

Missouri Society of Professional Surveyors

2016 Annual Meeting

R_{esolving} B_{oundary} D_{isputes}

October 13-15, 2016

Sheraton Westport Lakeside Chalet
191 Westport Plaza
St. Louis, MO

Missouri Society of Professional Surveyors ~ 722 E. Capitol Avenue, PO Box 1342 ~ Jefferson City, MO 65102
573-635-9446 ~ Fax: 573-635-7823 ~ msps@missourisurveyor.org
www.missourisurveyor.org

THURSDAY, OCTOBER 13, 2016

7:00 am Registration and Continental Breakfast

8:00 - 5:00 pm Hospitality Room

8:00 - 10:00 am **CONCURRENT SESSIONS**

The Missouri USPLSS in Four Hours

Missouri's U.S. Public Land Survey System (USPLSS) is different when compared to the System as applied in all other states. (Its closest cousin is Arkansas.) The GLO instructions of the day, use of standard lines, section protraction, Missouri case law and the Missouri statutes relative to resurveys (in flux since 1814) all combine to make Missouri unique. The object of this course is to cover and summarize Missouri's USPLSS in four hours.

Speaker: Dr. Dick Elgin, LS, PE

Minimum Standards

The Missouri Minimum Standards for Property Boundary Surveys are the rules, promulgated jointly by the Missouri Department of Agriculture Office of State Land Surveyor and the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors, and Landscape Architects, that regulate the practice of land surveying. This session is provided to help land surveyors gain that knowledge to produce a higher standard of land surveyor in Missouri.

Speaker: Darrell Pratte, PLS, Dept. of Agriculture-Land Survey Program

10:00 - 12 noon **CONCURRENT SESSIONS**

Missouri USPLSS in Four Hours continued

(Qualifies for 2 hours of Minimum Standards)
Dick's book "The U.S. Public Land Survey System for Missouri" will be used (Bring yours or purchase one at the Annual Meeting.) This class is suited for students, LSITs, comity applicants for a Missouri PS license, those preparing to become licensed, or PS's or urban surveyors who might be a little vague on the State's System.

Section Breakdowns

(Qualifies for 2 hours of Minimum Standards)
This course will consist of an analysis of the statutes, rules and procedures for the subdivision of the PLSS in Missouri. The role of the field notes and GLO plats will be emphasized in determining the most correct procedures for the subdivision of the sections of the Public Land Survey System in Missouri.

Speaker: Robert 'Bob' Shotts

12:00 - 12:45 pm Lunch

12:30 pm Golf Tournament at The Quarry

12:45 - 2:15 pm **Accuracy Using GPS**

How do you know what you are getting out of your GNSS Receiver and Data Collector? Grid. Ground. Scale factor. Coordinate system? ITRF? ECEF? Local...Global...Site Calibration... Oblique Mercator projection? All of these things effect what spits out of your data collector. In this session we will look at the settings that make a difference, and talk about what to use when. We will also discuss ways to increase your confidence in your results and how to achieve better accuracy.

Speaker: Tom Bryant, PLS and Kelly Harris, PLS, Seiler Instrument

2:15 - 2:30 pm Break

2:30 - 4:00 pm **CONCURRENT SESSIONS**

Understanding the Boundaries of the Professional Surveyor

Missouri Revised Statute 327.272 defines who a surveyor is and what they can do. The focus has typically been on understanding items 1-5. This hour and a half will be spent understanding items 6-13. Most of these tasks are not covered by Missouri Minimum Standards; how the surveyor approaches these tasks can be the difference between a successful survey and the one that will never go away.

Speaker: Mark Wiley, PLS, Heideman & Associates

UAV's - Pro's, Con's and Pricing Availability

With UAV's becoming the next tool that any Land Surveyor will need to have in their toolbox, where do you start when considering purchasing one? This session will give you the basics of UAV's: the different types, models, and accessories. We will cover all the terminology and features that you need to know to get started in the UAV business.

Speaker: Jim Martin, Griner and Schmitz

4:00 - 4:15 pm Break

4:15 - 5:15 pm **CONCURRENT SESSIONS**

Safety and the Professional Land Surveyor UAV Regulation and Insurance

Missouri Revised Statute 327.371 states Surveyors and their crews are not liable for trespass. A survey crew encountered a farmer and informed him they were going to cross his field to search for corners and there was nothing he could do about it showing him a copy of the statute. When they had made it to the middle of the field a bull challenged them and their crossing of his territory. They yelled to the farmer for help at which point he hollered back show them your Statute wise guys. How does the surveyor keep themselves and their staff safe in the ever changing work place the Professional Land Surveyor finds themselves in.

Speaker: Mark Wiley, PLS, Heideman & Associates

After purchasing your first UAV and taking the initial training, what does it take to legally and safely fly your aircraft for commercial use? This session will cover the current federal and state regulations regarding commercial UAV use. Did you know that your current liability insurance probably has a clause exempting the use of aircraft for your business? UAV's are considered aircraft and you will probably need to purchase supplemental insurance. This session will cover the options for UAV liability and commercial insurance.

Speaker: Jim Martin, Griner and Schmitz

5:15 - 7:00 pm Exhibitor Set-Up

FRIDAY, OCTOBER 14, 2016

7:00 am Registration, Continental Breakfast and View Exhibits

8:00 - 5:00 pm Hospitality Room

8:00 - 10:00 am Business Meeting

10:00 - 10:30 am Break to View Exhibits

10:30 - 11:00 am **Keeping the Professional Land Surveyor Professional**

Missouri Revised Statute 324.00 establishes the Division of Professional Registration. Can a State Law make the Professional Land Surveyor respected and honored for the skill and expertise we provide the people of this state or is that respect something we have to earn? Let's look at what it takes to be considered professional in these ever changing times.

Speaker: Mark Wiley, PLS, Heideman & Associates

11:00 - 12 noon **CONCURRENT SESSIONS**

Surveying Liability - Insurance & Coverage Data Collection Field to Finish

- What, Why and How Much

Speaker: Lisa Isom (invited)

True Field to Finish is one of the most powerful tools for a Land Surveyor to use to reduce the office time required to produce a finished product. But it remains one of the most underutilized. This session will cover the complete field to finish process including pre-collection office and field setup, field collection, and office processing. We will use Carlson SurvCE and Carlson Survey to demonstrate the complete solution but will also use data sets from Topcon Magnet and Spectra Precision Survey Pro.

Speaker: Jim Martin, Griner and Schmitz; Aaron Newman, Carlson Software

12:00 - 1:30 pm Awards Luncheon

1:30 - 3:00 pm

CONCURRENT SESSIONS

Contracts and Liability

You will learn how to prepare a contract that contains provisions to "save the day"! What happened to the old principle that "a handshake alone is a good contract"? Do I need a simple written contract for each and every client? Should I develop a series of contract forms to be customized for simple through complex job provisions in a contract that a Surveyor needs to have in order to protect the Surveyor from assignments? What are the minimum liability? How should the Contract be amended to cope with unforeseen circumstances? Although Surveyors are not considered "insurers" of the correctness of their findings, the courts recognize that Surveyors have a duty to perform a survey of real property with reasonable care, skill, diligence and ability and that a failure to satisfy this duty of care may constitute a tort or breach of contract, forming the basis for a claim for damages suffered as a result of an inaccurate survey.

Speaker: Eric Harris

Point Cloud Processing

UAVs (drones) have become the next hottest tool in land surveying greatly reducing the field time needed. Most UAVs are designed to capture imagery and software is then used to create point clouds which are then processed to generate a plat. This session will focus on the processing of those point clouds using Carlson Survey 2016 and Carlson Point Cloud 2016 starting with data sets collected from UAVs. We will cover cleaning up the data, stripping it down to "bare earth", extracting features, and generating contours.

*Speaker: Jim Martin, Griner and Schmitz;
Aaron Newman, Carlson Software*

3:00 - 3:30 pm

Break to View Exhibits

3:30 - 5:30 pm

CONCURRENT SESSIONS

Contracts: Others and Your Own

A Surveyor's liability for a mistake or misrepresentation in a land survey depends on the particular circumstances involved, including the relationship between the Surveyor and the party that has relied upon the survey, the nature of the claim for relief asserted, the application of a statute of limitations, the extent of the survey error and other relevant factors.

Speaker: Eric Harris

Point Cloud Processing continued

*Speaker: Jim Martin, Griner and Schmitz;
Aaron Newman, Carlson Software*

5:30 pm

Reception with Exhibitors

SATURDAY, OCTOBER 15, 2016

7:00 am

Registration and Continental Breakfast with Exhibitors

8:00 - 10:00 am

Revisiting Justice Cooley and Resolving Boundary Disputes – The Judicial Functions of the Land Surveyor

Justice Thomas McIntyre Cooley (1824-1898) has had some of the greatest impacts upon the land surveying profession than any one individual. His thoughtful tome captioned "The Judicial Functions of the Land Surveyor" has laid the foundation for the application of the rules for land surveying across the country. From 1864 to 1885, Cooley was in a unique situation to comment on the formative years of American boundary surveying while serving as the Chief Justice of the Supreme Court of Michigan, a role that permitted him to lay the legal framework for some of the country's most important rules of land surveying. Regrettably, over the passage of time, many of the important rules and principles espoused by Cooley have been neglected by people who push buttons and measure things with satellites. In commenting on the original "record" monuments placed in connection with these early maps, Cooley succinctly described them as "nothing but green sticks driven into the ground." Across the country, courts continue to invoke Cooley's valuable words when ruling on boundary line disputes in spite of fancy surveying equipment and satellite sprayed coordinates. If one wants to understand that laws of surveying, turn the satellites off. Mr. Pallamary will discuss the importance of Justice Cooley as well as the application of proper law in defining and establishing boundary lines.

Speaker: Michael J. Pallamary, PLS, Pallamary & Associates

10:00 - 10:30 am

Break and View Exhibits

10:30 - 12:00 noon	Revisiting Justice Cooley continued
12:00 - 12:45 pm	Lunch
12:45 - 2:45 pm	Quality Control for Land Surveyors Quality control (QC) is a procedure or set of procedures intended to ensure that a manufactured product or performed service adheres to a defined set of quality criteria or meets or exceeds the requirements of the client or customer. Quality Assurance (QA) is sometimes expressed together with QC as a single expression, quality assurance and control (QA/QC). In order to implement an effective QC program, a company must first decide which specific standards the product or service must meet. Then the extent of QC actions must be determined. QA is the planned and systematic activities implemented in a quality system so that quality requirements for a product or service will be fulfilled. QA is the activity of providing evidence needed to establish quality in work, and that activities that require good quality are being performed effectively. All those planned or systematic actions necessary to provide enough confidence that a product or service will satisfy the given requirements for quality. Mr. Pallamary will discuss the application of QA/QC in the practice of land surveying and he will provide some ideas how to enhance the quality of your work product in a manner which will limit liability and increase productivity. <i>Speaker: Michael J. Pallamary, PLS, Pallamary & Associates</i>
2:45 - 3:00 pm	Break
3:00 - 5:00 pm	Quality Control continued
5:00 pm	Adjourn

SPEAKER INFORMATION

Tom Bryant, PLS, is a professional land surveyor with more than 30 years of experience working in surveying. He graduated from Southeast Missouri State University in 1978 with a Bachelor of General Studies degree, studied at the University of Missouri-Rolla under Dr. Richard Elgin, and graduated from the University of Arkansas-Fayetteville, where he studied under Dr. David Knowles, with an Associates degree in Surveying in 1984. Tom is a past President and newsletter editor for the Saint Louis Chapter of MSPS, and has been a presenter at several MSPS, MoDOT and IPLSA workshops. Tom is an Adjunct Instructor of surveying classes at Washington University and Saint Louis University, both in Saint Louis, Missouri.

Eric C. "Ric" Harris of Harris & Harris, P.C. practices with his daughter, Ashlee F. Harris, in Park Hills, Missouri. He received his business degree from Washington University, St. Louis in 1973 and his law degree from the University of Missouri at Columbia in 1976. He has 40 years of litigation experience involving boundary line disputes, easements, quiet title, ejectment, partition of real estate and

foreclosure actions. Mr. Harris has been a licensed Missouri Real Estate Broker since 1973 and is a frequent lecturer for the Missouri Bar and has conducted many workshops for MSPS. Mr. Harris has taught a course at Mineral Area College known as the legal aspects of survey and real estate law. Mr. Harris is a member of the American Bar Association, Missouri Bar Association, Missouri Association of Trial Lawyers, Association of Trial Lawyers of America, Associate Member of MSPS and the National Association of Realtors. He has earned an AV Preeminent Peer Review Rating by Martindale-Hubbell, the highest recognition possible in the legal industry.

Kelly Harris, PLS, is a Professional Land Surveyor in three states, Illinois, Missouri and North Dakota. Kelly previously worked at Woolpert Inc., a national design, geospatial and infrastructure management firm, with offices mainly in the Midwest and eastern part of the United States. Kelly has fifteen years of survey and technical support experience working as a crew chief, survey coordinator, and survey / cad technical

support advisor. He graduated from SIU Carbondale in 2002, with Advanced Technical Studies & Land Surveying Degree.

Lisa Isom

Dr. Dick Elgin, PS, PE, is a practitioner (sealed about 15,000 surveys), researcher (co-developed the "ASTRO" software products), educator (Adjunct Professor at Missouri S&T), and author (several books including the "Sokkia Ephemeris" and his Vietnam memoir "Shoulda Played the Flute, An Army Helicopter Pilot's Year in Vietnam"). Dick is a past-president of MSPS and a former member of the Missouri Licensing Board. Now semi-retired, he works on some special projects for Archer-Elgin Surveying and Engineering, Inc., Rolla, MO. At the Annual Meeting Dick will teach his class from the book he wrote "The U.S. Public Land Survey System for Missouri." His current project is a monogram on riparian boundaries.

Jim Martin has been employed at Griner and Schmitz, Inc. since 1996. He has been

SPEAKER INFORMATION

factory trained on software and hardware from TDS, Ashtech, Javad, Topcon, Sokkia, Carlson, and Geopack with extensive experience in Carlson SurvCe and Topcon Magnet. In his 20 years at Griner and Schmitz, he has received field training from many of the best Land Surveyors in Missouri and Kansas.

Aaron Newman graduated from University of Arkansas with a Bachelor degree as well as a Master's degree with an emphasis in GPS for Precision Farming. I was also a student teacher during my graduate program and taught the Surveying class in the Agricultural Department. During college, I interned with the City of Fayetteville, where I helped with surveys for roads, parking lot and soccer field. After college, I first went to work in sales for a survey supply, equipment and software company where I became more familiar with Carlson Software. Later I started work for Carlson Software in November of 2007 where I still work today. I cover 6 states for Carlson Software in the South Central Region (AR, KS, LA, MO, MS, OK). I have a lovely wife of 12 years and we have two awesome boys. I love being outdoors, boating, camping and enjoy shooting sports.

Michael J. Pallamary, PLS, is licensed in the State of California and he has been surveying since 1971. He testified in his first court case as a surveyor when he was 19 years old. Since then, he has testified in more than 100 cases across the State of California including federal litigation involving the location of the International Border with Mexico and state/federal water boundaries along the State of California. He regularly manages 4 to 5 trials. Mr. Pallamary is a staff writer for The American Surveyor Magazine. He is a frequent lecturer at conferences and universities. He was a close friend to the late Curtis M. Brown and together they lectured and wrote about local land surveying topics and problems. Mr. Pallamary is the author of "The Curt Brown Chronicles." Mr. Pallamary is a faculty member of Lorman Education Services and the National Business Institute where he is certified by the

California Bar to teach continuing education to members of the legal community. He is the author of the recent article in The American Surveyor Magazine entitled "Revisiting Cooley."

Darrell Pratte is the Missouri State Land Surveyor, and Director of the State Land Survey Program (LSP) with the Department of Agriculture. Pratte began his surveying career in 1974 as a chainman at Smith and Company, a multi-discipline engineering and land surveying firm in Poplar Bluff, gaining licensure in 1984. In 1986 Pratte accepted the position of State Park Surveyor with the Department of Natural Resources, transferring to the Land Survey Program in 1990. Over the ensuing 25 years, Pratte has worked in every survey unit within the Land Survey Program and led the cadastral and geodetic survey sections. Pratte accepted the position of Missouri State Land Surveyor in 2008.

Robert "Bob" Shotts grew up in eastern Kansas and has for as long as he can remember loved the outdoors. After graduation from high school at Shawnee Mission North, he attended Kansas State University in Manhattan, Kansas. After two years he transferred to the University of Missouri in Columbia, Missouri, graduating with a BS in Forestry in 1971. Upon graduation he was commissioned as an officer in the US Navy and saw the world, including a tour in Vietnam in 1972. Upon completing his active duty commitment, he returned to the Midwest and once again attended Kansas State University doing graduate work in Landscape Architecture. He worked as a Landscape Architect and Planner for the City of Lee's Summit, Missouri for three years and then moved to Lebanon, Missouri. After working for Barton Engineering in Lebanon, Missouri for 13 years, he started his own company in 1994. In 2000 he, Ralph Riggs and Craig Ruble founded Ruble, Riggs & Shotts. Both companies continue today. Bob is licensed as a Professional Surveyor in Missouri, Kansas, Illinois, Arkansas and Colorado. He is also licensed as a Professional Landscape Architect in

Missouri, Kansas and Arkansas. In addition he became a Certified Federal Surveyor in 2007 and a Certified Floodplain Manager in 2005. He has been a County Surveyor since 1989. Bob has been married to his wife, Delilah for 45 years. They are blessed with two daughters and sons-in-law and three grandchildren. He has served as president of MSPS and is the recipient of the Robert E. Myers Service Award (2005) and MSPS Surveyor of the Year (2001). He currently serves as the chairman of the Landscape Architectural Division of the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors and Professional Landscape Architects.

Mark Wiley is a Second generation Surveyor who currently manages the Surveying Department for Heideman + Associates Inc. Licensed in Missouri and Illinois he has done course work at St. Louis Community College, Mineral Area Community College, and the University of Missouri Rolla in Surveying related courses. He began his carrier prior to 1978 working for his father during the summers and on weekends and has continued in the surveying profession ever since. He opened and operated Advanced Land Surveyors Inc. in Ste. Genevieve from 1994 to 1999 setting legal precedent in prescriptive Road Cases. He has worked in Metro St. Louis and Springfield, as well as Jefferson, Ste Genevieve, St Francois, Franklin, and Washington counties during his 35+ year career. Mark serves as the Pastor of the Son Light Parish in the Mineral area serving three Presbyterian congregations in the towns of Ironton, Fredericktown and Park Hills. He is active in his community serving as the President of the Belews Creek Watershed Partnership. A group of local folks who are working to make a difference in the Watershed by both cleaning and stabilizing the creek.

REGISTRATION FORM

Name _____ RLS# _____
Firm _____
Address _____
City/State/Zip _____
Phone _____ Cell _____
Email _____

MSPS Member Convention Registration Fees

Member Registration - 3 Days	\$330.00	\$ _____
Thursday Only	\$110.00	\$ _____
<i>Thursday AM/PM Only (circle one)</i>	\$55.00	\$ _____
Friday Only	\$110.00	\$ _____
Saturday Only	\$110.00	\$ _____

Non-Member Registration Fees

Non Member Registration - 3 Days	\$550.00	\$ _____
Thursday Only	\$200.00	\$ _____
<i>Thursday AM/PM Only (circle one)</i>	\$100.00	\$ _____
Friday Only	\$150.00	\$ _____
Saturday Only	\$200.00	\$ _____

Optional Activities

Golf (Includes Cart & Two Mulligans)	\$85.00	\$ _____
<i>Golf Sponsor</i>	\$100.00	\$ _____
Sub-Total	\$ _____	
10% Surcharge for Late Registration (After 10/1)	\$ _____	

Grand Total \$ _____

Concurrent Sessions

(Check one per time slot)

Thursday

8:00-10:00 am

- ☐ Missouri USPLSS
☐ Minimum Standards

10:00-12:00 Noon

- ☐ Missouri USPLSS
☐ Sectional Breakdown

2:30-4:00 pm

- ☐ Understanding Boundaries
☐ UAV's-Pro's and Con's

4:15-5:15 pm

- ☐ Safety
☐ UAV Regulations

Friday

11:00-12:00 Noon

- ☐ Surveying Liabilities
☐ Data Collections

1:30-3:00 pm

- ☐ Contracts and Liability
☐ Point Cloud Processing

3:30-5:30 pm

- ☐ Contracts
☐ Point Cloud Processing

Payment Information

☐ Charge my Credit Card ☐ Check Enclosed ☐ Invoice my Organization

Credit Card #: _____ Expiration Date: _____

Mail Registration Form with payment to MSPS, PO Box 1342, Jefferson City, MO 65102.

Fax Registration Form with credit card information to 573-635-7823.

For questions or to register by phone call 573-635-9446.

Registration Deadline is October 9, 2015

Missouri Society of Professional Surveyors
Annual Meeting
722 E. Capitol Avenue, PO Box 1342
Jefferson City, MO 65102

REGISTRATION INFORMATION

Registration fee is \$330 for Members and \$550 for Non-Members. The deadline for registrations is October 1, 2016. After this date, a 10% processing fee will be added to all registration fees. The fee includes instructional materials, refreshment breaks, a luncheon each day(3), a cocktail reception and three continental breakfasts. To register, complete the attached registration form and mail it with your payment to MSPS. For more information on this course, please call

Sandra Boeckman at
573-635-9446.

GOLF TOURNAMENT

The Golf Tournament benefitting the MSPS Scholarship Fund will be held at The Quarry. You may pick a partner or a foursome. If you do not have a partner, one will be provided to you. The format is a four-person scramble; shotgun start. The cost is \$85 per person and includes **18 holes, a cart and two mulligans.**

**The Quarry
#1 Crystal Springs Quarry Drive
Maryland Heights, MO**

LOCATION & LODGING

Sheraton Westport Lakeside Chalet, 191 Westport Plaza, St. Louis, Missouri, is the site for the 2016 Annual Meeting of the MSPS. A special room rate of \$109 for single or double rooms has been extended until **September 12, 2016**. Reservations can be made by calling 877-845-7354. Parking is complimentary for all guests and attendees. Ask for the conference special rate and identify yourself with MSPS when making reservations.

SPOUSE HOSPITALITY ROOM

A hospitality room will be provided on Thursday, Friday and Saturday from 8 am to 5 pm. Please see the registration desk for hospitality room location.

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 at any time, but a \$25 processing fee will be applied to all refunds. **NO REFUNDS WILL BE ALLOWED AFTER October 1, 2016.**

CONTINUING EDUCATION

This course has been approved for 21.5 Professional Development Units (PDUs) by the Missouri Board of Architects, Professional Engineers, Professional Land Surveyors and Professional Landscape Architects.

*The breakdown on days
is as follows:
Thursday - 8.0 PDUs
Friday - 5.5 PDUs
Saturday - 8.0 PDUs*

FOR MORE INFORMATION

Contact Sandra Boeckman,
MSPS Executive Director,
at 573-635-9446.

Please send all registration information to:
MSPS
722 E. Capitol Avenue
PO Box 1342
Jefferson City, MO 65102