



# THE FLORIDA SURVEYOR

May 2014

*59th Annual Conference*

*Sawgrass Marriott  
Resort & Spa*

*Ponte Vedra*



**See pages  
14-30**

## EXECUTIVE DIRECTOR'S MESSAGE



Marilyn Evers  
Executive Director  
director@fsms.org

The single biggest surveying and mapping event in Florida is on the horizon and should be on your calendar already. Now you can actually view all Annual Conference information included in the following pages. Registration is set to open on May 19<sup>th</sup>.

Our 59<sup>th</sup> Annual Conference and Trade Show will be in Ponte Vedra Beach (south Jacksonville) this year, just blocks from the beach. If you enjoy sun, sand and surf, the hotel will shuttle you to their private beach club complimentary when you are ready. If golf is your passion or if you just want to have fun with others on the course, plan to play in our tournament. Inshore fishing is sure to be a good time with our Charter Captain and anglers as well.

New Exhibitors and our regulars have already reserved space for their booths in our Tradeshow which will open on **Thursday afternoon this year with a Reception** and remain open on Friday. Their equipment, software and related items will be on hand for you to view and they will be waiting to provide all of the information you need regarding their products.

Our Annual General Business Session is certainly an informative venue for each and every member. Hear what your leaders report and bring your questions and learn the answers. This is your meeting.

Our Annual Membership Meeting of the Florida Surveying and Mapping Political Action Committee will be held as a breakfast this year and afford you the information you have always wanted to know about our PAC. The Annual Dinner has been moved to Thursday night and will be a special event as always.

Now in the second year of our Continuing Education Biennium, it is time to get serious about credits. Our schedule of twenty various seminars is sure to interest you and provide just the course you are looking for. If not, we want you to call us immediately and provide your ideas.

Banquets, User Group & Council Meetings, Board Meetings, Training Workshops, Dinners – it's all included in our five days of fun while we take care of business. It's the place you need to be August 13<sup>th</sup> – 17<sup>th</sup>.

Talking about online registration brings me to announce that our redesigned website will debut on the 19<sup>th</sup>. We are excited to bring you a smart looking, current site for your association needs. We will remind you via our Email Bulletin when it is launched.

Thank you, thank you members. Your dedication to and support of the Society and the profession is fantastic! Our membership this year continues to grow and surpass last year – thank you for doing your part.

### Administrative Office

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Join us in Ponte  
Vedra Beach for  
our 59th  
Annual  
Conference



There is  
something here  
for everyone



Golf  
or  
Fish



Fellowship with  
old friends  
and make new  
ones

Hope to  
see you  
here



Earn up to  
18 CECs



Rest  
and  
Relax



Check out the  
Tradeshaw, now  
extended to  
2 days





## Conference Chairman's Invitation

Dear Surveyors:

It is my pleasure to personally invite you all to our 59<sup>th</sup> Annual Conference August 13<sup>th</sup> through August 17<sup>th</sup> at Sawgrass Marriott Resort & Spa at Ponte Vedra Beach. It is a beautiful resort with world class golf and just blocks from the beach. Your family will be thrilled to make this their summer vacation destination while you interact with fellow professionals and earn CECs.

Our Annual Welcome Barbecue and Chapter's Cook-off will start our Conference off just right and the Saturday Installation Banquet will culminate with awards and door prizes. In between our Tradeshow, seminars, usergroups and board meetings will take place.

Our Annual General Business Session and Membership Meeting will be held on Friday. This is the venue to ask questions, raise concerns and state your views, so be sure you are in attendance.

We have five days of action prepared for you—all tailored to your interests and needs and we look forward to seeing you at the largest surveying and mapping Tradeshow and Annual Conference in the southeast.

Sincerely,

Dale Bradshaw, PSM  
Vice President & Conference Chair



## Tentative Conference Schedule

### Wednesday, August 13<sup>th</sup>

7:30 am – 5:00 pm Conference Registration Desk  
 8:00 am – 3:00 pm **WEDNESDAY SEMINARS (Separate registration-NOT included in conference package)**  
     7:30 am – 8:00 am Registration  
     8:00 am – 3:00 pm Seminar  
     11:00 am – 12:30 pm Lunch (*on your own*)

8:00 am – 4:00 pm Spouse Hospitality Suite  
 9:00 am – 12:00 pm FDOT Meeting  
 2:30 pm – 4:00 pm Surveying and Mapping Council  
 3:00 pm – 4:00 pm GIS Users Group Meeting  
 4:00 pm – 5:00 pm Surveyors in Government Meeting  
 5:30 pm – 7:00 pm Welcome Barbecue (*ticket required*)  
 7:00 pm Corn Hole Tournament

### Thursday, August 14<sup>th</sup>

7:00 am – 11:00 am Fishing Tournament (*registration required*)  
 7:00 am – 12:00 pm Golf Tournament (*registration required*)  
 7:30 am – 5:00 pm Conference Registration Desk  
 8:00 am – 3:00 pm **THURSDAY SEMINARS (Separate registration-NOT included in conference package)**  
     7:30 am – 8:00 am Registration  
     8:00 am – 3:00 pm Seminar  
     11:00 am – 12:30 pm Lunch (*on your own*)

8:00 am – 4:00 pm Spouse Hospitality Suite  
 1:00 pm – 2:30 pm GPS Users Group Meeting  
 2:00 pm – 2:45 pm Board of Directors' Meeting  
 3:00 pm – 6:00 pm Exhibit Hall Grand Opening & Exhibitors' Reception (*ticket required*)  
 6:30 pm – 9:00 pm FSM PAC Dinner

### Friday, August 15<sup>th</sup>

7:00 am – 7:45 am Breakfast with FSM PAC Board of Directors – Open to all attendees  
 8:00 am – 12:00 pm General Business Session  
 8:00 am – 5:00 pm ASPRS Board Meeting  
 8:00 am – 4:00 pm Spouse Hospitality Suite  
 9:00 am – 5:00 pm Conference Registration Desk  
 10:00 am – 4:00 pm Exhibit Hall Open  
 10:30 am – 12:00 pm National Association of County Surveyors Board Meeting  
 12:00 pm – 2:00 pm Chapter Presidents' Lunch & Workshop  
 1:30 pm – 5:00 pm National Association of County Surveyors Membership Meeting  
 2:00 pm – 3:00 pm Exhibitors' Ice Cream Social  
 6:00 pm – Past Presidents' Dinner (*ticket required*)  
 8:30 pm – 12:00 am Game Night

### Saturday, August 16<sup>th</sup>

7:30 am – 12:00 pm Conference Registration Desk  
 8:00 am – 4:00 pm Spouse Hospitality Suite  
 8:00 am – 5:00 pm **Certified Survey Technician (CST) Exams**  
 8:00 am – 8:30 am Registration  
 8:30 am CST Exams Begin  
 7:30 am – 8:00 am Saturday Seminars Registration  
 8:00 am – 9:40 am **Saturday Seminars Tier I (registration required)**  
 Track I **NOVA Fixed Wing UAS Operations Training** - 2 general CECs  
 Track II **Historical Cartography of Florida** - 2 general CECs  
 Track III **Proper Network RTK Surveying** - 2 general CECs  
 Track IV **Gopher Tortoise** - 2 general CECs

10:00 am – 11:40 am **Saturday Seminars Tier II (registration required)**  
 Track I **Using the Florida Permanent Reference Network for Aerial LiDAR Ground Check Point Surveys** - 2 general CECs  
 Track II **Mason and Dixon and Their Famous Line** - 2 general CECs  
 Track III **OPUS Use, Tips, TEQC and Problem Solving** - 2 general CECs  
 Track IV **Geomatics—A Different Approach** - 2 general CECs

11:40 am – 1:00 pm Lunch (*on your own*)  
 1:00 pm – 2:40 pm **Saturday Seminars Tier III (registration required)**  
 Track I **Revolution of Close-Range Photogrammetry** - 2 general CECs  
 Track II **Enhancements to the National Spatial Reference System** - 2 general CECs  
 Track III **Data Collection Procedures for Field Crews** - 2 general CECs  
 Track IV **Digital Signatures for Surveyors** - 2 general CECs

6:00 pm – 6:30 pm Reception (*Drink tickets NOT included in packet*)  
 6:30 pm Annual Installation Banquet (*ticket required*)

### Sunday, August 17<sup>th</sup>

8:30 am Board of Directors Meeting and Breakfast

All of our beautiful rooms and suites feature

- Flat-screen TVs
- Cable TV with Premium Channels
- Dual-line Phones With Voicemail
- Housekeeping Daily
- Iron & Ironing Board
- Rollaway Beds Available
- Complimentary Newspaper (M-F)
- Bathrobes
- Hairdryer
- Refrigerator

*Sawgrass Marriott  
Resort & Spa*



1000 PGA TOUR Boulevard  
Ponte Vedra Beach, Florida  
32082 Phone: 904.285.7777  
[www.sawgrassmarriott.com](http://www.sawgrassmarriott.com)

Our Villas delight with

- TVs in Living Room & Bedroom
- Spacious One or Two Bedroom Layout
- Large Living Room
- Patios With Sliding Doors & Water Views
- Wet bar with microwave, small refrigerator and coffee maker



Indulge your senses

- Recreation Activities
- Flexible Meeting & Event Space
- Family Activities & Kids Klub
- 18-Hole Miniature Golf Course
- Restaurants & Lounges
- Four Outdoor Pools & 3 Whirlpools
- Private Beach & Cabana Beach Club
- Championship Golf
- Complimentary Shuttle To Beach & Golf Courses
- Fitness Center
- Spa at Sawgrass
- Live Entertainment
- Airport Transportation

Escape to an oasis of wellness and serenity at the Sawgrass Spa. The 25,000-square-foot luxury spa is a sanctuary where your body and spirit rejuvenates. Experience a sublime spa getaway on the Florida coast. You deserve it.

Get refreshed and relaxed at the Sawgrass Spa with massage therapy, hydrotherapy, reflexology, body treatments wraps, and skincare. Enjoy the healing art of touch enhanced with organic botanical products and oils. The Spa features 19 private treatment rooms, including hydrotherapy and couples' massage rooms. Unwind in the men's and women's locker rooms with steams, saunas, whirlpools, and relaxation lounges. Sit back at the nail studio, with deluxe manicure and pedicure stations and browse the spa's retail store to purchase the gift of relaxation for yourself or someone that you love.

Take a refreshing swim in the outdoor heated pool, soak in the bubbly whirlpool and find your balance in the relaxation area. Stop at Soothies at the Spa for energizing drinks and spa cuisine as you relax and refuel.



**Hours of Operation:**  
Daily: 8:00 am - 8:00 pm



### Cabana Beach Club on Ponte Vedra Beach

Escape to the resort's private Cabana Beach Club on beautiful sands of Ponte Vedra Beach and the Atlantic Ocean. Hop on the resort's complimentary shuttle and explore 26 miles of private beachfront where you can lounge on soft white sands, play in the ocean waves, and enjoy oceanfront dining. Complimentary for our guests, the Cabana Beach Club features a heated outdoor pool, poolside grill, a waterfront restaurant, a playground, and fun family activities. Pick up volleyballs, footballs or frisbees and play on the warm sands, or rent chairs, chaise lounges and umbrellas and kick back in paradise.

#### Experience the Cabana Beach Club

- Volleyballs, Footballs and Frisbees
- Individual Showers & Changing Facilities
- Complimentary Shuttle Service From Resort
- Jr. Olympic Size Heated Swimming Pool
- Poolside Food & Beverage Service
- Dining at 619 Ocean View
- Kids Pool
- Aqua Aerobics
- Arts & Crafts
- Swimming Lessons
- Kids Playground
- Summer & Surf Camps
- Private Beach Access
- Beach Cruiser Bike Rentals
- Lifeguards At Pool & Beach
- Beach Rentals: Ocean Kayaks, Sail Boats (Hobie Wave), Surfboards, Paddle Boards, Boogie Boards, Chairs, Chaise Lounges, Umbrellas, and Sets



Enjoy casual waterfront dining with breathtaking views of the Atlantic Ocean at Sea Porch Bar & Grill. Or escape to Oceanview Restaurant, serving fresh seafood, grilled steaks and weekly specials.





**Wednesday  
August 13<sup>th</sup>**

**8:00 a.m. – 3:00 p.m.**

### **A Practical Approach to 5J-17 Minimum Technical Standards for Surveyors with a Panel Discussion**

Course #8429 ~ 6 MTS/L&R CEC

Pablo Ferrari PSM, Ray Niles PSM and Gail Oliver PSM

This seminar will cover the timeline and evolution of MTS, how rules are made by the Board of Professional Surveyors and Mappers, presentation on the actual rules, and a panel discussion on the rules and their practical application. The panel members include Pablo Ferrari (FSMS Past President, Secretary, District 2 Director and an MTS proponent) and Ray Niles (FSMS Past President, FDACS BPSM Liaison, and MTS opponent) moderated by Gail Oliver (former BPSM Member, longtime FSMS MTS Instructor, and co-author of the MTS Revisions to include photogrammetrists). The purpose of the panel discussion is to educate the attendees from more than one viewpoint, stimulate the thought process on MTS and its practical application, and motivate thinking on the future of MTS.



**Pablo Ferrari, PSM** began his surveying career in 1985 as a Tail Chainman. He has lived in the Jacksonville area for thirty-six years and is the President/Managing Partner for Geomatics Corporation, located in St. Augustine. Mr. Ferrari graduated in 1991 from the University of Florida Surveying and Mapping Program with a Bachelor of Science degree. He holds professional registrations and certifications in Florida, Alabama, Georgia, Mississippi, North Carolina, South Carolina and the U.S. Virgin Islands. Mr. Ferrari is a Past President of FSMS, he has also previously served as FSMS Secretary and District 2 Director. He has been an active member of the Florida Crown Chapter as an Associate and Full member as well as serving as Chapter President. While at the University of Florida Mr. Ferrari was a member of the Student Geomatics Association and served as the Vice President. He is a member of NSPS. Mr. Ferrari is currently serving as a member on the Duval County Planning Commission.



**Ray Niles, PSM** is licensed to practice surveying and mapping in Florida, Georgia, North Carolina, South Carolina, Alabama, Mississippi, and Louisiana. He earned his Bachelor of Land Surveying Degree from the University of Florida. Mr. Niles is the President of Degrove Surveyors, Inc. He has over thirty years of surveying experience. He is a Fellow and Life Member of FSMS. Mr. Niles is also an FSMS Past President, a recipient of the prestigious "H.O. Peters Surveyor of the Year" award, and a Past President of the Florida Crown Chapter of FSMS. He currently serves as the FSMS Liaison to the BPSM. Mr. Niles is a member of the University of Florida Geomatics Advisory Committee, and a member of the Hydrographic Society of America, NSPS and the Northeast Florida Builders Association.



**Gail Oliver, PSM** is a Professional Surveyor and Mapper licensed to practice in Florida; she has over thirty years of experience. In March 1979, after graduating from the First Coast Technical Institute Mapping and Cartography Program, she began her career in Jacksonville, where she had the opportunity to participate in some high profile projects with groundbreaking technology and approaches. Mrs. Oliver has been serving as the County Surveyor for St. Johns County for the last twenty years and oversees the GIS and Survey Divisions. She is a former member of the Florida BPSM, an emeritus member of the National Council of Examiners for Engineering and Surveying (NCEES), a Past President of the National Association of County Surveyors, current Southeastern States Director of the National Association of County Surveyors, and a member of NSPS and FSMS. Mrs. Oliver is also a Certified Floodplain Manager (CFM) and is a member of the Association of State Floodplain Managers.

**8:00 a.m. – 3:00 p.m.**

### **The Origins and History of Surveying Methods and Instrumentation As Applied to Early American Surveying**

Course #TBD ~ 6 General CEC

Robert Heggan, Jr., PSM

This seminar will familiarize attendees with the early origins of land surveying and how they set the foundation for the development of and use of surveying instrumentation, computation methods and field procedures. This seminar will also demonstrate the limitations of the instruments of the day and how the common practices help to create many of the modern enigmas that we as surveyors are faced with today.



**Robert Heggan, Jr., PSM** is licensed to practice in Florida, New Jersey, Pennsylvania and Maryland. Mr. Heggan has over thirty years of experience beginning with Taylor Wiseman & Taylor, a firm where he spent twenty-two years of his career, advancing from chief of party to survey department manager and partner. He moved on to expand his surveying services in the Philadelphia tri-state area for two other firms before moving to Florida in 2008. His experience is deeply rooted in boundary retracement surveys and the methods employed in the execution of the original surveys as well as serving in an expert capacity to provide testimony as to early surveying methods. Mr. Heggan also served as Deputy Surveyor General for the Province of West New Jersey, one of the many land holding organizations that existed prior to our nation's independence. In this role, he would assist the Survey General in determining the existence of remaining claims of the province in order to clear title to unclaimed lands. In addition, Mr. Heggan served as President of the New Jersey Society of Professional Land Surveyors in 1996, as well as chapter President and State Director. Mr. Heggan is currently employed with the City of Sarasota and serves as a consultant for Adams, Rehmann & Heggan, and Associates, a New Jersey consulting firm.

**Thursday  
August 14<sup>th</sup>**

**8:00 a.m. – 3:00 p.m.**

### **Florida Laws**

Course #6968 ~ 6 MTS/L&R CEC  
Art Mastronicola, Jr., PSM

This seminar will focus on Florida Laws affecting professional surveyors and mappers. The practice of professional surveying and mapping is subject to many laws and rules. This course will cover Chapter 472 LAND SURVEYING AND MAPPING, Chapter 177 LAND BOUNDARIES, Chapter 161 BEACH AND SHORE PRESERVATION, Chapter 718 CONDOMINIUMS, and Chapter 95 LIMITATIONS OF ACTIONS; ADVERSE POSSESSION. A review of each law will be done with specific emphasis on the practical application of these laws. Course objectives include: have a basic understanding of how laws are made and changed, understand the purpose of each law affecting the practice of surveying and mapping and review the existing Law along with revisions so that the licensee has a thorough understanding of the laws and their applicability.



*Art Mastronicola Jr., PSM has over thirty-five years experience in land surveying. In addition to his responsibilities associated with field crew and office production supervision and operation, Mr. Mastronicola is experienced in project management and review for development clients, civil engineers, roadway projects, municipalities and private clients. He is currently registered in Florida, Georgia, Alabama, New York and Connecticut. Mr. Mastronicola is a Past State President of FSMS as well as a former board member and chair for the FDACS BPSM. These positions have allowed him to see many of the items that create issues and concerns for surveyors.*

**8:00 a.m. – 3:00 p.m.**

### **Spanish Land Grants and Marsh Boundaries**

Course #TBD ~ 6 General CEC  
Joe Knetsch, PhD and Stephen Sharpe, PSM

This seminar is designed to make surveyors (and others) aware of the many pitfalls and problems presented by Spanish Land Grants when they abut marshlands, like those which abound in Northeast Florida and elsewhere. Because of the rapid development of this section of Florida, many of the earlier boundaries have either been obliterated or incorrectly surveyed over the years. Much of this is complicated by the passage of the Swamp and Overflowed Lands Act of September 28, 1850 which gave title to these lands to the State of Florida. The major problem with this act was the imprecise definition of these lands from the General Land Office and the Department of Interior. Two subsequent acts by Congress attempted to clarify the intent but failed to give more accurate information to resolve the major problem, where was the boundary? The canalization of many of Florida's waterways complicated the boundary problem even more by introducing tidal flushing in areas not hitherto affected by the tides. Since much of the area under consideration was surveyed prior to the passage of the S & O acts, none of the earlier GLO surveys show exact boundaries along the rivers and streams which now feel the impact of development. Because few of the earlier Spanish Land Grants were actually surveyed upon the ground, the boundary issues were compounded by their resurveys under court orders.



*Dr. Joe Knetsch works for the Florida Department of Environmental Protection, Division of State Lands, Bureau of Survey and Mapping. He received a Doctor of Philosophy degree in History from Florida State University in 1990. He has worked as the historian for the Governor and Cabinet, sitting on the Board of Trustees of the Internal Improvement Trust Fund, since 1987. Dr. Knetsch has published over 180 articles and reviews on Florida history. He has given nearly 150 papers on the topic of Florida history, surveying and genealogy.*



*Stephen Sharpe, PSM is a Florida licensed Professional Surveyor. He has more than thirty-five years of surveying and mapping experience. Mr. Sharpe attended Florida Technological University and the University of Florida. He was an Artillery Surveyor in the U.S. Army and has been both an Acquisition Surveyor and Land Management Surveyor for the FDEP Division of State Lands, Bureau of Survey and Mapping. Mr. Sharpe has been the Project Manager for hundreds of surveying and mapping projects throughout Florida, primarily involving conservation lands for acquisition and management under the Preservation 2000 and Florida Forever initiatives. He is a consultant and expert witness for private and public sector clients and is the survey and land title consultant for the IT firm designing the technology refresh of the Board of Trustees Land Document System (BTLDS).*

Saturday  
August 16<sup>th</sup>

8:00 a.m. – 9:40 a.m.

### NOVA Fixed Wing UAS Operations Training

Course #TBD ~ 2 General CEC  
Brian Murphy, GISP

This seminar will cover all of the necessary items of the Nova Block III training curriculum, which includes: FAA Regulations of Unmanned Aircraft Systems, Safe Operations, introduction to Flight Planning, a Brief Introduction to Photogrammetry, and Post Processing of Data.



**Brian Murphy, GISP** is the Vice President of Business Development for Altavian, the manufacturer of the Nova family of small Unmanned Aircraft Systems (UASs) designed for surveying and mapping. He is a graduate of the University of Florida's Environmental Management in Agriculture Interdisciplinary Studies program and obtained his Masters in Urban and Regional Planning from UF specializing in Planning Information Analysis Systems. Mr. Murphy is a Past President of the Florida Region of the American Society for Photogrammetry and Remote Sensing (ASPRS) and is also an ASPRS Certified Photogrammetrist and a GIS Professional (GISP).

### Historical Cartography of Florida

Course #TBD ~ 2 General CEC  
Joe Knetsch, PhD

This seminar will begin with a general overview of the early Spanish and English mapping of the territory. The main bulk of this course will concentrate on the 19th Century, when the General Land Office and the United States Army did the majority of the mapping of the Territory and State. The development of the railroads in the period after 1881 will also show the changes in mapping techniques and information. Later development generated mapping will also be discussed and the institution of platting laws to carry out the intent of these works will be highlighted.



**Dr. Joe Knetsch** works for the Florida Department of Environmental Protection, Division of State Lands, Bureau of Survey and Mapping. He received a Doctor of Philosophy degree in History from Florida State University in 1990. He has worked as the historian for the Governor and Cabinet, sitting on the Board of Trustees of the Internal Improvement Trust Fund, since 1987. Dr. Knetsch has published over 180 articles and reviews on Florida history. He has given nearly 150 papers on the topic of Florida history, surveying and genealogy.

### Proper Network RTK Surveying

Course #TBD ~ 2 General CEC  
Lance André

This seminar presents commonly accepted best practices on how to obtain quality horizontal and vertical GPS & GNSS measurements from an RTK Network. All of the procedural items presented are under the control of the GPS operator. A brief behind the scenes view of Network RTK Software / Techniques are presented along with common mistakes made by Network RTK providers. Topics covered in more detail include procedures for remediating the effects of commonly overlooked Network RTK errors such as Multipath, high DOPS, Localizations, Latency, C/N, Masks, Geoids, Equipment, Datums, PPM, Ground and Space Weather. This seminar is ideally suited for anyone who works with GPS receivers and is concerned about controlling the quality of data produced by their utilization.



**Lance André** brings twenty-five plus years of GNSS experience to Geomatics Consulting. He has served as a Product Manager for the SMI Field Products where he was responsible for the design and development of a complete turnkey field survey solution incorporating OEM components from many manufactures. Mr. André has also designed and managed the creation/operation of numerous RTK base stations from small cities & counties to the large geographical designs for the HPRTK (Nebraska), DigiFarm (Iowa, Illinois and North Dakota), eGPS (Florida), Navajo DOT, and FreedomRTK (Kansas).

### Gopher Tortoise

Course #TBD ~ 2 General CEC  
Arthur D. Wade, III PWS

The gopher tortoise is classified by the Florida Fish and Wildlife Conservation Commission (FWC) as a threatened species under Chapter 68A-27.004 F.A.C. Because of this classification, any activity that will impact tortoises or their burrows must be permitted through the FWC. This seminar will provide attendees with an overview on tortoise burrow surveys, the permitting process, and capture & relocation activities.



**Arthur D. Wade, III** is a Wetlands Scientist. He has worked at Chastain-Skillman, Inc. for ten years and has eighteen years in the industry. Mr. Wade has a B.S. in Biology from Florida Southern College. He has performed wetland and surface water delineations, permitting and mitigation design for more than 100 sites within the South Florida, Southwest Florida, St. Johns River and Northwest Florida Water Management Districts. His areas of expertise include wetland delineation, mitigation design, monitoring and permitting; gopher tortoise surveys, permitting, and relocation; seasonal high water table (SHWT) determination; and GIS Applications.

Saturday  
August 16<sup>th</sup>

10:00 a.m. – 11:40 a.m.

### Using the Florida Permanent Reference Network for Aerial LiDAR Ground Check Point Surveys

Course #TBD ~ 2 General CEC  
Al Karlin, PhD, GISP and Jim Owens, PSM

To introduce the professional to the theory and methodology for surveying Ground Check Points (GCPs) in support of Quality Control Methods (QCM) for aerial LiDAR data collections.



**Al Karlin, PhD, GISP** is a Senior GIS Scientist in the Mapping and GIS Section of the Southwest Florida Water Management District. His responsibilities include: development of the ArcHydro/Geographic Watershed Information System, LiDAR data management, Watershed-related Project Management, developing Spatial Statistics, and software training & education. Dr. Karlin is a member of the American Society for Photogrammetry and Remote Sensing (ASPRS). He has taught presentations for ESRI and FSMS. Dr. Karlin has written articles in several publications, his most recent in ASPRS Airborne Topographic Lidar Manual.



**Jim Owens, PSM** is the Land Survey Supervisor for the Southwest Florida Water Management District (SWFWMD). He manages the SWFWMD land survey effort and is responsible for all aspects of professional surveying including geodetic, boundary, hydrographic and topographic surveys. Mr. Owens manages multiple surveying & mapping projects throughout the sixteen county SWFWMD areas in support of land surveying & GIS/mapping activities including the NAVD 1988 Vertical Datum Migration of all SWFWMD hydrologic data collection sites. He has been employed with SWFWMD since 2006. His previous experience includes six plus years as Director of Mapping & Geographic Information Systems with Polk County Property Appraisers office & seventeen years in the private sector.

### Mason and Dixon and Their Famous Line

Course #TBD ~ 2 General CEC  
Mike Garcia, PSM

This seminar will examine Charles Mason and Jeremiah Dixon and the most famous surveyors' line ever drawn. It will examine the need for undertaking such a large and complex project and explore the different surveying techniques used and the men who performed the survey. It will include looking at the starting point and many of the people and stories that are forever tied to this piece of American History.



**Mike Garcia, PSM** is a licensed Florida Professional Surveyor and Mapper. A native of Florida with over thirty years of experience, his diverse background includes Boundary and Topographic Surveys, Right of Way Mapping, Control Networks and GIS data applications. Mr. Garcia has been employed by Seminole County Government for twenty years and is currently a Program Manager with the County's Engineering Division, lending his expertise to a variety of projects. He is a member of the Florida Surveying and Mapping Society and the Central Florida GIS Users Group as well as a Past President of the "Great" Central Florida Chapter.

### OPUS Use, Tips, TEQC and Problem Solving

Course #TBD ~ 2 General CEC  
David Newcomer, PSM, PE

This seminar will introduce the individual in the use of OPUS and OPUS Sharing Database and discuss ways to improve the solution. For several years the National Geodetic Survey has provided users a method of computing survey grade single point GPS positions through the use of the Online Positioning User Service or OPUS. OPUS Sharing Database is a database for publishing and storing the positions created when using OPUS.



**David Newcomer, PSM, PE** is a graduate of the University of Michigan with a degree in Civil Engineering and a concentration in Geodesy. He is a licensed Professional Engineer and licensed Professional Surveyor in Pennsylvania. Mr. Newcomer has taught numerous seminars and courses on the global positioning system (GPS) including static GPS, real time kinematic GPS and how the GPS system works as well as courses on the use and adjustment of surveying instruments. He has published GPS as a Fast Surveying Tool, (American Society of Civil Engineers: Journal of Surveying Engineering, 1990). He is currently the National Geodetic Survey Advisor for Florida and the Caribbean.

### Geomatics – A Different Approach

Course #TBD ~ 2 General CEC  
Chad Boggs, PSM

In this seminar the following questions will be discussed: What is Geomatics? What are the differences between a geomatics operation vs. a survey operation? What tools are available to a geomatics professional today? How are these tools utilized? Several projects will be presented where a geomatics approach was utilized. Specific technology and staff utilized for each phase of the project will be discussed.



**Chad Boggs, PSM** is the Program Manager for Atkins Geomatics. He is licensed in Florida and Georgia. He received a B.S. in Surveying Engineering Technology from Alfred Sate College in 1998. Mr. Boggs has twenty-three years of surveying experience including transportation, civil site, utility, architecture and GIS. He is focused on the integration of modern survey technologies and techniques.

Saturday  
August 16<sup>th</sup>

1:00 p.m. – 2:40 p.m.

### Revolution of Close-Range Photogrammetry

Course #TBD ~ 2 General CEC

Jad Jarroush, PhD

Driven by the rapid evolution of digital photography and personal computing in recent years, close-range photogrammetry with regular cameras rapidly changes the way surveyors work worldwide. This seminar will review the principles of photogrammetry, introduce some real-life case studies of surveying works, and provide practical hands-on best practices for drawing plans and making measurements directly on images of regular cameras.



**Jad Jarroush, PhD** is the Founder and CTO of Datumate. He is responsible for the development of the company's scientific and technological aspects. Prior to founding Datumate, Dr. Jarroush co-founded and managed GeoPoint, a specialist in GIS, cadastre, mapping and geo-information works. He is an active professional consultant to the Survey of Israel, Israel's government agency for mapping, geodesy, cadastre and geoinformatics and led some of the pioneering works to convert Israel's cadastral data into a digital system. Dr. Jarroush earned his PhD in mapping and geo-information engineering from the Technion – Israel's Institute of Technology, specializing in the optimization of geodetic networks and GPS algorithms.

### Enhancements to the National Spatial Reference System

Course #TBD ~ 2 General CEC

Ronnie Taylor

This seminar will discuss a number of on-going activities at the National Geodetic Survey (NGS) designed to enhance the availability, quality, and integrity of the National Spatial Reference System (NSRS).



**Ronnie Taylor** is the retired Deputy Director, National Geodetic Survey (2009-2012), NOS Advisor to the State of Florida; a position he held from 1987 until 2007. He is the President-Elect of the American Association for Geodetic Surveying (AAGS) 2014. A native of Williamsburg, Kentucky, Mr. Taylor attended Cumberland College, the U.S. Army Advanced Geodetic School, Fort Belvoir, Virginia, and the Oregon Institute of Technology. Some of his accomplishments include Charter Member and Past Chair of the Florida GPS Users Group; AAGS President 2000 and 2009, AAGS Director 1996-1999 and Chair, Florida Federal Interagency Coordinating Committee. Mr. Taylor has earned numerous awards including FSMS Associate Member of the Year 1988 and 1991, FSMS Professional Development Award 1990, Interagency Performance Evaluation Task Force (IPET) Award, U.S. Army Corps of Engineers; and Commanders Award for Public Service, Department of the Army.

### Data Collection Procedures for Field Crews

Course #7232 ~ 2 General CEC

Pat Meeds, PSM

This seminar relates to the "Practice of surveying and mapping" as defined in Chapter 472, F.S. in that it instructs and informs the attendee regarding the use of data collection techniques in performing field surveys. This course will focus on maximizing the use of data collectors and associated software, to both collect and verify the collected survey data. The instructor will present the techniques and procedures he's incorporated into his own practice, gained from his own and other's experience.



**Pat Meeds, PSM** is a licensed Florida Professional Surveyor and Mapper and is a native of South Florida, with over thirty five years' experience in the surveying and mapping profession. Mr. Meeds is the Vice President - Director of Surveys, Florida Operations for Bowman Consulting Group, LTD. He has served as President of the Palm Beach Chapter of FSMS and also as FSMS District 3 Director. Mr. Meeds was an adjunct faculty instructor for the A.S. Surveying Degree program at Palm Beach State College. His diverse background includes Horizontal and Vertical Control networks, A.L.T.A. Boundary Surveys, P.L.S.S. Retracement Surveys, Topographic Surveys, Digital Terrain Models, Platting, Right of way mapping, Terrestrial Lidar, and GIS asset inventory applications.

### Digital Signatures for Surveyors

Course #TBD ~ 2 General CEC

Dolly Carwile, PSM

This seminar will educate attendees on the ins and outs of using a digital signature. What is a digital signature? How do you create one? How can you use it securely? These are just some of the questions that will be answered during this seminar. If you've ever wondered about using a digital signature, this course is for you.



**Dolly Carwile, PSM** is a licensed Florida Professional Surveyor and Mapper with ten years of experience and currently works for the City of Orlando performing subdivision plat reviews and developing Civil 3D standards. She has a Bachelor's Degree in Industrial Operations and several associate degrees all of which she has applied to various aspects of surveying. Mrs. Carwile has guest lectured at Seminole State College surveying classes and for the Central Florida Chapter CST Study Group. She beta tested Civil 3D and has extensive training in using Civil 3D for surveying and streamlining processes. Mrs. Carwile is currently the President of the Central Florida Chapter, where she has been an active member since 2004, including managing the Chapter Website and Newsletter.



**Online Registration will be available Monday, May 19th.**

## CONFERENCE REGISTRATION FORM

August 13<sup>th</sup> – 17<sup>th</sup>

Sawgrass Marriott in Ponte Vedra Beach  
1000 PGA TOUR Boulevard, Ponte Vedra Beach, FL 32082

<http://www.sawgrassmarriott.com/>

Name \_\_\_\_\_ PSM # \_\_\_\_\_

### Packet 1 – FULL REGISTRATION (with meals)

Member	\$350
Non-Member	\$450
Non-licensed in ANY State	\$305

(Includes one Wednesday Barbecue ticket, one Thursday Exhibitors' Reception ticket, one Saturday Banquet ticket, six (6) Saturday Seminar CEC)

### Packet 2 – PARTIAL REGISTRATION (no meals)

Member	\$250
Non-Member	\$375
Non-licensed in ANY State	\$225

(Includes one (1) Thursday Exhibitors' Reception ticket and six (6) Saturday Seminar CEC)

### Packet 3 – SATURDAY ONLY

Member	\$125
Non-Member	\$200
Non-licensed in ANY State	\$ 80

(Includes six (6) Saturday Seminar CEC and course material for all 12 courses)

### Packet 4 – MEMBER'S CHOICE (FSMS MEMBERS ONLY)

#### CREATE YOUR OWN PACKET

Select Events (A – E) you will be attending and add \$100 Required Basic Break Fee. If attending Saturday seminars, add \$125 for 6 CEC.

### Saturday Seminars

Please indicate below each seminar you will be attending – check ONLY one (✓) per Tier.

TIER I 8:00 a.m. – 9:40 a.m.	TIER II 10:00 a.m. – 11:40 a.m.	TIER III 1:00 p.m. – 2:40 p.m.
<b>NOVA Fixed Wing UAS Operations Training</b> Course #TBD ~ 2 General CECs Brian Murphy, GISP _____	<b>Using the Florida Permanent Reference Network for Aerial LiDAR Ground Check Point Surveys</b> Course #TBD ~ 2 General CECs Al Karlin, PhD, GISP and Jim Owens, PSM _____	<b>Revolution of Close-Range Photogrammetry</b> Course #TBD ~ 2 General CECs Jad Jarroush, PhD _____
<b>Historical Cartography of Florida</b> Course #TBD ~ 2 General CECs Joe Knetsch, PhD _____	<b>Mason and Dixon and Their Famous Line</b> Course #TBD ~ 2 General CECs Mike Garcia, PSM _____	<b>Enhancements to the National Spatial Reference System</b> Course #TBD ~ 2 General CECs Ronnie Taylor _____
<b>Proper Network RTK Surveying</b> Course #TBD ~ 2 General CECs Lance André _____	<b>OPUS Use, Tips, TEQC and Problem Solving</b> Course #TBD ~ 2 General CECs David Newcomer, PSM, PE _____	<b>Data Collection Procedures for Field Crews</b> Course #7232 ~ 2 General CECs Pat Meeds, PSM _____
<b>Gopher Tortoise</b> Course #TBD ~ 2 General CECs Arthur D. Wade, III PWS _____	<b>Geomatics – A Different Approach</b> Course #TBD ~ 2 General CECs Chad Boggs, PSM _____	<b>Digital Signatures for Surveyors</b> Course #TBD ~ 2 General CECs Dolly Carwile, PSM _____

#### Cancellation Policy:

Over 60 days: Full refund less \$50 processing fee

Over 30 days: 50% refund

Less than 30 days: No refund



**Online Registration will be available Monday, May 19th.**

Installment Payment Plan Available

- First payment minimum \$175 Non-refundable
  - Final payment due by July 19<sup>th</sup>
    - Call 800.237.4384

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

Guest Name(s): \_\_\_\_\_

Emergency Contact (Print Name): \_\_\_\_\_ Emergency Phone: \_\_\_\_\_

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

Address: \_\_\_\_\_ Work Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

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

**ADDITIONAL TICKETS**  
*Additional tickets are only available with the purchase of Packet 1, 2 or 4.*  
*Additional tickets are NOT available with Packet 3.*

	Total		Total
<b>Packet 1</b>	\$ _____	<b>Wednesday Barbecue</b>	\$ _____
		(Not included in Packet 2, 3 or 4)	
		\$30 (x) _____	
<b>Packet 2</b>	\$ _____	<b>Thursday Exhibitors' Reception</b>	\$ _____
		Ticket required for Exhibit Hall entry	
		(Not included in Packet 3 or 4)	
		\$35 (x) _____	
<b>Packet 3</b>	\$ _____	<b>Thursday FSM PAC Dinner</b>	\$ _____
		(no cancellations unless replacement found)	
		(Not included in Packet 1, 2, 3 or 4)	
		\$100 (x) _____	
<b>Packet 4</b>		<b>Friday Past State Presidents' Dinner</b>	_____
<b>Required Break Fee \$100</b>		<u>Pay on your own</u>	
____ Saturday Seminars \$125	\$ _____	(Not included in Packet 1, 2, 3 or 4)	number attending
<b>Thursday Fishing Tournament</b>		<b>Saturday Installation Banquet</b>	\$ _____
(Once registered, no cancellations allowed)	\$ _____	(Not included in Packet 2, 3 or 4)	
\$145		\$79 (x) _____	
<b>Thursday Golf Tournament</b>		number of vegetarian _____	
\$115	\$ _____	<b>Saturday Installation Banquet Child's Meal</b>	\$ _____
		(12 and under)	
		\$18 (x) _____	

**Payment must accompany registration form.**

**Total Enclosed \$ \_\_\_\_\_**

*Please drink responsibly at all functions.*

**Payment Information:** \_\_\_\_ Check Enclosed (Make Payable to FSMS) \_\_\_\_ VISA/MasterCard/AE

Card #: \_\_\_\_\_ Exp. Date: \_\_\_\_\_ Signature: \_\_\_\_\_

Billing Address of Credit Card: \_\_\_\_\_

**IF PAYING BY CHECK, MAIL FORM TO: FSMS, P.O. Box 850001-243, Orlando, Florida 32885**  
**IF PAYING BY CREDIT CARD, FAX OR EMAIL FORM TO: 850.877.4852 [education@fsms.org](mailto:education@fsms.org)**  
**QUESTIONS? CALL 800.237.4384**



Online Registration will be available Monday, May 19th.

# Wednesday and Thursday Seminar Registration

## Wednesday, August 13<sup>th</sup> and Thursday, August 14<sup>th</sup>

Sawgrass Marriott Resort and Spa  
1000 PGA TOUR Boulevard  
Ponte Vedra Beach, Florida 32082 Phone: 904.285.7777  
<http://www.sawgrassmarriott.com/>

**Please check (✓) only one per day.**

### Wednesday, August 13<sup>th</sup>

8:00 am – 3:00 pm (6 MTS/L&R CEC)  
**A Practical Approach to 5J-17 Minimum Technical Standards for Surveyors with a Panel Discussion**  
Course #8429

**Instructors:**  
Pablo Ferrari, PSM  
Ray Niles, PSM  
Gail Oliver, PSM

8:00 am – 3:00 pm (6 General CEC)  
**The Origins and History of Surveying Methods and Instrumentation as Applied to Early American Surveying**  
Course #TBD

**Instructor:**  
Robert Heggan Jr., PSM

### Thursday, August 14<sup>th</sup>

8:00 am – 3:00 pm (6 MTS/L&R CEC)  
**Florida Laws**  
Course #6968

**Instructor:**  
Art Mastronicola Jr., PSM

8:00 am – 3:00 pm (6 General CEC)  
**Spanish Land Grants and Marsh Boundaries**  
Course # TBD

**Instructors:**  
Joe Knetsch, PhD  
Stephen Sharpe, PSM

\*\*\*\*\*

**Member** \$130 PER DAY  
**Non-Member** \$160 PER DAY  
**Non-Licensed in ANY State** \$ 80 PER DAY

**TOTAL ENCLOSED \$ \_\_\_\_\_**

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

Emergency Contact: \_\_\_\_\_ Emergency Phone: \_\_\_\_\_

*Print Name*

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

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

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

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

Card #: \_\_\_\_\_ Exp. Date: \_\_\_\_\_

Credit Card Billing Address: \_\_\_\_\_ Signature: \_\_\_\_\_

**IF PAYING BY CHECK, MAIL FORM TO: FSMS, P.O. Box 850001-243, Orlando, Florida 32885**  
**IF PAYING BY CREDIT CARD, FAX OR EMAIL FORM TO: 850.877.4852 [education@fsms.org](mailto:education@fsms.org)**

Provider No. CE11

[fsms.org](http://fsms.org)

**Cancellation Policy**  
30 days – Full Refund • 14–29 days – 50% Refund • 0–13 days – No Refund  
We reserve the right to cancel a seminar for reasons beyond our control with no liability for reimbursement other than the seminar fee.





**Online Registration will be available Monday, May 19th.**

### *Golf Tournament*

Ponte Vedra

Thursday, August 14<sup>th</sup>

Shotgun start at 9:00 am

Individuals and Teams  
Invited



Come and enjoy the toughest par 70 in St. Johns County with six par 3's for you to play.

Holes #2 and #8 were featured in the original "Dream 18."

The course was redesigned by Arnold Palmer and Ed Seay.

**Awards For:**  
Top 3 Foursomes  
Longest Drive  
Closest to the Pin  
Special Hole-in-One Prize

**Request for Team Contact:**

Joe Lek

904.363.1110

[j.lek@gaiconsultants.com](mailto:j.lek@gaiconsultants.com)

### *Fishing Tournament*



Enterprise Fishing Charters

Thursday, August 14<sup>th</sup>

7:00 am ~ 11:00 am

*In-shore or off-shore will be determined closer to Conference*

***Carpool options available***

**Contact:**

Tyler Tracz

904.722.0400

[tyler.tracz@degrove.com](mailto:tyler.tracz@degrove.com)

**Awards For:**

Largest fish

Most fish

59th Annual Conference

# Welcome Function BBQ

Join us Wednesday night August, 13th as we kickoff the 59th Annual Conference with a Bar-B-Que!

The annual Chapters' Cook-Off Competition is guaranteed to produce mouth-watering delectables.

Enjoy the evening with great company, network with fellow professionals, and feast on savory dishes.

## Saturday Evening Banquet

*A night of fine dining, awards and fellowship.*

### Reserved Table Request

Saturday, August 15th

Call 800.237.4384 for table selection or email  
programs@fsms.org

Number of Tables @ \$100 per table = \$ \_\_\_\_\_ (10 seats per table)

Name \_\_\_\_\_

Business Phone \_\_\_\_\_

Email \_\_\_\_\_

All proceeds benefit the FSM PAC Fund