativity. But finding the time, being actually interested in seeing people advance, and helping them to rise to the occasion, perhaps even advancing beyond where the mentor got to, is well worth doing, professionally rewarding, and will cause you to make grateful friends for life and be immensely proud of what you have done for the profession and the fabric of society. No matter how you think about it, surveying is an important facet of our economy. Making sure it doesn't get devalued or made a commodity is the responsibility of all of us. 🇺🇸

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# MSPS Profile: Member Casey Young of Ava

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by Donald Martin

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## Position:

Surveying Technician, Daniel Surveying  
Young Surveyors/Mentoring Committee Chair, MSPS

## Focus of Surveying Practice:

Surveying technician Young is actively engaged in the full scope of surveying endeavors undertaken by Daniel Surveying of Douglas County. Treasuring the gift of being a part of the Daniel team Casey feels particularly proud of the opportunities to focus on two favorite types of projects; small town lot surveys and rural property boundary surveys dependent on PLSS breakdowns.

The small-town lot surveys take Casey into the villages and hamlets of Missouri's western Ozarks where the density of recent surveys is minimal. Such circumstances have this technician calling upon those uniquely surveying skills of piecing together the quilted patchwork of deed interpretation, evidence of occupation, notions of possession and the sparsity of existing surveys to solve the land dilemmas of rural citizenry. The most interesting aspect of such cases for Ms. Young is the following in footsteps of the surveying forebearers for what she calls the *solving and placing of pieces of the puzzle*.

The rural property boundary surveys come with even greater challenges, but Casey derives even greater rewards from them. These projects, which in her area rarely have record surveys, give her the valued experience of undertaking journeys along the lines and corners by traveling through time to the early GLO surveys of her corner of Missouri. *Circa* the 1840's are the surveys of record Casey turns to. Under the guidance of Andy Daniel this technician converts research into field search enabling the recovery of original evidence – the treasure is found.

## How surveying found Casey/how she found a career:

Growing up in an urban metropolis, this devoted daughter of a surveying and engineering father thought similar fields would be to her liking, so off to Rolla she went! While engaged in the study of engineering, Casey became enthralled with the community beyond and around the hallowed halls of academia. It was the Ozarks. The small-town life of southern Missouri and its good people

charmed Casey...and called her. She knew then her future would be made in the hills and timberlands of her state's uplands. But on her way, life took over.

Realizing engineering may not be her calling, Casey pursued (and graduated with) a degree in Business from Columbia College. Nearing graduation, trying news from home changed

her world. Her mother had been diagnosed with a fatal bone marrow disorder. As she was being tested with trying to complete her studies while being a caregiver to her ailing mother, a family friend sent Casey a copy of a POB article he offered to assist the future graduate in career planning. Entitled something like *Indiana Jones with a Tripod* it told the story of a young lady in America's northwest feeling like an adventurer each day she went out to survey with a machete in hand and a tripod on her shoulder. Intrigued, Casey filed that away as she was facing a grim challenge.

Her mother's fate was hospice care and a pending end to her worldly journey. A last request was to be with her daughter and husband in the little house in the woods they were building near Walnut Grove. Still under construction, the loving trio retreated to their dream abode for her mother's last week. On the very morning Mrs. Young's earthly race was won, family friend Rick Wilson came calling. In the mix of all that takes place saying goodbye and making those final arrangements, Rick kindly turned Casey's focus to her own future. In the midst of this ending, Miss Young foresaw a beginning with the help a caring Missouri surveyor. Rick guided Casey towards a self-commitment to then work towards a life in surveying.

Wrapping up her college career with a twenty-three (23!) credit hour semester, Casey worked her way through grieving and soon started with Wilson Surveying in Springfield. A surveyor was born.



Casey Young

(continued on page 14)



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## MSPS Profile: Member Casey Young of Ava (continued)

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### Most memorable project:

For some it is merely the enjoyment of the cumulative work, but occasionally people in surveying will recall a particular project that stood out. In some cases, it is a survey which reveals the specific appeal of surveying, the alignment of one's talents to the tasks which bring fulfillment in this field. So was the case for Casey Young. While working for Wilson Surveying she picked up a project encompassing over 400 acres, spanning across four sections in Stone County. It was her first real pass at PLSS research and retracement. The expanse of land was surrounded by more contemporary surveys but at its core the parcel was dependent upon a breakdown of the public lands system. Casey pulled together the research and plotted positions to a worksheet. Then it was time to test all she had prepared – it was off to the field to find what should be out there. Could she find it? Finding and measuring positions of previous surveys, she tied them together.

About a third of the way through the project enough information had been gathered to start calculating try points and then set them out. A surveying epiphany occurred with each successful match. She knew then it was bigger boundaries in rural areas which rewarded her most; that and retracing the PLSS. Reflecting back on seeing and touching a moss-covered stone with a cross cut, Casey identified where her education was lacking. It helped her target that which she needed to become a well-rounded surveyor.

### Impressions of other young surveyors:

Recognizing the difference between ever changing technologies in surveying *versus* the everlasting principles making the bedrock of surveying, the old-soul that Ms. Young is finds herself a bit adrift from fellow “young surveyors.” Understanding the importance of applying the time-tested standards and customs assuring the integrity of surveys this Missouri survey technician does not fit within the stereotype of contemporary technicians who are technology giants yet procedure dwarfs.

Although she possesses first-rate skills with the tools of the trade, Casey understands it is talent, not technology, and not toys which accomplishes the goals of a surveying project. She also recognizes that is not only the view of many “young surveyors,” it is a mistake made by veterans as well. She cautions those who have been in practice


to not “...presume that the appeal to young people is to emphasize the technology. They want and enjoy the same challenges surveying offers you.”

When speaking of challenges unique to younger entrants in the ranks of technicians she spots a roadblock to the pursuit of needed experience in the wide span of disciplines within surveying. While a young surveyor may be well aware of their needs to attain experience in multiple fields, they are willing to move between firms and the tutelage of surveyors with differing professional practices. The personal learning and experiencing goals of the younger surveyors often put them at odds with their own needs of making a living wage and earning benefits. The choice is conflicted when you may need sectionalized land experience, but engineering surveys and suburban subdivision work offers higher wages with benefits.

### Surveying's lack of gender diversity:

As a newcomer to surveying Casey finds it is easy to recognize that this profession reflects a comparative bygone era in terms of gender diversity. While she has always felt personally welcome and figuratively embraced by those in the surveying community, she does sense the occasional sentiment that women in surveying means women in the surveying office. Wanting to engage in the full array of surveying activities, this technician rejects any patriarchal placing of her in her “proper place” – she can and will do all that any other surveyor will do. Surveying is not something men or women can do, it is something surveyors should do, and she is determined to be the best surveyor she can be.

### MSPS Young Surveyor/Mentoring Committee:

As committee Chair, Casey hopes to build a network of those in Missouri who are new to the profession and pursuing their license and career. She wants them to contribute to the Society and the progress of the profession. Ms. Young welcomes other in similar circumstances to join with her, share their passion for the profession, and help set the course for not only their careers, but the surveying profession of the future. 



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# State Tech is Interested in Supporting Missouri Land Surveyors

by Joe Paiva



State Technical College of Missouri (Linn, Mo.) is in the process of developing online courses entitled: *Introduction to GIS and GNSS* (CVT 245) and *Advanced GIS and GNSS* (CVT 255). State Tech's goal is to begin offering CVT 245 in the fall of 2019 and CVT 255 in the spring of 2020. See the sidebars with this article for the course details. Both courses are being developed as three hours of college credit each.

Many students will gain additional education depth from taking all six of State Tech's course offerings (the other four being Surveying I and II, Land Records, and Legal Aspects of Surveying). Many employers are willing to compensate for the additional experience and education. The GIS component adds greater desirability for those wishing to be candidates for employment in workplaces that offer a more integrated geospatial services environment (in addition to surveying, these areas can include engineering, construction, public agencies such as assessors, state and local departments of transportation, and public employers in the businesses such as monitoring, mapping, exploiting and delivering other services in natural resources, school administration, etc.).

State Tech considerations include: a) Submitting the *Introduction to GIS and GNSS* and *Advanced GIS and GNSS* courses to the Missouri Board for Professional Surveyors for approval to include as options towards the required minimum of 12 hours of college credit to apply for licensure (or *Surveyor in Training* status). These courses would provide more flexibility for licensure applicants. b) Offering a *Certificate in Land Surveying* for those completing the full 18 college credit hours as a way to provide a more formal recognition of the accomplishments of those who achieve this goal.

Depending on the success and acceptance of the new courses and the demand for surveying courses, State Tech plans to continue to add to its surveying offerings, with consideration of offering an advanced certificate in land surveying as well as a two-year degree to those who not only complete more land surveying coursework, but the general education courses required of State Tech's Associate of Applied Science degree graduates. However, movement in this direction of increasing the offerings will be dependent on successful enrollment by students in the additional courses above the minimum 12 credit hours.

## CVT 245

### Introduction to GIS and GNSS

**DELIVERY METHOD: ONLINE**

**Course Description:** This course teaches fundamental concepts in the use of Geographic Information Systems (GIS) and Global Navigation Satellite Systems (GNSS) to students preparing for work in the geospatial industries and professions. This course will enable the student to understand spatial referencing concepts, Geographic Information Systems (GIS) and Global Navigation Satellite Systems (GNSS). The student will be introduced to GIS/GNSS receivers and GIS/GNSS software systems that are used to collect, correct, map, and analyze geospatial data. 3 credit hrs.



If you or your business is interested in supporting this endeavor, State Tech would like to have your input regarding interest in the proposed courses and/or more expansion of the Survey Program. Please indicate your interest to Cynthia Cox, Director of Continuing Education in the Civil Engineering Technology Department at [Cynthia.Cox@statetechmo.edu](mailto:Cynthia.Cox@statetechmo.edu). 🇺🇸



## **CVT 255**

### **Advanced GIS and GNSS**

**DELIVERY METHOD:** ONLINE

**Course Description:** This course will enable the student to understand and demonstrate advanced spatial referencing concepts in Geographic Information Systems (GIS) and the Global Navigation Satellite Systems (GNSS). The student will be introduced to advanced GIS/GNSS receivers and GIS/GNSS software systems that are used to collect, correct, map, and analyze geospatial data.  
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**To indicate interest in attending or to be considered as a speaker at the program (more details in a future issue), write to [cynthia.cox@statetechmo.edu](mailto:cynthia.cox@statetechmo.edu)**

# Public Outreach Critical for Promoting the Value of Licensure

by James Purcell, PE, NCEE President

Have you explained your profession to anyone today? How about within the past month or year? When was the last time you spoke to students, nonlicensed engineers or surveyors, or even the general public about the importance of licensure? Have you explained your profession to anyone today?

Public outreach has become more critical to the engineering and surveying professions in the past few years. I remember as a student being told that the public doesn't understand what engineers and surveyors do. That's been the case for decades, but we are in an era now in which the importance of licensure is more pressing. So long as the lights go on, the Wi-Fi is working, the roads are paved, and the toilets flush, no one ever thinks of how that came to be. The public doesn't know the intricacies of the systems behind the elevator working in an apartment or office building,

the mechanical and electrical systems that keep vehicles running, or any myriad of mundane daily occurrences. Technology has made it easy for engineers and surveyors to perform some job duties without being professionally licensed, and this leaves those with licenses challenged to explain why licensure is important.

It's not easy to explain to the general public what a licensed professional means for them, and the explanation differs with the audience. We speak to college students in engineering programs about licensure in a different way than we speak to elementary school students. Retirees entering the profession from government or industry need a



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different message than the ones who are still in government and industry. And the general public—the public we are sworn to protect—need an entirely different message.

I convened the Public Outreach Task Force this year to look at ways to get the message across to all sectors. Advancing licensure for engineers and surveyors is our mission; we need to better communicate to everyone and provide NCEES members the tools to do so. The task force is looking at all the ways that NCEES already performs outreach as well as what our member boards are doing on their own. Perhaps your board has programs in place that we can consider for our toolkit. Please let us know by contacting Nina Norris, the task force's staff liaison, at NCEES headquarters.

As we embark on this expanded journey in public outreach, it's important that we also realize what NCEES already does to reach the public. First, we are strategically aligned with all of the technical and professional societies through the Participating Organizations Liaison Council; the Interprofessional Council on Registration; and an annual meeting of the leadership of NCEES, ABET, the American Society for Engineering Education, the American Society of Civil Engineers, and the National Society of Professional Engineers. NCEES also has representatives who participate in many organizations on its behalf.

NCEES is serving as co-chair of DiscoverE for the second consecutive year. DiscoverE Engineers Week is dedicated to ensuring a diverse and well-educated future engineering workforce by increasing understanding of and interest in engineering and technology careers. It is a week to focus on K–12 engineering outreach, and NCEES will help lead the way in 2019.

Additionally, we are exhibitors at many conferences, such as those of the American Society for Engineering Education, the Society of Women Engineers, and the National Society of Black Engineers, where our outreach focus is on the value of licensure. Through Speaker's Link and its various Speaker's Kits, NCEES provides licensed engineers and surveyors, as well as supporting materials, to speak to students about the importance of licensure and the process to become a professional engineer or surveyor. The NCEES Engineering Education and Surveying Education awards also promote licensure to college students across the country.

These are a few of the existing outreach efforts that NCEES uses to promote professional licensure for engineers and surveyors, and there is room for more.

As NCEES continues to develop tools for you and your board to use to advance licensure for engineers and surveyors, please consider how you talk about yourself and your profession every day. Let us know how we can help you in those discussions. 🇺🇸

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# Upper Louisiana in Transition

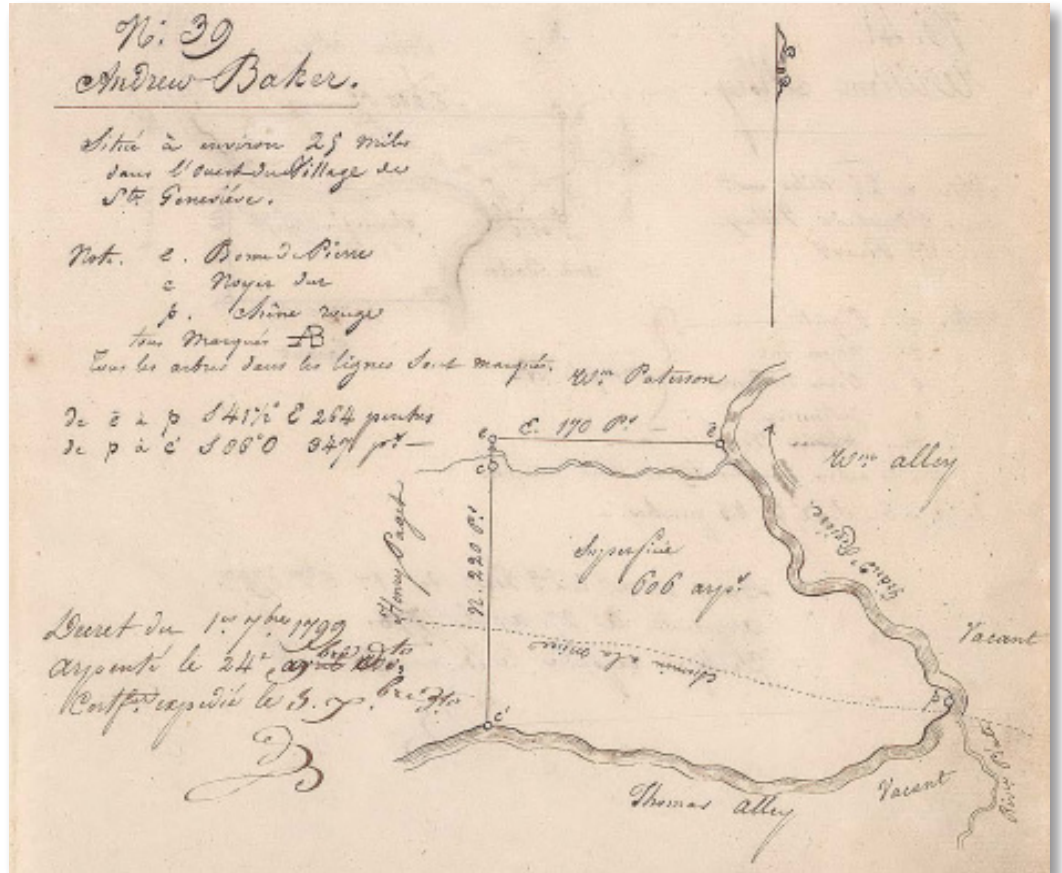
by Steven E. Weible, PLS

“The inhabitants of the ceded territory shall be incorporated in the Union of the United States, and admitted as soon as possible, according to the principles of the Federal constitution, to the enjoyment of all the rights, advantages and immunities of citizens of the United States; and in the mean time they shall be maintained and protected in the free enjoyment of their liberty, property, and the religion which they profess.” (Article III of the Treaty Between the United States of America and the French Republic, dated April 30, 1803, U.S. Statutes at Large, Vol. 8, pg 200.)

Spain had agreed with France on October 1, 1800 to transfer the Province of Louisiana back to the French Republic and had formalized the arrangement by treaty on March 21, 1801. France attempted at that time to send an army to take possession of the province, but an English blockade kept its ships in port and unable to depart. France was, therefore, unable to take actual possession of the province until November 30, 1803, seven months after selling it to the United States (Stoddard, pg 102; Houck, Vol. 2, pg 356).

The French representative at New Orleans transferred possession of Lower Louisiana to representatives of the United States, William C. C. Claiborne, Governor of the Mississippi Territory, and General James Wilkinson, on December 20, 1803 (Annals of Congress, 8th Congress, Appendix, pg 1229). To save himself the time and expense of travel to St. Louis for the transfer of Upper Louisiana from Spain to the French

Republic and from the French Republic to the United States, the French representative commissioned Captain Amos Stoddard of the U.S. Army Corps of Artillerists to serve as agent for the French Republic. Captain Stoddard received possession of Upper Louisiana on behalf of the French Republic on March 9, 1804. He then transferred possession from the French Republic to the United States on March 10, 1804 (Stoddard, pg 102-103; Houck, Vol. 2, pg 356-362).



This plat of survey of 606 Arpents made for Andrew Baker is an example of what would have been filed by a claimant with the Recorder of Land Titles along with other written evidence of a claim. Note that the text is in French, even though the concession was made by the Spanish Government. The tract was conceded on September 1, 1799, the survey was performed on November 24, 1799 and the certificate was made out on December 5, 1799. The tract adjoins Big River and is located 25 miles west of Sainte Genevieve (between present day Bonne Terre and Desloge in St. Francois County).

(Courtesy of the Missouri State Archives, Missouri Digital Heritage)

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## Upper Louisiana in Transition *(continued)*

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In order to provide a temporary form of government in accordance with the act of October 31, 1803, chapter 1, *An Act to enable the President of the United States to take possession of the territories ceded by France to the United States, by the treaty concluded at Paris, on the thirtieth of April last; and for the temporary government thereof* (U.S. Statutes at Large, Vol. 2, pg 245), Captain Stoddard was directed by the Secretary of War to exercise the functions of civil commandant for Upper Louisiana (Stoddard, pg 103; *Territorial Papers*, Vol. 13, pg 8). Congress followed up by passing the act of March 26, 1804, chapter 38, *An Act erecting Louisiana into two territories, and providing for the temporary government thereof* (U.S. Statutes at Large, Vol. 2, pg 283) to take effect on October 1, 1804. This act separated the former Spanish Province of Louisiana into a territory and a district divided by the thirty-third degree of north latitude. The area south of the dividing line was designated the territory of Orleans and was set up with a territorial government. The area to the north of the dividing line was designated the district of Louisiana and was placed under the administration of the Indiana Territory.

In a proclamation, dated October 1, 1804, William Henry Harrison, Governor of the Indiana Territory, announced the division of the district of Louisiana into five districts for administrative purposes. Those districts were designated the district of St. Charles with its seat of justice at the village of St. Charles, the district of St. Louis with its seat of justice at the town of St. Louis, the district of Sainte Genevieve with its seat of justice at the town of Sainte Genevieve, the district of Cape Girardeau with its seat of justice to be determined and the district of New Madrid with its seat of justice at the town of New Madrid (*Territorial Papers*, Vol. 13, pg 51).

The district of Louisiana was upgraded to the Territory of Louisiana and a territorial government was authorized by the act of March 3, 1805, chapter 31, *An Act further providing for the government of the district of Louisiana* (U.S. Statutes at Large, Vol. 2, pg 331). General James Wilkinson of Maryland was appointed Governor of the Territory of Louisiana on March 11, 1805 and commenced his duties on July 4, 1805 (*Territorial Papers*, Vol. 13, pg 98).

When the inhabitants of the Province of Louisiana had first become aware that there would be a change in the government, they began to anticipate a rise in the value of real property. Those who were eligible for grants of land had hastened to petition for them. Those who held a general concession and had not yet selected a location had made an earnest effort to make a selection. Those in need of boundary surveys had tried to procure them. And those who saw opportunities for gain had tried to develop speculative schemes. This high volume of activity leading up to the actual transfer of possession caused the United States government to become very suspicious of attempts to fraudulently acquire lands (Stoddard, pg 253-254).

The primary suspicion of fraud was the dating of concessions and surveys prior to their actual date, referred to as “ante-dating.” Since the recognized date for the transfer of the Province of Louisiana from Spain to France was October 1, 1800, the United States did not want to recognize any grant or concession from Spain that had originated after that date. Section 14 of the act of March 26, 1804, therefore, declared any such grant or concession null and void. It was desirable, however, to protect the bona fide rights of actual settlers, if the settlement had been made prior to December 20, 1803, the date on which the United States took possession of Lower Louisiana. A bona fide grant of land was limited to “one mile square of land, together with such other and further quantity as heretofore hath been allowed for the wife and family of such actual settler, agreeably to the laws, usages and customs of the Spanish government.” This section also made it unlawful for any person to attempt a new settlement on or to make a boundary survey of the lands of the United States within the limits of the former Province of Louisiana.

The confirmation of land claims was a matter of great concern and anticipation for the inhabitants of Upper Louisiana, but, unfortunately, the process would not be quick and it would not be simple. Congress eventually took the first steps in that direction by passing the act of March 2, 1805, chapter 26, *An act for ascertaining and adjusting the titles and claims to land, within the territory of Orleans, and the district of Louisiana* (U. S. Statutes at Large, Vol. 2, pg 324).

*(continued on next page)*

## Upper Louisiana in Transition (continued)

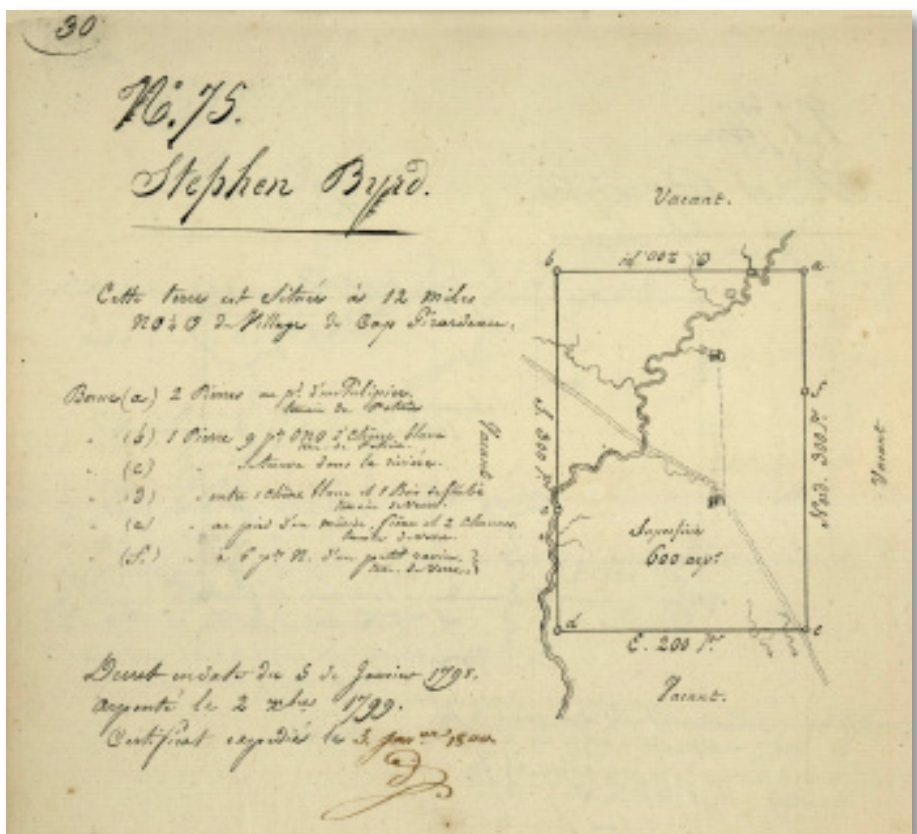
Section 1: Claims to land were to be confirmed for persons actually inhabiting and cultivating the land before October 1, 1800, if they had obtained a “duly registered warrant, or order of survey for lands” from the French or Spanish government as appropriate. In other words, the appropriate authority had conceded a tract of land to the claimant and had directed a survey to be made. The claimant must be the head of a family or over the age of 21 and must have fulfilled the terms and conditions of the grant.

Section 2: A tract of land not exceeding “one mile square, together with such other and further quantity, as heretofore has been allowed for the wife and family of such actual settler, agreeably to the laws, usages and customs of the Spanish government” was to be granted to every person who was either the head of a household or over the age of 21 and who had made an actual settlement before December 20, 1803 with the permission of the proper Spanish officer. Also included were Spanish or French grants that had been completed before October 1, 1800 and on which there had been actual inhabitation and cultivation prior to December 20, 1803. This section did not apply to those who claimed any other tract of land by virtue of a French or Spanish grant.

Sections 3 and 4: A recorder of land titles for the district of Louisiana was to be appointed by the President of the United States and was to begin his duties by September 1, 1805. Every person claiming lands by virtue of a French or Spanish grant was to file a notice in writing and a plat of survey with the recorder of land titles before March 1, 1806 along with all available written evidence of his claim.

Section 5: The President was to appoint two people to serve as commissioners along with the recorder of land titles for the district of Louisiana to examine those claims to land that would be filed with the recorder of land titles. This Board of Commissioners was to commence its work on or before December 1, 1805 and was to have the power to conduct a hearing on each claim and render a decision in a summary manner, according to justice and equity. The commissioners were not authorized to recognize or decide upon any grant or incomplete title, bearing a date subsequent to October 1, 1800. They were not to adjourn before March 1, 1806, the deadline for filing claims and written evidence, and they were to continue until the work was completed. Upon completion of the work, they were to submit transcripts of the claims that were approved and a report of those claims that were rejected. The transcripts and reports were ultimately to be presented to Congress for review and confirmation.

(continued on page 27)



This plat of survey of 600 Arpents made for Stephen Byrd is another example of what would have been filed by a claimant with the Recorder of Land Titles along with other written evidence of a claim. Note that the text is in French, even though the concession was made by the Spanish Government. The tract was conceded on January 5, 1798, the survey was performed on December 2, 1799 and the certificate was made out on January 5, 1800. The tract is located 12 miles northwest of Cape Girardeau. (Courtesy of the Missouri State Land Survey)



# Missouri Society of Professional Surveyors

## SPRING WORKSHOP

May 3 - 4, 2019

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# Friday, May 3, 2019

- 7:00 am REGISTRATION and BREAKFAST BUFFET (included)
- 8:00 – 9:30 am **WHAT IS THE BEST EVIDENCE OF MARKETABLE TITLE FOR PREPARING THE SURVEYOR?**  
Should the surveyor on behalf of Client/Landowner order:  
  1. Letter report or Title report;
  2. Abstract of Title;
  3. Commitment of Title Insurance;
  4. Policy of Title Insurance?Why should there be an Owner's Policy and a Lender's Policy Issued? How does the Surveyor remove certain "standard" exceptions from Schedule B-II in the title insurance commitment? How will the Client/Owner recover on the title policy if a "valid" claim is filed? Should the Surveyor review the City's Subdivision Plat requirement before commencing the work?  
**Eric C. Harris, J.D.**
- 9:30 – 10:00 am BREAK with EXHIBITS
- 10:00 – 12 noon **WHAT FORM OF DEED IS APPROPRIATE?**  
There are many Deeds to consider: Quit Claim Deed, Special Warranty Deed, General Warranty Deed, Beneficiary Deed, Partition Deed, Sheriff's Deed, Collector's Deed, Trustee's Deed, Trustee's Deed in Foreclosure, Personal Representative's Deed, Conservator's Deed, etc. how best to protect your client as to what deed to use. Does the Trust/Mortgage complicate ownership? How may a Deed of Trust be released when canceling the entire debt or only releasing the lien on the subject property by Partial Deed of Release and maintaining the validity of debt.  
**Eric C. Harris, J.D.**
- 12:00 – 1:00 pm LUNCH (included)
- 1:00 – 2:30 pm **WHAT OUR YOUNG SURVEYORS SHOULD KNOW**  
Burn all the books, all you need is love! For many surveyors, the decision to start a surveying business is one made out of passion, not reason or logic, and certainly not by strategic planning. This session will introduce the passionate, but not particularly business savvy, surveyor to a few basic business concepts that might make their go of it a little less stressful.  
**Casey Young**
- 2:30 – 3:00 pm BREAK with EXHIBITS
- 3:00 – 5:30 pm **PANEL DISCUSSION**  
**"WHAT A YOUNG SURVEYOR SHOULD KNOW OR PREPARE FOR"**  
**Panelists: Bob Shotts, Mark Wiley, Johnnie Young and Mike Zahner**
- 5:30 pm RECEPTION WITH EXHIBITORS (complimentary beer and wine)

# Saturday, May 4, 2019

- 7:00 am REGISTRATION and BREAKFAST BUFFET (included)
- 8:00 – 9:30 am **SAFETY FOR SURVEYORS**  
The Surveying Profession has always had an element of risk related to it. In historical times some of these risks might have been the Native Americans living in the land being surveyed, the diverse wild life found in the region or just the environment the surveyor was dealing with. Rarely do we think of the work place being safe for the surveyors of our past, has this risk gotten better or worse? In November of 1973 a Safety Manual for Surveyors was prepared and published by The Missouri Association of Registered Land Surveyors (MARLS) with help from the University of Missouri and aided by the Occupational Safety and Health Act (OSHA). Additional acknowledgements were given in this manual to National Safety Council, U.S. Forest Service, U.S. Postal Service, U.S. Coast and Geodetic Survey, U.S. Geological Survey, various utility companies and over thirty Highway and Transportation Departments. We will look at the differences of the work environment over the last 45 years and try to identify what is still relevant in today's work place and what is not. Are there new risks to manage not only for the field personnel but for the office staff too?  
**Mark Wiley, PLS**
- 9:30 – 10:00 am BREAK with EXHIBITORS
- 10:00 – 12 noon **UNLOCKING BOUNDARY DISPUTES-WHO HOLDS THE KEYS?**  
This course will provide a thorough examination of the key concepts of Real Property Law including Title Law, Conveyancing Law and Boundary Law with an in-depth discussion of the methods for creation and establishment of boundaries. Current and past court decisions defining the surveyor's role in determining land boundaries will be reviewed. Methods for determining solutions to multiple monumentation and the analysis of boundary evidence will be discussed. We will learn how to resolve difficult boundary conflicts by using alternative dispute resolution processes that benefit the land surveyor and the landowner and will also examine the surveyor's role in the litigation process. Participants will discuss various methods to prepare for depositions and courtroom testimony. The surveyor's role in documenting the final resolution of boundary problems will be presented and discussed.  
**John Stahl, PLS, CFedS**
- 12:00 – 12:30 pm LUNCH (included)
- 12:30 – 2:00 pm **RESOLVING BOUNDARIES & RESEARCH continued**
- 2:00 – 2:15 BREAK
- 2:15 – 4:45 **RESOLVING BOUNDARIES WITH FINAL PRODUCT, SURVEY PLAT**  
**John Stahl, PLS, CFedS**



# Registration

Name \_\_\_\_\_ RLS# \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

City, State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Email \_\_\_\_\_

## REGISTRATION FEES

MSPS Member (\$250)     Non-Member (\$400)     Technician (\$150)

*(Friday or Saturday option is \$125 per day, please indicate which day)*

Golf per person (\$85)

## PAYMENT OPTIONS

Credit Card (VS, MC, Dis, AmX)

Check

Invoice my Firm

Credit Card # \_\_\_\_\_

CVV Code \_\_\_\_\_ Amount Enclosed \$ \_\_\_\_\_

### Registration Information

Registration fee is \$250 for MSPS Members and \$400 for Non-Members. A special rate of \$150 is available for non-licensed technicians (Associate Members of MSPS). Registration fee plus 2019 Associate Membership is \$185. **Deadline for meeting registration is April 20, 2019.** After this date, a 10% processing fee will be added to registration fees. The fee includes instructional materials, refreshment breaks, luncheon on both days, cocktail reception and two breakfasts. To register, complete the registration form and mail it with your check to MSPS, 722 E. Capitol Avenue, PO Box 1342, Jefferson City, MO 65102. For more information on this course, call Sandra Boeckman at 573-635-9446.

### Golf Tournament

Register to play in the Golf Tournament Fundraiser for the MSPS PAC Fund to be held at The Cove, The Lodge of Four Seasons beginning at 1:00 pm. The cost is \$85 per person which includes two mulligans per player.

### Location and Lodging

The Lodge of Four Seasons, 315 Four Seasons Drive, Lake Ozark is the location for the Spring Workshop. A block of rooms has been reserved at the Lodge at a rate of \$124.00 for single or double occupancy. **Deadline for hotel reservation is April 10, 2019.** Make your reservation by calling the Lodge of Four Seasons at 888-265-5500.



### Cancellation Policy

MSPS reserves the right to cancel the program and return all fees in the event of insufficient registration. A participant may cancel a registration up to two weeks before the course date and receive a refund less a \$25

processing fee. **NO REFUNDS AFTER APRIL 20, 2019.**

### Continuing Education Credits

This course has been approved for 15 PDUs (7.5 each day) with the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors and Landscape Architects.

---

MSPS, 722 E. Capitol Avenue, Jefferson City, MO 65101

573-635-9446 ~ Fax: 573-635-7823 ~ msp@missourisurveyor.org ~ www.missourisurveyor.org

Return your registration form to MSPS before April 20, 2019.

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## Upper Louisiana in Transition (*continued*)

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Section 6: In addition, the Secretary of the Treasury was authorized to employ an agent for the purpose of appearing before the Board of Commissioners on behalf of the United States. The agent was to investigate the claims to land and oppose all claims that appeared fraudulent or unfounded. He was also to investigate claims to lead mines and present the evidence to the Board of Commissioners, who were to prepare a report to be submitted to the Secretary of the Treasury and ultimately to Congress. The Board of Commissioners was also authorized to employ a translator of the Spanish and French languages to assist them.

James Lowry Donaldson, a young lawyer from Maryland, was appointed recorder of land titles in May 1805. He was to commence his duties at St. Louis on September 1, 1805, but his arrival was delayed until mid-September due to travel difficulties and illness on the way (*Territorial Papers*, Vol. 13, pg 111, 124, 218).

John Baptiste Charles Lucas, originally from France (Marshall, Vol. 1, pg 97), but at that time living in Pennsylvania, was appointed a Judge of the Territory of Louisiana on March 12, 1805 (*Territorial Papers*, Vol. 13, pg 100). He was reluctant, however, to accept the appointment, because he considered the salary inadequate and the expense of moving to the Territory considerable. He, therefore, delayed in accepting the appointment of Judge with the hope that he might also be appointed as one of the commissioners for ascertaining and adjusting the titles and claims to land. Subsequently, he was appointed a commissioner on May 1, 1805 and he accepted both appointments (*Territorial Papers*, Vol. 13, pg 122, 123, 130). He arrived in St. Louis in mid-August 1805 (*Territorial Papers*, Vol. 13, pg 189).

Clement Biddle Penrose of Pennsylvania (Marshall, Vol. 1, pg 97), nephew to Governor James Wilkinson, was appointed to the remaining position of commissioner for ascertaining and adjusting the titles and claims to land in the Territory of Louisiana on May 1, 1805 (*Territorial Papers*, Vol. 13, pg 122).

William C. Carr, a young lawyer who had moved to Sainte Genevieve a few years before, was appointed by the Secretary of the Treasury to represent the United States as agent before the board of commissioners (*Territorial Papers*, Vol. 13, pg 161, 186).

Since William C. Carr was resident in the territory at the time of his appointment, he had a good feel for the sentiment of the inhabitants at that time. His comments to the U.S. Attorney General, John Breckinridge, in a letter, dated October 14, 1805, foreshadowed the challenges that lay ahead for the Board of Commissioners. Carr noted that the act passed for ascertaining and adjusting the titles and claims to land was regarded by the French inhabitants as extremely rigorous, if not incompatible with the Treaty between the United States and France. The act limited the classes of claims that could be confirmed and left many classes of claims unaddressed. He also noted that St. Louis as the meeting place for the Board of Commissioners was not a central location and that it presented a hardship for the claimants in the southern settlements, such as New Madrid. The distance and the expense would make it difficult for claimants to comply with the requirements of the act (*Territorial Papers*, Vol. 13, pg 237).

At last all appeared to be in place to begin the process of examining claims to land. The laws had been passed. The necessary personnel had been selected. The task lay ahead. And already there was trouble on the horizon. 🇺🇸

### SOURCES

Houck, Louis, *A History of Missouri From the Earliest Explorations and Settlements Until the Admission of the State into the Union*, 1908

Marshall, Thomas Maitland, *The Life and Papers of Frederick Bates*, Missouri Historical Society, 1926

Stoddard, Major Amos, *Sketches, Historical and Descriptive, of Louisiana*, 1812

*The Territorial Papers of the United States*, compiled by Clarence Edwin Carter, 1948

*U. S. Statutes at Large*



# GEOID18 & Missouri

## It is Coming, and Missouri Surveyors Played a “Leading” Role

by Donald Martin

The National Geodetic Survey (NGS) continues on towards the coming “New Datums” in 2022. The new datums of 2022 are part of the NGS charge to improve the National Spatial Reference System (NSRS). A critical portion of the NGS Ten-Year Strategic Plan 2013 – 2023 under their goal to modernize the NSRS, NGS will replace the North American Datum of 1983 (NAD 83) and the North American Vertical Datum of 1988 (NAVD 88) with a new geometric reference frame and geopotential datum in 2022. The new datums will be:

- **NATRF2022** - North American Terrestrial Reference Frame of 2022 (horizontal/3D)
- **NAPGD2022** - North American-Pacific Geopotential Datum of 2022 (vertical)

The new models/frames set for activation in 2022 will be based on data collected during various efforts to provide refined measurements. The new generation measurements and their subsequent models will derive improvements based on the two-fold elements of *technology* and *programs*. *Technology* in these cases means tools which have facilitated wide area scale and precision capabilities not available in the past. This has been the GPS based instruments and infrastructure which are now the common equipment for geodetic observations. In terms of *programs*, it is NGS efforts such as Gravity for the Redefinition of the American Vertical Datum (GRAV-D) Project and GPS on Bench Marks (GPSonBM). When brought together into a new reference frame these “datums” will be time dynamic systems adjusting for geoid undulations, changes to orthometric heights, gravity anomalies and the resulting changing coordinates to positions throughout the system. Free from the constraints of the current fixed location system based on terrestrial surveys of monumented positions which deteriorate over time, the new reference frame will be a system reflecting a new era of refined measurements incorporating GNSS derived results and gravimetric geoid modeling redefinitions to the vertical datum.

While there is a great deal of focus being given to the 2022 goals, there is still a lot of very good, very helpful data which has been collected by NGS and could benefit surveyors awaiting the changes coming in the next three to four years. At the end of the summer 2018 one of the above mentioned *programs*,



GPSonBM closed the field observation and submittal phase. This program called upon the states and private surveyors to make field observations on existing network positions and submit measurement results to NGS. The National Geodetic Survey then used submitted data to support improving the current geoid into the next hybrid geoid model (GEOID18). Having closed the submission deadline at the end of August 2018, NGS ran their final database extraction in October. A result of this is the new release (April 2019) of a beta version of GEOID18.

### Missouri and GPSonBM

Brian Ward, NGS’s Central Plains Region Geodetic Advisor John Ellingson has one word to describe the Missouri contributions to the GPSonBM effort – “excellent.” He described the Missouri success rate as exceeding 98%; “it would have been 100% but a few of the Priority Points we [NGS] selected could not be used” says Ward. As well as attaining a high success rate, Missouri is among the top ten states in the sheer number of solutions submitted through the NGS OPUS Share system. Leading the Missouri contributions was the State Land Survey Program (LSP) of the Department of Agriculture and their reliable partner the MoDOT surveyors. These two teams covered the bulk of the observation schemes for our state but they will be the first to recognize the contributions of numerous surveyors in private practices. One of the most unique contributions of time and talent came from surveyors of the Southwest Chapter and the Ozark Chapter of MSPS. Mounting a one-day training and surveying event these folks gave a summer Saturday in service to the GPSonBM effort.

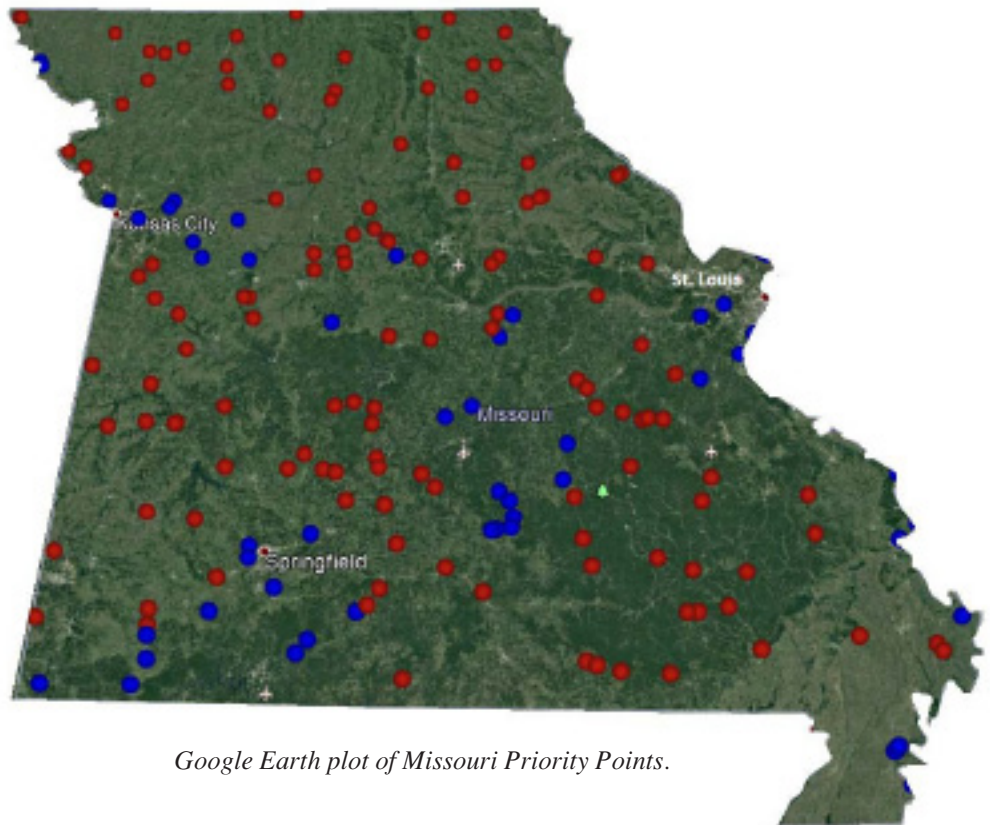


The beginning of the Missouri role in helping with NGS efforts started a couple of years ago when the NGS regional advisors began reaching out to partners in their respective states, telling them about the coming programs and soliciting them for help. Although not necessarily easy or convenient the idea was manageable.

In the case of Missouri, there had already been some thinking on this topic. With their statewide responsibilities and their frequent recovery and use of NGS stations, the LSP and MoDOT surveyors were particularly aware of where the problem areas were – where more positions and more solution redundancy were needed to enhance the existing geoid (GEOID12B). Coincidentally to this, Missouri surveyors were taking advantage of the OPUS Share system for position solutions. As these solutions were derived, NGS was incorporating these multitudes of observations and realized there was a real opportunity to tighten up their geodetic models.

Geodesist at NGS headquarters began researching and selected existing bench marks. Lists of these marks were provided to participating surveyors. Driven by Geodesist Kevin Ahlgren, he and others on the NGS team developed the list in shareable forms of a spreadsheet list, shape files suitable for import into GIS programs, and KML files compatible to plotting the list to Google Earth. The desired BM's were titled Priority Marks and categorized as:

- Priority A - marks needed to fill gaps or resolve conflicted existing information; these were the most valuable for improving geoid modeling with new observations.
- Priority B - marks needed to confirm relationships suggested by other data in the area; density of Priority B marks increased confidence in the geoid modeling.



Google Earth plot of Missouri Priority Points.

The NGS regional advisers then approached surveying stakeholders (not the chainman/rodman kind!)

seeking participation within the states. On behalf of Missouri the LSP and MoDOT were first in line. From there, the surveying of both departments worked to sell the idea to the higher-ups in their respective organizations. Seeing the statewide benefit of a better geospatial infrastructure these departments got onboard.

The program required that survey crews execute a three-phase set of activities with the “catchy” phrase *Recover, Observe, Report*. This was the shortened form of instructions for surveyors to; research existing bench mark descriptions then physically find the mark, setup and collect GPS observations on the bench marks with accompanying field notes and photographs, and submit the information to NGS via online tools – they were to *Recover, Observe, Report*.

(continued on next page)

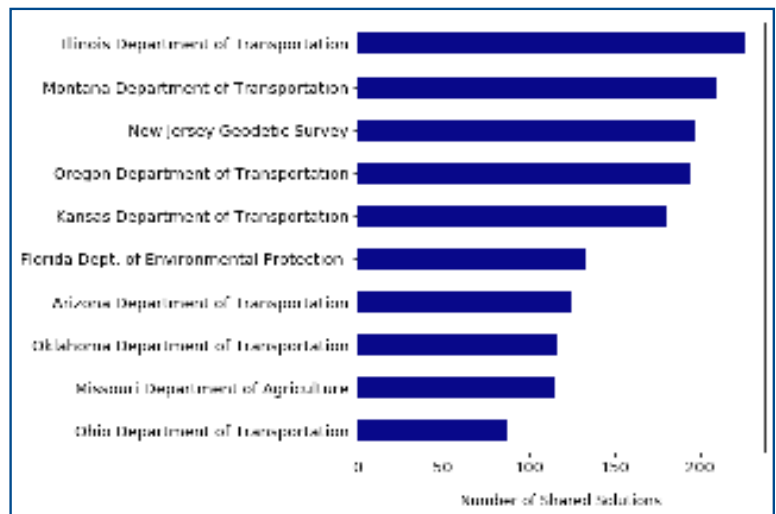
# GEOID18 & Missouri (continued)

## To the Field

With Priority Mark lists in hand and instructions for their observation and submission protocols, these Missouri surveyors hit the road looking for benches and taking GPSONBM sessions. Of course it wasn't quite that simple. This all had to fit within the demands of ongoing projects. In the case of the MoDOT crews, they balanced highway projects with the NGS program and the DOT surveyors included GPSONBM into their already demanding schedules.

The tasks of making GPSONBM observations were complicated for field crews by the required needs of data integrity. Not simply the standard bread-n-butter caliber of GPS observations, crews were required to run GPS sessions of four hours for each setup. In the event of two observations being needed on a mark, surveyors were required to breakdown setups after four hours and setup the receivers anew for the second session. It was even preferred that second sessions occur on separate days to allow for movement in the GPS satellite configuration.

Observation schedules were complicated due to the recovery of marks which were not suitable for GPS observations or instrument setup. In some cases, marks were not available at all, having been destroyed. With all of this to consider, the Missouri surveyors were still hustling through the summer of 2018 trying to get things done before the submission deadline in August. When they were done and all observations had been made with all data submitted through the Online Positioning User Service (OPUS) system it was revealed that Missouri was among the leaders in observations submitted to NGS. What a result! Imagine the initial desires to merely help improve the geospatial infrastructure and “do what they could to help.” Have they ever helped! It could be said that when it comes to recovering and observing Priority Marks, contributing Missouri surveyors *set the mark*.



<https://www.ngs.noaa.gov/GPSonBM/progress-update.shtml>

## The Benefits

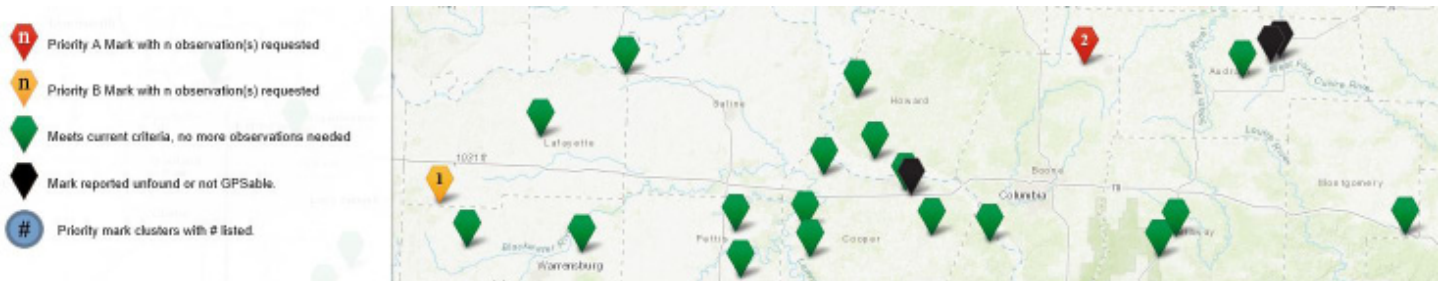
With observations completed, data submitted, results extracted and the model adjusted, all that is left is the checking of the beta release suitability and effectiveness through use by surveyors. GPSONBM has also provided recovery note updates and the perpetuation of many of the nation's 800,000 benches. And in those instances where surveyors sought new marks for observations, the system has expanded. But the ultimate benefit may be moving surveyors away from the need to access such marks in the future.

As efforts to support reference networks and model development move forward from result such as those derived in this program, refinements bring users ever closer to an era of GPS elevation reliance. While GPS technology can support operation within very tight tolerances, there have remained discrepancies within the reference frames themselves which have precluded the surveyor's expectation to rely on elevations obtained from non-differential means. While this hasn't been absolutely resolved yet (“hard” levels still have their place) the addition of more data obtained through GPSONBM has us closer still to vertical positioning through GPS. Yes, GPSONBM and the transitions planned for 2022 have us to where we may be accepting verticals from GNSS equipment applications as sufficient for most positions.

## GEOID18 Means Improvement

At its most basic and practical applications for working surveyors, GEOID18 mean better ortho heights. Use and testing will reveal how thoroughly this has been achieved, but with the greater density of BM observations augmenting the model more consistent, accurate height solutions via GPS may well be in store. When asked, Brian Ward dares speculate that repeatable heights in the 2-3cm+/- range could result. But he also advises that this does not mean an absolute end to GPSONBM. An upcoming phase of measurements to track and strengthen the GEOID are in the plans. To monitor the velocity of movement affecting the model there is to be repeated observations on a regular cycle, most probably every six months. These observations will be on HARN stations and select Priority Points. Not only tracking movement, these measurements will help NGS in the development of translation tools.

The roll-out of GEOID18 does mark one of the ongoing improvements NGS and all surveyors submitting data to NGS have facilitated. In terms of the strategic plan, the National Geodetic Survey is closer to the 2022 transition as this step is part of the reduction of errors in the heights of the reference frame. So, on the road to replacement of NAVD 88 Missouri surveyors are not left to wait only for the changes of 2022. Thanks to them, all in our state will benefit from this interim step; GEOID18, the last hybrid geoid model of NAVD 88. 🇺🇸



Priority Points along the I – 70 corridor, <https://www.ngs.noaa.gov/GPSonBM/webmap/>

## GPSONBM Nationwide

### Priority Marks Progress Update

In February 2018, NGS released a list of approximately 5,800 priority bench marks where GPS data is needed to improve the modeling for GEOID18 and the transformation tool that will be created for NAPGD2022.

Approximately 2,469 GPS observations have been submitted to date. So far, we've reached 45.5% of our nationwide goal, however the number of marks requested per state varies greatly, and many states have submitted observations on a much higher percentage of the requested marks.

Each bench mark observation is at least 4 hours in length, so every submission is a significant contribution toward improving the model. Thank you to all who have contributed data. Your efforts are helping to improve NGS models and tools in your local area!

### Who's Submitting Bench Marks?

- 73% State agencies (Transportation, Agriculture, Natural Resources, Water Resources, Public Utilities, Geodetic Surveys)
- 13% Private sector (Surveying, Engineering, and Geomatics firms)
- 7% City/county agencies (County surveyors, engineers, public works)
- 4% Federal partners (NOAA, USACE, BLM, NGA, NAVO, NPS)
- 3% Academics (Mainly university surveying programs)

*From the NGS GPSONBM Progress Dashboard*





# NEWS & VIEWS

National Society of Professional Surveyors

January 16, 2019

NSPS

## NSPS Finds Surveyors Eligible for New Qualified Business Income Tax Deduction

Although the Tax Cuts and Jobs Act (TCJA) was signed into law in late 2017, consultants and lawyers are still learning of new incentives beneficial to individuals and businesses alike. In response to a member inquiry, NSPS Government Affairs consultants, John M. Palatiello & Associates, Inc., provided an analysis finding that surveying firms operating as a pass-through (PT) entity would be eligible for a new 20% deduction on 'qualified business income' (QBI). This new deduction replaces the domestic production activities deduction (DPAD) which allowed up to a 9% deduction for businesses that mostly operated in the United States.

The Treasury Department's proposed rules acknowledges that the Internal Revenue Service (IRS) generally follows the historical guidance given under Section 448 — a provision adopted in the 1986 tax law that, thanks to lobbying at the time by then-ACSM Government Affairs Director John Palatiello, which defined surveying and mapping as part of the broader with architectural and engineering field. Congress and the Executive Branch, and even the courts, have cited the Section 448 definition as a basis for including surveying with architectural and engineering services. Treasury is expected to publish its final rules and regulations in the coming months and NSPS will continue to provide updates as they become available. It is recommended that NSPS consult their CPA, attorney or tax counselor for more definitive advice.

January 16, 2019

NSPS

## NSPS meets with Texas Congressman

Representative Dan Crenshaw (R-TX), a newly elected member of Congress from the 2nd District of Texas, recently met with NSPS lobbyist John "JB" Byrd. Crenshaw is originally from Houston, Texas, and a 6th generation Texan. His father's career in the Texas oil and gas industry moved his family all over the world, including Ecuador and Colombia. As a result, Dan is fluent in Spanish. From an early age, Crenshaw knew that he wanted to serve his country with the most elite fighting force in history: the U.S. Navy SEALs. Dan graduated from Tufts University in 2006, where he earned his Naval officer commission through Navy ROTC. He recently made national news due to his response to a Saturday Night Live satire. JB and Rep. Crenshaw discussed flood mapping and Homeland Security issues.



*(continued on page 38)*



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## NGS News & Events *(continued)*

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### NGS Briefs the National Academies on Precise Positioning Infrastructure

Friday, November 16, 2018

NGS briefed the **National Academies of Science, Engineering, and Medicine (NASEM)** on its program activities as part of a new NASEM study on geodetic infrastructure. The study, titled “*Evolving the Geodetic Infrastructure to Meet New Scientific Needs,*” addresses improvements to the national infrastructure that will be necessary to foster precise positioning and navigation applications, particularly GPS. NGS and other federal agencies whose missions support geodetic infrastructure briefed a panel of experts and NASEM staff on related past and planned future program activities. The study’s fact-finding segment will end in 2019, and the report is slated for publication in 2020. Independent studies from NASEM and the National Research Council provide valuable expert feedback about the needs of the nation and are widely viewed as the best available nonpartisan advice.



*National Academy of Sciences Building.*

### NGS Presents Keynote at North American Young Surveyors Meeting

Friday, November 09, 2018



NGS staff members gave the keynote address at the **International Federation of Surveyors Young Surveyors** North American Meeting in College Park, Maryland. Their presentation, titled “*NSRS, The Future, and You,*” connected the past, present, and future of the effort to modernize the U.S. National Spatial Reference System to highlight how modernization will affect the public in 2022. The meeting brought together over 55 young surveyors from five countries and throughout the United States and featured speakers from several equipment manufacturers, surveying societies, and surveying companies. This year’s meeting placed special emphasis on planning for the future of surveying in light of rapid changes the profession has undergone and focused on the demands of a global increase in development.



## NGS Test Facility Supports U.S. Army Corps of Engineers

Friday, November 2, 2018

The NGS Testing & Training Center, located near Fredericksburg, VA, hosted a team from the *U.S. Army Corps of Engineers (USACE)* to test the Corps' navigational buoy transceivers. USACE used the facility's grounds to mimic water channels in order to better understand how far buoy-mounted transceivers can communicate with each other at varying power levels and heights above water level. The test results will ultimately be shared with the U.S. Coast Guard and NOAA's Office of Coast Survey.



## NGS Represents U.S. at Reference System Symposium

October 19, 2018

NGS gave presentations on modernizing the U.S. National Spatial Reference System and regional reference frames for North America at the *Geocentric Reference System for the Americas Symposium* in Aguascalientes, Mexico. Through interagency collaborations, the symposium helps to align scientific, political, and civil needs for numerous endeavors based on measuring changes in the Earth. Data sharing is critical for responding to natural disasters such as earthquakes and tsunamis, and for maintaining and modernizing geodetic reference frames. 🇺🇸




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# Land Surveyors were Boots on the Ground and Eyes in the Sky During Kilauea Eruption

by Jim Mendoza, January 23, 2019, Hawaii News Now



HONOLULU (HawaiiNewsNow) - Last May, as lava erupted from Kilauea, land surveyors from Stantec put personnel on the ground to stay ahead of the lava flowing from Fissure no. 8.

“We were trying to figure out where it might eventually go,” said Victor Rasgado, Stantec’s senior land surveyor. Protected by gas detectors and gas masks, he and his team did the grunt work, marking spots and establishing what surveyors call control points.

“We were using anything out on the ground that would be visible from a UAV at 1,000 feet,” he said.

Those markers helped the University of Hawaii-Hilo, USGS, and Civil Defense map where the lava had traveled and where it might go.

At the time Stantec GIS analyst Rose Hart worked for UH-Hilo’s Spatial Data Analysis and Visualization Lab. She piloted a drone and collected video while working within tight flight restrictions.

“It’s really exciting and cool to see the sheer force and power of nature, Pele. But it’s also pretty devastating and sobering to see the destruction that comes from that power and force,” she said.

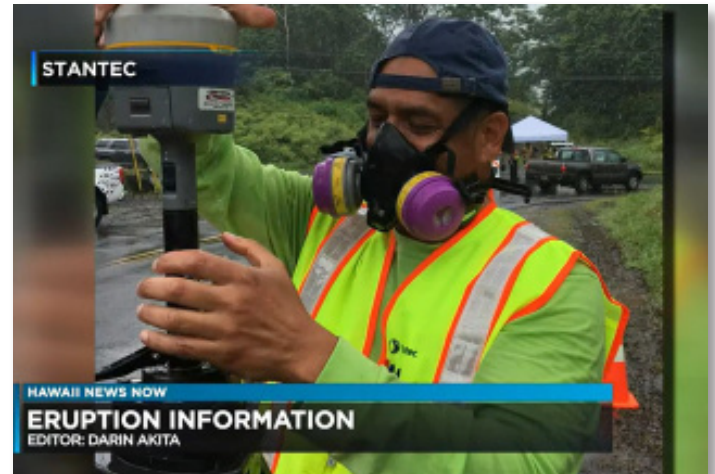
Under the direction of Dr. Ryan Perroy, the lab as well as USGS worked to mobilize and manage UAS operations throughout the eruption event that lasted four months. The information Hart and Rasgado gathered went straight to Civil Defense.

“They were able to let folks know, ‘Hey, it’s coming in your direction. Let’s start getting people evacuated,’” Rasgado said.

After the lava stopped in September, Stantec did more documenting to compare the before and after.

All of the data is now in the hands of the University of Hawaii Hilo, USGS and Hawaii County.

“We wanted the information that we collect with the drones to be more than just images,” Hart said. “We wanted to really understand how the surface of the earth was changing in that area.”



The eruption destroyed hundreds of homes and caused hundreds of millions of dollars in damage. Authorities will use Stantec’s studies to determine where future lava flows might go, and where it might be safe to build.

“We were just fortunate we could help in a small way,” Rasgado said. 🇺🇸

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# NSPS News & Views (continued)

January 16, 2019

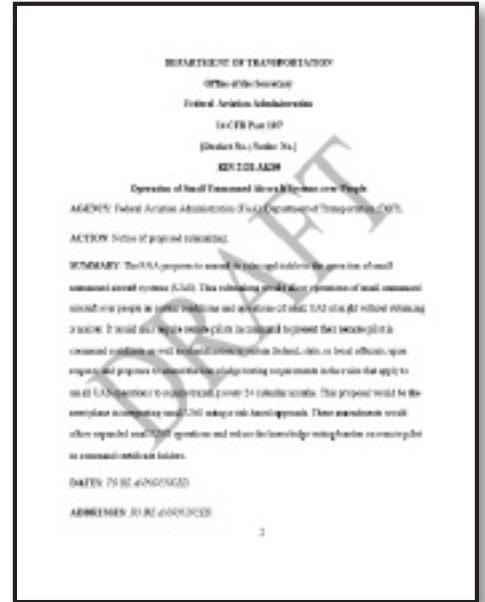
NSPS

## USDOT issues new proposed rule for UAS flights over people

Transportation Secretary Elaine Chao rolled out a new proposed rule that would make it easier to fly a drone over people and at night. The ability to fly drones over people can be helpful for crowd control, newsgathering, infrastructure inspections, and other applications. The Trump administration plans to propose a remote operations identification rule in May, which FAA now says it will finalize before the rule for flights over people and at night takes effect.

Copy of proposal available at:

[https://www.faa.gov/uas/programs\\_partnerships/DOT\\_initiatives/media/2120-AK85\\_NPRM\\_Operations\\_of\\_Small\\_UAS\\_Over\\_People.pdf](https://www.faa.gov/uas/programs_partnerships/DOT_initiatives/media/2120-AK85_NPRM_Operations_of_Small_UAS_Over_People.pdf)



January 9, 2019

NSPS

## National Surveyors Week 2019!

If you haven't already done so, it is time to begin planning for **National Surveyors Week 2019 (March 17-23)**. Remember, NSW is always celebrated during the week in March following the 3rd Sunday!

A letter has been sent to President Trump requesting that a proclamation be issued recognizing NSW. Readers should reach out to their respective Governors and local jurisdiction officials requesting a similar proclamation (this is often done through the State Surveying Society).

Stay tuned! NSPS is working on the development of a "theme" for the week. Hopefully, this will become an annual thing. Thanks to NSPS member Bob Banzhoff (MD) for suggesting this!

January 9, 2019

NSPS

## NSPS election results!

December 31, 2018 marked the last day of voting in the current cycle of NSPS officer elections. Current NSPS Secretary Tim Burch (IL) was elected as incoming Vice President. Current NSPS Treasurer Bob Miller (PA) and NSPS Secretary nominee Craig Amy (MI) ran unopposed. Thanks to all the candidates!

While all of the NSPS members who volunteer to run for office are extremely well-qualified, experienced, and capable of serving the society and the profession well, it is still perplexing that so few NSPS members vote in elections. It was hoped/expected that going to computer-based elections a few ago would result in higher voter participation, but unfortunately that isn't the case. From among the more than 15,000 NSPS members who were directly notified, and information about voting being posted in this newsletter and on the NSPS website, only about 2000 voted in this election. Sadly, that participation level has held steady for several years.

**January 9, 2019**

**NSPS**

### **Scientist confirms subsidence impact on sea level**

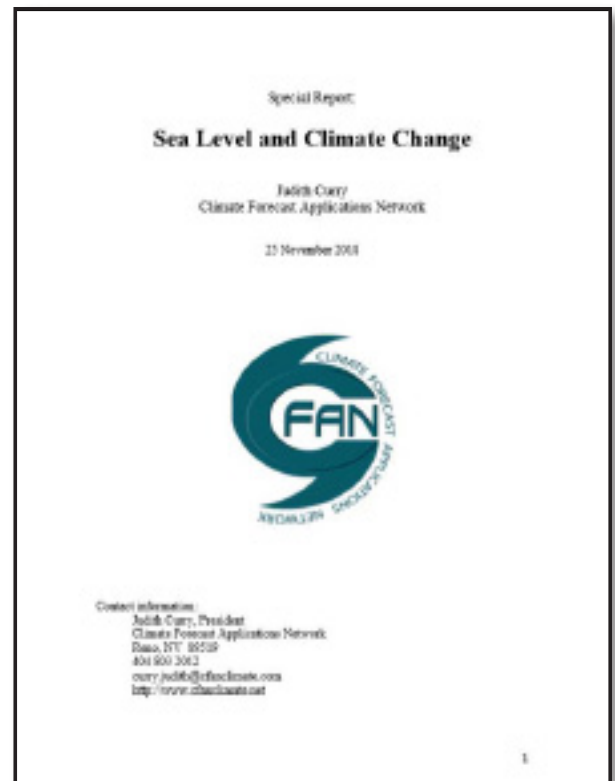
For years, climate prognosticators have warned that human-caused global warming is fueling catastrophic sea-level rise, but now climatologist Judith Curry is rocking their boat. In her latest paper “Sea Level and Climate Change,” Ms. Curry found that there is a human-caused component to the problem of sea level rise, but said it has more to do with the earth sinking than the oceans swelling.

“In most of those cases where they’re suing, half of the sea-level rise is really from the land sinking, rather than anything that the ocean is doing,” she said. “If you look at Galveston and New Orleans, much more than half is caused by sinking. And this comes from geologic processes, it comes from landfills on wetlands.”

She cited groundwater withdrawal in the Chesapeake Bay area, which has also caused sinking. “That’s really underappreciated, this whole issue of problems with coastal engineering that we’ve caused that have made things worse,” Ms. Curry said.

The NSPS Joint Government Affairs Committee is studying the need for a national subsidence data collection program and an article on the potential need for such a program, authored by NSPS Government Affairs Consultant John Palatiello, appears in the January 2019 issue of P.O.B. magazine.

*Copy of Sea Level and Climate Change available at:*  
<https://curryja.files.wordpress.com/2018/11/special-report-sea-level-rise3.pdf>



**January 9, 2019**

**NSPS**

### **Virginia bill allows GIS mapping to settle county boundary disputes**

HB 1649, a bill pre-filed for the 2019 General Assembly session in Virginia, would permit, on a statewide basis, for boundaries between counties to be determined by agreement of the counties using GIS maps. The bill provides a generic process for resolving boundary disputes and anomalies between jurisdictions. It takes a process originally enacted to address a situation in Goochland and Louisa counties and amends it to apply to similar situations across the Commonwealth. The Virginia Association of Surveyors (VAS) is reviewing the bill to determine if establishing boundaries based on GIS puts public health, welfare and safety in jeopardy. Such boundary adjustments could affect individual citizens’ taxes, healthcare, voting rights, and other government programs, services and rights and a county Geographic Information System (GIS) is not an authoritative source of boundary data, may not be ground-truthed, or of sufficient accuracy for use as a governmental boundary.

(continued on next page)

# NSPS News & Views (continued)

January 2, 2019

NSPS

## NSPS Most Accessed Article for 2018; Should you hire a land surveyor?

From May 2, 2018: The NSPS Public Relations Committee has developed a new brochure for use by members to assist in providing information to the public regarding instances in which a Surveyor should be hired, tips on hiring, how Surveyors do their work, and what to expect from a Surveyor. Copies of the brochure are available by contacting Trish Milburn (trisha.milburn@nsp.us.com) at NSPS headquarters.

**When do I need a Land Surveyor?**

**When you purchase a home:** A home is usually the biggest investment of your life, and only a Professional Land Surveyor can determine the boundaries of the property and make sure you are getting all the land you believe you will own. By having your property surveyed before you buy, you will know where all the property lines are, what you are buying, and whether any natural or man-made features near the property lines are on that property.

**When a lender requires a property to have flood insurance:** The elevation of the nearest floodplain in relation to your property can be determined by the Land Surveyor. Having your property analyzed by a Land Surveyor can be the difference in a homeowner paying for expensive flood insurance or completing a FEMA Elevation Certificate to confirm your property is in the clear.

**When you install a fence, do landscaping, or make other improvements to your property:** By having a survey done first, you can plan your project and make sure it is within the boundaries of your land. Fences that encroach onto a neighbor's property have the potential to turn good neighbors into bad neighbors.

**When you build an addition to your home, a new garage, or other structures:** When a homeowner builds an addition or new building, the Land Surveyor can locate all the features of the property that help determine the building setback and the size of addition or new structure allowed.

When in need of a professional service, you should know exactly what you are getting. A Professional Land Surveyor will take the time to understand your survey needs.

Surveyors who are members of their local, state, and national professional organizations are showing that they are concerned with changes in laws and technology. They are given the most opportunity for continuing education and changes affecting the land surveying profession. Always consider using a member of your local or state professional land surveying organization.

This information is supplied by the National Society of Professional Surveyors (NSPS) and distributed by:

**Should You Hire a Land Surveyor?**

*A Homeowner's Guide to Boundary Surveys*

Protecting your investment with the services of a Licensed Land Surveyor.

November 20, 2018

NSPS

## Sino American International Survey Competition

By all accounts, the competition was a great success in highlighting the Surveying profession, and in building both organizational and personal relationships among the participants.

The teams representing NSPS and the Beijing Municipal Federation of Trade Unions gathered at the host hotel on Tuesday 11/13/18 for the opening ceremonies, introductions of the team members, and a presentation by representatives of local Trimble dealer Keystone Precision Instruments about the equipment to be used for the 'field' exercises portion of the competition.

On Wednesday 11/14/18, the teams traveled to the National Geodetic Survey (NGS) Testing and Training Center at Corbin, VA for the 'field exercises' portion of the competition and an introduction to the multifaceted activities undertaken



at the Center. The ‘field exercises’ had been planned for Thursday 11/15/18 on the National Mall in Washington, DC but a predicted snow event (which came to pass) required the change in plans.

The “theoretical” portion of the competition was held on Thursday 11/15/18 at the host hotel with each member of both teams answering 50 multiple-choice questions which had been collectively selected by the judges from among a total 200 questions previously submitted by the respective team leaders.

Both the “field” and “theoretical” portions of the competition were independently judged with the combined result used to determine the overall winning team. The NSPS team won the “field” portion and the Chinese team won the “theoretical” portion. The comparison of the scores of the teams showed that the gap in the “theoretical” portion was greater than the gap in the “field” portion, resulting in the team from China being named the overall winner.

Among the most often heard reactions was the appreciation for the opportunity to build bonds among the participants representing both teams. The team leaders met on the final day to begin discussions about the continuation of the competition on some mutually agreeable plan for timing and location.



**November 20, 2018**

**NSPS Foundation by Carl C. de Baca, Nevada Traverse**

**IT CAN'T HAPPEN HERE.\***

**\*Except it can.**

Natural disasters can strike just about anywhere. While many states are immune to the ravages of hurricanes like Florence and Michael, that hit the Southern U.S. in September and October of this year, or Harvey, Irma and Maria that wreaked havoc on Texas, Florida and Puerto Rico last year. We now have the Nevada and California fires of 2018 that have destroyed and are continuing to destroy the homes and livelihoods of thousands of victims. While these fire disasters continue to make headlines, there other natural disasters such as floods, earthquakes and tornados that can affect your friends, neighbors and other members of the surveying community.

*The National Society of Professional Surveyors Foundation, through its Disaster Relief Fund, has helped dozens of surveyors whose homes were destroyed by disasters such as these. But we do this from a very modest base and we could use your help. By helping us with a donation of any amount, you are helping surveyors across the nation as surveyors elsewhere may one day help you! Please donate today.*



To make an online donation, go to:

<http://www.nspis.us.com/donations/>

Or if you prefer to send a check, please make the check payable to the NSPS Foundation, Inc., place DRF in the lower left-hand corner and mail it to:

NSPS Foundation  
5119 Pegasus Court, Suite Q  
Frederick, MD 21704

The NSPS Foundation is a 501 C 3 Public Charity and all donations as 100% Tax Deductable.

*(continued on next page)*

# NSPS News & Views (continued)

November 20, 2018

NSPS

## Get Kids into Survey Update!



Order your Forestry and Civil posters! Posters may be ordered at: [www.getkidsintosurvey.com](http://www.getkidsintosurvey.com). 🇺🇸

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# Remembering Bob Myers

by Darrell Pratte

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On February 10, 2019 Beth-Scott Dickerhoff, daughter of Robert E. Myers posted these words in Mr. Myers' CaringBridge journal, "*Dear Family, Friends and Prayer Warriors - Friday, February 8, 2019 Dad went to his eternal home...*" With those words came the news Bob Myers, Missouri's first State Land Surveyor, had released his earthly bonds and claimed his place in the eternal sphere.

Publishing deadlines preclude us from reflecting on the full impact this brilliant man made on Missouri surveying. To summarize his contributions in a few, simple highlights does not do justice to his legacy. But the following timeline of his career is offered in lieu of fuller reflections to come in the June edition of *Missouri Surveyor*. This son of a St. Louis surveying and engineering family Mr. Myers first worked on a survey party while a mere boy. He and the associates of Myers, Keller and Byers traveled the city by streetcar with their transit, tapes and tools surveying lots and blocks, commencing a uniquely accomplished tenure in the surveying profession.



- 1952: Graduation from Washington University, BSCE; began two years of service in the US Army.
- 1955: Missouri enacts licensing law to practice Land Surveying; Mr. Myers is awarded license LS-134
- 1957: Joined the Missouri Association of Registered Land Surveyors (MARLS)
- 1964: Served as President of MARLS
- 1971: Hired as Missouri's first State Land Surveyor (SLS) by the newly created Land Survey Authority (LSA)
- 1973: Files first Codified State Regulations creating Minimum Standards for Property Boundary Surveys
- 1974: PLSS corners being a "natural resource," Mr. Myers lobbies for the LSA's assignment to the Missouri Department of Natural Resources, creating the Division of Geology and Land Survey.
- 1979: Rewrites Missouri Revised Statutes (RSMo) 60, changing the method of reestablishing a lost corner to a mathematical proportion of the whole. Tackles the problem in RSMo 60 stipulating the antiquated amount a County Surveyor can charge; restoring the Office of County Surveyor in one-third of Missouri Counties.
- 1983: Revises minimum standards to include requiring the filing of PLSS corner documents with the SLS office.
- 1984: Opens RSMo 60 to define NAD83 as the horizontal datum used to calculate State Plane Coordinates
- 1990: Authored legislation requiring mandatory filing of surveys creating new parcels. MARLS creates the *Robert E. Myers Service Award*
- 1991: Serves on the Missouri Boundary Commission providing oversight to the McKissick Island dispute between Missouri and Nebraska. Introduced legislation creating the Land Survey Advisory Board
- 1992: Receives the MARLS *Surveyor of the Year* award
- 1997: Retires as State Land Surveyor, begins consulting service as Land Related Technology.
- 2009: Receives Missouri Society of Professional Surveyors *Robert E. Myers Service Award*
- 2010: Established a baseline in St. Louis County for validation testing of measurement methods
- 2011: Authored legislation to replace the Land Survey Advisory Board with the Land Survey Commission
- 2015: Receives the MSPS *Lifetime Achievement Award*
- 2018: Publishes results of St. Louis County baseline testing 🇺🇸



# State Tech Update: The Last Two Semesters, and if you're Planning to Enroll

by Cynthia Cox and Joe Paiva

We've set a new benchmark in student enrollments. We've previously reported that enrollments in the two courses offered each semester has been at least 30. That's not to say 30 complete the semester. Life or work or both sometimes compete too much for the time and some may drop out. We also have a few who find the material too demanding, and they are forced to drop out. This is the reality of taking college courses. This unfortunate occurrence of dropouts is likely, as for many, enrolling in the courses at State Tech may be their first college experience. Taking the courses online makes it harder, not easier. This is another reason, even if a mentor is not required for the lab sessions, to look for more experienced people to be mentors when you take these courses.

We exceeded 40 total enrolled students for the current and past semesters! Will this trend continue? We don't know. But if this number is our new "high water" level, it may be indicative of increased support by the profession to foster advancement of their employees, and the interest of those employees to advance as well. Keep in mind that very few students, because most are full-time employees of surveying companies, have the available time to participate fully in more than one course per semester.

This is good news for the surveying profession in Missouri. This may be the first time we've been able to quantify interest in a surveying career by students, surveying companies and government agency employees, and others. It is now also the first time that we've been able to show an increase in the number of people actively working to make a career as surveying professionals. If you are an employer of these students, your support of your employees is commendable and should be recognized. If you are one of these students, congratulations in deciding to follow this path, and good luck to you.

If you have been a professional field mentor for students taking labs in Surveying I and II, thank you especially for your support. We would not be able to have students all over the state take these classes if they all had to attend the labs on campus in Linn. Even though there are only four very busy lab days per semester, it is a hardship for many, for a variety of reasons, to make it. So, the remote lab option, which requires a professional field mentor to sign up with the student, is an important and active ingredient to the success we are reporting.

For those of you who are thinking about enrolling, here is some information about the lineup we offer every spring and fall semester:

## Fall

CVT 240 Surveying I  
CVT 242 Land Records and Rules of Construction  
CVT 245 Introduction to GIS and GNSS (first time this will be offered is fall 2019)

## Spring

CVT 241 Surveying II  
CVT 243 Legal Aspects of Property Boundary Surveys  
CVT 255 Advanced GIS and GNSS (first time this will be offered is spring 2020)

The best way to enroll (and you can do this at any time for the next upcoming semester) is to let Cynthia Cox, Director of Technical Continuing Education at State Tech know of your interest. She can be reached at [Cynthia.Cox@state-tech.mo.edu](mailto:Cynthia.Cox@state-tech.mo.edu). She can provide all the information about the courses and a web link to the application form; she can also get you set up with a remote lab agreement, if that's how you want to participate in the labs. Ms. Cox can also tell you what the tuition is going to be, and other College information such as key people you need to communicate with to continue your registration process.

Please note that only students with residences in Missouri can be enrolled for online courses at State Tech (currently). We generally recommend a good handle on math, particularly trigonometry, and we may want to look at your high school transcript before admitting you to Surveying I. Once you start the enrollment process, you will get a letter



via U.S. Mail to your residential address. This contains your student State Tech email address and login credentials for the email and the learning management system (LMS) used for the courses (which is called Moodle). After that letter, you'll need to monitor your new State Tech email account, as all other communication including billing is done exclusively via your State Tech email account. Students are expected to check into to the LMS once every 24 hours.

We strongly discourage taking more than one online course per semester. Past experience indicates very low likelihood of being able to do well in both courses. It's not unusual when a student, in a rush to gain the college credits, enrolls in two courses in a single semester and then has the disappointment of a semester grade of D (or F) in one or both courses.

Here are the dates for the first and last days of next few semesters. If you think you might encourage your employees to attend or you are thinking about attending, please mark your calendars so they can apply with ample time for the registration process.

Fall 2019:	August 27 <sup>th</sup>	/	December 19 <sup>th</sup>
Spring 2020:	January 7 <sup>th</sup>	/	May 8 <sup>th</sup>
Fall 2020:	August 25 <sup>th</sup>	/	December 17 <sup>th</sup>
Spring 2021:	January 5 <sup>th</sup>	/	May 7 <sup>th</sup>

PLEASE do your planning and get the paperwork completed early. This is not like registering for an MSPS program where you can walk in and register on site. It takes well more than a week to get everything processed. For the Spring semester, it is best to do it before the *end* of the previous, i.e. Fall semester. The college campus, staff and faculty operate at minimum levels after classes end, and grades are posted. So, processing of your application will

take a lot longer if you wait until the week between Christmas and New Year's, for instance. This means beginning the process one month before the Spring semester begins.

For the fall semester, we recommend applying at least two weeks in advance (if you want all the staff at State Tech who are involved in processing your registration, taking your payment and admitting you to the class to love you).

If you have unusual requests: for instance, you took the equivalent of Surveying I at another college and you want to now take Surveying II, you'll probably be asked to provide a college transcript. You may also be asked to provide the syllabus, the name of the instructor, name of textbook and other information, especially if the course you took is not on the list of courses approved by the Board for the education requirements for licensure in Missouri. These things can add more time to the process. Yes, you can be admitted 3-5 days late after the semester starts, but it can put more of a demand on you to catch up. It also puts more demands on us. (Remember that it is helpful to make sure that the State Tech staff and instructors like you, welcome you and want you to do well!)

So, employers, encourage your people to inquire early. Students, please don't come late to the party. We love having you, but it's nice if you're there when the "music" starts. Don't forget you are likely to have other delays, including having to wait around for your textbook to arrive from wherever you ordered it. This limits how well you can participate and keep up in the early weeks of the semester.

We hope some of this information helps you all to advance your careers, advance the profession and contribute to the overall betterment of Missouri. 🇺🇸

# Mark Your Calendar

## 2019 Annual Meeting

October 3-5, 2019

Holiday Inn Executive Center • Columbia, MO

# Announcements

## In memory of Robbie Wayne Neece, PLS #396



“Do unto others as you would have them do unto you.” That was the motto of Robbie Wayne Neece, both in his personal and business life. Mr. Neece passed from this life into eternal rest on February 3, 2019, after an extensive battle with Alzheimer’s disease.

Wayne was born on August 1, 1934, the son of B.A. and Coreene (Deatherage) Neece, in Newton County, Missouri. He attended a one-room school, Willow Springs, near Racine, Missouri. He graduated from Neosho High School with the class of 1952, where he was very active in FFA.

On August 12, 1956, he was united in marriage to Mae Smith. They enjoyed 62 and a half years together, and they were blessed with a son, Rodney Neece, in 1968.

Wayne served in the US army from 1957 to 1959. He was stationed in Germany, where he was chosen to participate as a marksman in the Le Clerc Rifle Games and served as a photographer. Returning home in April of 1959, he took up his former job working as a surveyor for William M. Stewart Engineering Company. Mr. Neece was among the first group of licensed land surveyors in the state of Missouri. He was recently honored by the state for his many years of service. He had much pleasure knowing that he had worked for many developers in the growth of Joplin and the surrounding area. He specialized in boundary surveys and volume surveys for LP gas storage caverns across the U.S.

In 1974, he became the owner of William M. Stewart Engineering and renamed it Stewart and Neece Land Surveying, which is now under the ownership of his son Rodney Neece and his wife Lori Neece.

Wayne had many hobbies. He owned a modified stock car and raced it under the lucky number 7. He restored antique autos, which he loved to have in parades. He was active in the Fairview Missouri Antique Auto club. He was an avid fan of Missouri Southern athletics since 1972, when he joined the booster club “the Lionbackers”. He truly loved the green and gold. He also coached senior league baseball.

He is survived by his wife Mae Neece of the home, his son Rodney Neece and his wife Lori Neece, and two granddaughters, Shelbie and Ragan Neece, all of Joplin. He was preceded in death by his parents, in-laws--Lawrence and Opal Smith, maternal grandparents--Joe and Pearl Deatherage, paternal grandparents--C.C and Eva Neece, of whom he had so many fond memories he shared. 🇺🇸

## Another Surveyor Joins the Missouri House of Representatives.



Missouri PLS #2389 and MSPS member Don Mayhew was elected to the Missouri House of Representatives (121<sup>st</sup> District, parts of Phelps and Pulaski counties) where he joins fellow surveyors and MSPS members Rocky Miller (124<sup>th</sup> District) and Rob Ross (142<sup>nd</sup> District). Representative Don Mayhew, a Republican, is a licensed surveyor and engineer and owns Mayhew Surveying & Engineering of Crocker, Missouri. He has served as the Pulaski County Surveyor for 10 years. Mayhew graduated in 1991 with a bachelor’s of science degree in Civil Engineering from the University of Missouri-Rolla (now Missouri S&T).

Born in Crocker, Mayhew still resides there with his wife, Deanna. They have four adult children and 8 grandchildren. 🇺🇸



# Be a Magazine Cover Model or News Maker!

Highlight your work! Impress your friends! Make your momma proud! Prove to the bankers you are using that commercial loan!



“How” you may ask? By sharing photos, stories and news with Missouri Surveyor! It is really that simple. Just as this edition’s cover features Missouri surveyors you and your work may be featured as well. All content is welcome! For the cover, high quality images in landscape format at an aspect-ratio comparable to 17”x11” work best; stories and articles merely need to be in Microsoft Word.



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