



Otis A. Jones

EDUCATIONAL INSTITUTE

October 6 – 8, 2021

Jane S. McKimmon Conference and Training Center

NC State University | 1101 Gorman Street | Raleigh, NC 27606

ABOUT

Established as part of Past-President Otis Jones' presidential goals, the first Institute was held January 5-9, 1987, at the McKimmon Center and had 43 surveyors in attendance. Since 1987, NCSS has continued to provide this educational program, typically offered every two years. The program is designed to provide an in-depth look at important aspects of the surveying profession while also creating a university atmosphere for networking, fellowship, and professional development.

GRADUATION

To graduate, sections A, B and C of the Institute must be completed (in any order) with a total of 27 hours each. Once all three sections have been completed, the student is awarded a certificate of graduation. Section D does not count towards graduation.

INSTITUTE SECTIONS

A-Boundary Retracement, B-Business Practices & Survey Application, C-Emerging Issues, and D-Exam Reviews

QUESTIONS?

Can I participate if I only want to come for one day?

YES! You can register for each day separately. You do not have to attend the full 3-Day Institute.

Can I participate if I am a graduate of the Institute?

Absolutely! You can register and receive PDHs just like you would for a regular seminar.

DAILY SCHEDULE

7:30am – 8:00am Sign-In & Breakfast

8:00am – 5:15pm Class (Lunch Included)

Hotel Information

Holiday Inn Express & Suites, 3741 Thistledown Drive, Raleigh, NC 27606

Rate: \$114.99 for reservations made before September 14th.

Make your reservations online [NC Society of Surveyors](#)

2021 Otis A. Jones Educational Institute Course Descriptions

Section A

Wednesday **Topic:** *The Art of Retracement: Following in the Footsteps*

October 6th **Instructor:** Gary Kent

8am-5:15pm

Every professional surveyor across the United States knows the phrase “Follow in the Footsteps” as it relates to conducting a boundary retracement survey. But what does it really mean and what is the basis for following the footsteps? Exactly whose footsteps are we talking about? Surveyors also know the effect of the statute of frauds is that what is written in the conveyancing document is considered by the courts to be the highest and best expression of the parties’ intentions. But what happens when the evidence of the footsteps on the ground conflicts with the written title? What if there are seemingly no footsteps to follow? In this program we will explore the concept of retracement, how it relates to and is dependent on the document of conveyance, and what controls when conflicts are inevitably encountered. When armed with a full understanding of the concept of retracement, surveyors will be much better equipped to help steer their clients (and their affected neighbors) away from the pain and cost of litigation, and towards an amicable solution based on well-placed confidence and understanding of their respective roles and responsibilities. We will also delve into patent and latent ambiguities – where we find them, what they are and how to resolve, or at least account for, them. Considerable time will be spent walking through, analyzing and discussing several real-life boundary survey case studies to hopefully arrive at an understanding of what could or should have been done differently in preparing those surveys.

Thursday **Topic:** *2021 ALTA Updates*

October 7th **Instructors:** Gary Kent

8am-12pm

This course will look at the 2021 Revisions of the ALTA/NSPS Land Title Survey standards that became effective on February 23, 2021.

Thursday **Topic:** *Hydrographic Surveying*

October 7th **Instructor:** Jefferson Canoy

1:30pm-5:15pm

This course will introduce participants to hydrographic surveying by discussing basic procedures for quality control, data collection, and data processing for high frequency single beam bathymetric surveys. Attendees will learn how to conduct surveys in accordance with the standards and practices as established by the NSPS and USACE.

Friday **Topic:** *Riparian Rights*

October 8th **Instructor:** Dr. Jerry Nave

8am-12pm

Riparian and Littoral boundaries are issues that a surveyor will often face when performing a property survey. How do we locate and document a boundary that is always moving? What does navigability have to do with surveying? These questions

and more will be explored in this class as well as existing statute and common laws that define how and where these boundaries are located.

Friday **Topic:** *NC/SC State Line Boundary*

October 8th **Instructor:** Jim Davis

1:30pm-5:15pm This seminar will cover a history of the NC/SC State Line, a description of the various phases of the retracement survey and a presentation of the re-established state line. The project was led by the NC Geodetic Survey and SC Geodetic Survey who, along with private contractors, completed the technical portion of the survey in 2013. The results of the survey were accepted by the NC and SC State Line Boundary Commission and legislation adopted the results.

Section B

Wednesday **Topic:** *Retirement & Business Evaluation*

October 6th **Instructor:** John Amendola

8am-12pm As a business owner of a surveying company, your time is consumed with building a better, more profitable and hopefully more valuable business. Unfortunately, that often means deferring many important personal financial decisions to the future. We are offering this course to help you understand the various business and personal financial decisions that you may want to incorporate into your long-term thinking. Most importantly, you will gain a better understanding about steps you can take now to help provide a more financially secure future for yourself, your family, your business, and your employees.

Topics in this course include:

- Understanding your business
- Business valuation
- Business continuation agreements
- Employer-sponsored retirement plans
- Key employees: Compensation and employment agreements
- Business succession: Understanding your options

Sunup to sundown you work in your business... now is the time to work on your business.

Wednesday **Topic:** *Project Management*

October 6th **Instructors:** Toynia Gibbs, PLS and David Lee, PLS of ESP Associates

1:30pm-5:15pm Toynia and David will be sharing project management skills that they have learned over their years of service. Combined, they have over 60 years' experience in project management in government and private sector work. Toynia and David will walk you thru the management of a project - starting with the scope and estimate, continuing to contract administration & accounting to project close out.

Thursday **Topic:** *I Want to Help You Get The Best Price Possible*

October 7th **Instructor:** Robert Bailey

8am-12pm In today's world price is always an issue that eventually arises in any sales conversation. It does not matter what industry you work in; price can become an issue. It makes no difference if you are Business-to-Business or Business-to-Consumer, price resistance is universal. However, you

can overcome many of these situations and increase or protect your profits throughout the sales process. This course will take you step by step through the process and present you with opportunities to protect or increase those profits.

Many salespeople believe they can reduce the price and make up for it in volume. Can you? Do you want to? Do you really want low-margin business? Warren Buffet, one of the smartest people in the world about money, says when you are in a hole, stop digging.

You may be intimidated by price resistance because you do not fully understand it, making you feel powerless. This Class prepares you for the battle by helping you understand the causes of price resistance and the nature of price shoppers.

You will learn:

- Ten realities that shape the landscape of selling in a price-sensitive environment
- How salespeople create their own misery when it comes to price
- What buyers really want in a solution
- The consequences of a price-only philosophy
- Why salespeople cut price
- Value is more than a cheap price
- How to sell to price shoppers
- How to understand a buyer's motivation
- Why buyers resist
- Price negotiating tips
- How to manage competitive bidding

Thursday **Topic:** *Contract Basics*

October 7th **Instructor:** Dean Exline

1:30pm-5:15pm

You should always have a contract for your services, especially in these lean times. One project for which you are not paid can spell disaster. Having an agreement is no guarantee, but it will enhance the probability of getting paid. This session will provide an overview of how a contract establishes the scope of the services, overall professional relationship, system of communication, standard of care and the rights and responsibilities of all parties involved. Professional service agreements are one of the most important tools you have available for managing risk. Your agreement creates expectations of your performance and assigns rights and responsibilities to you as well as your client.

Friday **Topic:** *Professionalism, Public Perception and Profit*

October 8th **Instructor:** Dean Exline

8am-12pm

These 4 P's are intertwined in running a successful professional business and are shown here in their order of importance. Yes, that is correct, they are in order from least to greatest importance in being successful in a "Profession". In order to advance from being just a commodity to a being a **Profession**, you must not only be cognizant of and recognize each of these P words, you must also recognize the importance of their hierarchy.

PROFESSIONALISM and PUBLIC PERCEPTION - Whether we like it or not, each and every one of us is a salesperson marketing our profession to the public every day of the week. This marketing takes place on Sunday morning in church, at your child's t-ball game on

Tuesday, and at lunch on Wednesday. If we do not appear professional in both our actions and appearance, we will not be perceived as professionals in the eyes of the public.

PROFIT - The last piece of the puzzle is Profit. If your organization does not make a profit, it will simply not survive. We will explore the costs of doing business and outline where the money goes in the day-to-day operation of a business. Knowing what costs is to do business will go a long way toward making that business profitable.

Friday **Topic:** *Working with Remote and Flex Employees*

October 8th **Instructor:** Bill Beardslee

1:30pm-5:15pm In today's hectic workplace, coordinating staff to complete projects and satisfy client's needs is an ever more challenging task for management. This seminar will discuss options and processes in an attempt to utilize remote and flex employees in the most efficient manner.

Section C

Wednesday **Topic:** *AutoCAD*

October 6th **Instructor:** Marissa Gagne

8am-5:15pm **Prerequisite:** Students must be experienced and comfortable working in a Windows environment, including the use of a 3-button mouse.

The following lists the topics to be taught during this course.

Understanding the Environment

- Units and Drawing Limits
- Layers and Layer Properties
- Layer Filters and States

Drafting

- Basic Draw Commands
- Drawing with Precision using Object Snaps
- Modify Commands
- Inserting Blocks
- Creating Hatches/Fills

Creating Annotation

- Text and MTEXT
- Dimensions
- Tables
- Annotative Scaling

Dynamic Drafting

- Creating and Using Dynamic Blocks
- Creating Fields

Using Inquiry Commands

- Taking Measurements
- Filter and Quick Select

Linking External Data

- External References
- Spreadsheet Data Linking

Plotting

- Understanding Sheet Layouts and Plotting

Sheet Sets

Thursday **Topic:** *Intermediate Civil 3D*

October 7th **Instructor:** Marissa Gagne

8am-5:15pm Specific topics to be covered include:

- Review of Civil 3D Objects and Styles
- Objects and Styles
- Toolspace Tabs
- Civil 3D Points vs. Survey Points
- Layer Management in Civil 3D

GIS

- Importing and working with GIS Data
- Using Geolocation and Bing Imagery

Field-to-finish

- Point Styles and Point Label Styles
- Description Keys
- Point Groups
- Figure Prefix Databases
- Data Importing

Working with Survey Data

- Viewing and Editing data in the Database
- Traverse creation and Least-squares adjustments

Parcels

- Laying out Plats from Metes and Bounds
- Creation and Editing of Parcels
- Closure Reports and Legal Descriptions

Pipe Networks

- Understanding Parts Catalogs and Parts Lists
- Creating Pipe Networks from Survey data

Profiles

- Generating Surface Profiles
- Adding Pipes to Profiles
- Labeling Pipes in Profile

Construction Stakeout

- Creation of Cut/Fill Points from Volume Surfaces
- Creation of Stakeout Points along a Corridor
- Point File Export

Friday **Topic:** *Carlson Software*

October 8th **Instructors:** Jennifer DiBona

8am-5:15pm Topics to be Covered:

- Getting Started in Carlson

- Survey Project from Field to Plotted Sheet
- Carlson Field to Finish
- Time permitting: Surface modeling for stakeout or machine control
- Time permitting: CAD and Carlson Tips & Tricks

Section D

Wednesday This session will serve as a review for GIS and Photogrammetry Professionals sitting for the Mapping Sciences Exam to obtain their surveying license. Instructors will not be able to cover all topics on the exam but will cover the highlights.

October 6th
8am-5:15pm

Covered topics will include:

- Process for obtaining the PLS
- Information on Standards, Statutes and Rules
- Photogrammetry-project planning
- Geodesy and map projections
- Data acquisition, mapping and documentation
- Business planning and communication
- Quality Assurance
- Hydrology
- Review of State Laws

Thursday **Topic:** *PS Exam Review*

October 6th **Instructors:** Peggy Fersner & Dr. Jerry Nave

8am-5:15pm

This will serve as a review for those who are preparing to take the “Principles and Practice of Surveying” exam. Instructors will not be able to cover all topics on the exam but will cover the highlights. Go to <https://account.ncees.org/exam-prep/360> to purchase a practice exam from NCEES.

Covered topics will include:

- Technical Surveying Methods and Practice:
 - GNSS – VRS (RTK) and Static
 - North Carolina State Plane Coordinate System
 - Solar and Polaris Observations
- Board Rules:
 - General Statute of North Carolina Chapter 89C
 - NCAC Chapter 56
- Statutes:
 - NC General Statutes regarding boundary and easements
 - NC General Statutes regarding Subdivision Development
 - Mini Brooks
- Law:
 - Riparian/Littoral Rights
 - Boundary Relocation
- Principles of Open Channel Flow:
 - Computations of hydraulic radius and depth

- Sizing of channels
- Sizing of circular conduits (pipes) flowing full and partially full
- Computations of Travel Times:
 - Sheet, concentrated, and pipe flow
- Peak Flow Computations:
- NRCS - SCS Peak Flow
- Rational Peak Flow
- Storm Sewer Design
- Culverts
- Detention Volume Estimates
- Horizontal and Vertical Curve Design
- Overview of the Erosion Control Manual
- Overview of the NC DENR BMP Manual

Friday **Topic:** *FS Exam Review*

October 8th **Instructor:** Jared Ownbey

8am-5:15pm

This class will serve as a review for those who are preparing to sit for the “Fundamentals of Surveying” exam. Instructor will not be able to cover all topics on the exam but will cover the highlights. Go to <https://account.ncees.org/exam-prep/346> to purchase a practice exam from NCEES.

Topics include:

- Basic Surveying Math: Trigonometry, Latitudes & Departures, Compass Rule Adjustment, PPM Computations and Ratio of Precision
- Basic Taping & Corrections
- Basic Leveling
- Boundary Law: Easements by Prescription, Hierarchy of Calls, Boundary Control & Legal Principles Vocabulary, Adverse Possession, Conflicting Evidence, Riparian & Littoral Boundaries, and Deeds/Records
- Boundary Survey Procedure
- Boundary Line Establishment
- Public Land System
- Basic Surveying Math: Trigonometry, Statistics & Random Errors in Surveying (Basic Error Theory), and Standard Deviation & Mean (Basic Statistics)
- GPS & Positional Accuracies
- NC State Plane Coordinate System: Grid North vs. Geodetic North, Magnetic Declination, and Celestial Observations
- Curves: Horizontal Curves and Equations, Vertical Curves and Equations, Spiral Curves
- Aerial Mapping/Photogrammetry
- Exam Taking Strategies

Instructors

John Amendola

John focuses on business development, client relationship management, investment advisory, and financial planning in the Raleigh area. His breadth of expertise comes from over 20 years of financial industry experience working with successful individuals, entrepreneurs and companies throughout North Carolina. John has been instrumental in the opening of a new office for the firm in Raleigh. He has a sincere passion for making a difference in people's lives through his work with financial planning and wealth management. He has taught retirement and business financial strategies courses and seminars at North Carolina State, Wake Tech and other local churches and organizations. John was previously with Piedmont Investment Advisors, LLC where he served as Senior Vice President and Portfolio Manager with the firm. He utilized his entrepreneurial experience as founder and Chief Investment Officer of Centerwood Partners, LLC, a wealth management firm serving high net worth individuals, family offices and retirement plans. Additionally, he has held other executive positions with KDI Capital Partners, LLC and management positions in finance and real estate with McDonald's Corporation. Prior to that, John worked with Price Waterhouse. In 1986, John graduated from Marshall University with a Bachelor of Business Administration (B.B.A.) where he was chosen as a Rhodes Scholar finalist and was captain of the men's basketball team during his senior year. John resides in Raleigh, NC with his wife and three children. He was the founder and President of the Ultimate Skills Football Club (USFC), a 501-C charity, benefitting local youth. John is a Registered Representative and Investment Advisor Representative with Securian Financial Services, Inc. John Amendola Experience- 32 years: Price Waterhouse- Audit & Tax, McDonalds Corp- Regional CFO & Regional R/E Manager, Maynard Capital Partners- Largest Family Office in NC centered around Founder of Golden Corral, Piedmont Investors- Financial Firm specializing in Government Assets, Centerwood Partners- Owner, Holistic & Comprehensive Planning Firm, Virginia Asset Management- Southeastern Holistic and Comprehensive Planning Firm.

Robert D. Bailey

Now officially retired from Carlson Software, Robert shares his sales and management expertise garnered from more than 40 years of experience in both land surveying equipment sales and sales team/company management. Effective selling in this industry has many components, most of which he has encountered over his career.

Background Information

Sales Expertise - Southeastern Regional Sales Manager and National Sales Manager for the Lietz Company (now Sokkia). 1995-2003 Nikon Surveying, starting as a Sales Manager and ending as Sales Manager/ Department Manager .

Initiative – Developed, trained, and managed a telemarketing program at Lietz to help support the sales staff.

Management - As National Sales Manager at Leitz, instituted training programs for territorial sales managers, and dealers to help familiarize them with the growing product line and sales techniques which lead to increased employee retention all ways staying under budget.

Carlson Software – Helped to bring structure to the software development teams and overall company organization. Extensive knowledge of the surveying instrument distribution channels proved invaluable as Carlson moved into a dealership distribution mode. For Carlson's worldwide employees – regional sales managers and many software developers who manage and work from their own home bases located around the world – worked to be a unifying source of information and the go-to person to have questions answered or problems solved. Helped initiate and organize Carlson's successful User Conferences.

Background/Education - Studied engineering and land surveying at Southern Technical Institute then spent several years working in the construction industry before moving to sales at Lietz. Associates of Business Management degree from The Center for Degree Studies in Scranton, PA.

William E. (Bill) Beardslee, PE, PLS, PP

Bill is a licensed Professional Land Surveyor, Engineer and Planner with over 45 years experience in the field of land development. He is known for his excellent presentation and writing capabilities, along with being one of the leading technical experts on land development in the engineering and surveying arena. He has made over 2,000 presentations on engineering and surveying projects to local and state agencies. Prior to his retirement, he was the owner and Director of Engineering for Beardslee Engineering Associates in Sparta, NJ.

Richard M. (Mike) Benton

Mike was born and raised in Goldsboro, NC. He graduated from Eastern Wayne High School in 1976 and attended the college transfer program at Wayne Community College from 1976-1978. He graduated from Coastal Carolina Community College with an AAS degree in Surveying Technology in 1982. In 1991, after living and working several years in Greenville, NC, Mike moved back home to Goldsboro and established Benton & Associates Land Surveying and Mapping, PA. Mike has been an active member of the North Carolina Society of Surveyors (NCSS) since 1991, serving as the chairman of the Formal Education Committee from 1993-2000, President of NCSS in 2003 and the North Carolina Delegate to the Board of Governors for the National Society of Professional Surveyors from 2008-2013. On November 06, 2012, Mike was appointed by Governor Beverly Perdue to serve on the Board of Examiners for Engineers and Surveyors.

Jefferson Canoy, PLS PSM

Jeff is a professionally licensed surveyor in North Carolina and Florida. He has earned degrees in Geomatics and History from NC A&T and UNCW respectively. He works as Vice President of Survey Operations at TI Coastal Services where he has gained most of his 13 years of experience performing and overseeing projects involving hydrographic and topographic surveys. These projects include yearly monitoring surveys for beaches, waterways, and inlets; freshwater condition surveys for ponds, lakes, and rivers; long term daily support surveys for dredging and other maritime construction; and shipping channel clearance surveys.

James E. Davis, PLS

Jim is the Charlotte Survey Manager for Merrick & Company. He is responsible for managing a team of surveyors in completing all types of surveying projects for a variety of clients both public and private located throughout the southeast. Mr. Davis received a Bachelor of Science Degree in Surveying from Ohio State University and earned a Master of Business Administration degree from UNC Charlotte. He has been licensed Professional Land Surveyor in North Carolina for 26 and is also a licensed in South Carolina, Georgia, Virginia and Ohio. Prior to coming to Merrick, Mr. Davis was the project manager for the survey to re-establish the North Carolina South Carolina State Line. This multi-year project which was completed in 2013 was a collaborative effort between North Carolina Geodetic Survey, South Carolina Geodetic Survey and several private surveying firms. Mr. Davis has previously served as president of the NCSS Education Foundation, a board member for NCSS, and Chairman of the NCSS Education Committee. He currently serves on the Geomatics Advisory Board for North Carolina A&T University. Mr. Davis lives in Concord, NC with his wife and two children.

Jennifer DiBona

Jennifer is a long time CAD consultant and trainer doing business as That CAD Girl. She has a degree in Surveying Technology and has worked in several consulting offices across North Carolina and also in Chicago. For a couple of years, she worked for a private developer in Eastern NC. Then she moved to Asheville where she spent a couple of years working with surface models. From there, she moved back to the Raleigh area and started working with an Autodesk and Carlson Software reseller. In 2004, she became a full time, independent consultant providing training, technical support, and other various consulting services. Jennifer has taught several AutoCAD classes for continuing education departments, presented at many conferences, including NCSS, and is certified through the NC Board of Examiners for Engineers and Surveyors to provide continuing education credit to licensees. She is also a supporter of North Carolina Society of Surveyors.

Rich Elkins, GISP

Rich has been the Land Records Manager for the NC Department of the Secretary of State since August 2016. He earned his BA in Geography from East Carolina University in 1996 and continued his studies at ECU in Urban/Regional Planning until 1998. From 1999 to 2012, he was the GIS Coordinator/Consultant in various counties including Edgecombe, Chowan, and Pitt. He became the GIS Land Records Manager for Pitt County in December 2012 and was there until becoming the Land Records Manager for NC Department of the Secretary of State.

Dean D. Exline, PLS

Dean is the founder and President of GeoInnovation, PC. He has over 30 years of experience as a land surveyor and is licensed as a Professional Land Surveyor in North Carolina, South Carolina, Virginia, West Virginia, Kentucky, Ohio, Idaho, Alabama and the US Virgin Islands. His background includes extensive experience in boundary, construction staking, GPS and conventional survey control, dam deformation measurements, topographic surveys, small hydrographic surveys, coal pile quantity surveys, and power line surveys. In addition to being a speaker at various Professional Land Surveying Conferences around the US, he has authored technical papers on the use and economics of robotic surveying and the use of GPS to perform dam deformation measurements both nationally and internationally. He is a professional member of the North Carolina Society of Surveyors, the Professional Land Surveyors of Ohio and the Idaho Society of Surveyors.

Peggy Fersner

Peggy has been on the faculty of North Carolina A&T State University since 1993 teaching surveying, GIS, and hydrology courses. She is also the coordinator of the 4-year Geomatics program at NC A&T State University. Prior to this, she was a consulting engineer in Charleston, SC with an emphasis on subdivision design. She holds her BS and MS degrees in Civil Engineering from Virginia Tech and Clemson University, respectively.

Marissa Gagne

Marissa is the Practice Manager for Civil and Infrastructure at CADD Microsystems. Marissa graduated from Virginia Tech with Bachelor's and Master's degrees in Civil Engineering. She has been working with Autodesk products for over 20 years, specializing in the Civil, Survey, and GIS solutions. She has worked for a number of reputable civil firms in Virginia providing CAD support to transportation, utility, land development, mapping, and GIS projects. At CADD Microsystems, Marissa's responsibilities include managing the Civil

Team, performing product demonstrations, teaching classes, giving seminars and workshops, and performing consulting for many Autodesk products such as AutoCAD, Civil 3D, Land Desktop, Map 3D and Raster Design.

Toynia Gibbs, PLS

Toynia graduated from Coastal Carolina Community College in 1986 with a degree in Surveying Technology. She started her career at NCDOT Location & Survey Unit in 1991 as a project data support technician, earning her Surveying License in 1997. In 2002 she moved to the private sector and took a job with ESP Associates, Inc. She is currently a Survey Department Manager in their Raleigh Office. Toynia has over 30 years of progressive land surveying and project management experience and has managed over 200 transportation design survey projects ranging in size from small bridge projects to large roadway projects with over 10 miles of -L- line. Her duties include department management and administration, marketing, business development, field crew/personnel supervision and training along with quality control and quality assurance. Ms. Gibbs has expertise in high quality product delivery and excellent communication skills.

Gary Kent, PLS

Gary is in his 39th year with Schneider Geomatics in Indianapolis, having transitioned to part-time status in 2020. He also provides training, consulting and expert witness services as manager and owner of Meridian Land Consulting, LLC. He has served on the Indiana State Board of Registration for Professional Surveyors since 2004 and is a past-president of both ACSM and the Indiana Society of Professional Land Surveyors. Gary has chaired the joint ALTA/NSPS Committee on the ALTA/NSPS Land Title Survey Standards since 1995. He has presented programs on boundary law, easements and rights of way, surveying standards and practice, and leadership in all 50 states and three times in Europe.

J. David Lee II, PLS

David graduated from Richmond Community College in 1990 with an Architectural Diploma. He started his careers spending the first 7 years with NCDOT before moving into the private sector and earning his Surveying License in 1999. The next 24 years David served as Principal and Survey Program Manager for CALYX Engineers + Consultants an NV5 Company, Geomatics Director for SEPI Engineering and is currently serving as Division Manager over Transportation Surveys at ESP Associates, Inc. Located in their Charlotte office, he oversees survey operations for the DOT's in both North Carolina and South Carolina, including project management, quality control, and project delivery. Since joining the private sector 24 years ago, David has worked statewide on numerous location and survey projects. From extensive GPS network control to boundary surveys, he is proficient in all aspects of land surveying. David served on the NCSS Board of Directors as the Mecklenburg Chapter President. He is currently serving as Vice President on the NCSS Board of Directors and President of the NCSS Education Foundation. He has been a member of NCSS since he was licensed.

Hope Morgan, GISP, CFM

Hope is a GIS Specialist/ Project Manager at AECOM currently leading the Geospatial Technical Excellence program for Compass which included Survey, Terrain, Floodplain mapping production and CNMS for FEMA. Working with Remote sensing technologies for over 20 years she was previously the IT/GIS Manager for the Risk Management section of North Carolina Emergency Management. Projects include the statewide collection of NC Orthophotography in 2010, collection of 5.25 million structures with associated data in 2010,

collection of 1400 miles of coastal roads with Mobile lidar in 2013, and the current 5 phase collection of NC Lidar at a QL2 and QL1 level, to include 60 counties of linear lidar and 40 counties of Geiger Lidar from 2014 to 2020.

Dr. Jerry Nave, PLS

Jerry graduated from East Tennessee State University in 1986 with a Bachelors degree in Survey and Mapping Science. He later completed a Masters Degree in 1999 and his Doctorate Degree in 2005 both from East Tennessee State University. After graduating in 1986, he worked for Dewberry and Davis for six years in both Fairfax, Virginia and Johnson City, Tennessee. In 1992, he went to work for the City of Johnson City and in 1993 he moved to the City of Kingsport as Land Surveyor for the Engineering Department. He later started a small land surveying firm in Elizabethton before joining the faculty at East Tennessee State University's Surveying and Mapping Science Program. In 2007, Dr. Nave moved to Greensboro, NC to help start the Geomatics Program. Dr. Nave has served as the President of the Guilford Chapter (2015-2019), the NCSS Executive Board of Directors (2017-Present) and has served on a number of committees for the Society. In addition to his university duties, Dr. Nave teaches seminars related to boundary, GNSS, UAS and ethics to the surveyors of North Carolina. Dr. Nave is licensed as a PLS in both Tennessee (1993) and North Carolina (2015) and has his FAA UAS certificate (2018-Present).

Jared Ownbey, PLS, Asheville-Buncombe Technical Community College

Jared has been surveying since 2004. He completed a two-year Associate in Applied Science Degree in Surveying Technology, where he graduated with top honors from Asheville-Buncombe Technical Community College in May of 2004. He has held his North Carolina Professional Land Surveyor License since December of 2008. Jared's experience includes working as a crew chief at Vaughn & Melton Consulting Engineers, then shifting to the office as Surveying Department Chair at WNC Professional Engineers & Surveyors. He also has had extensive training in GPS. He is currently a surveying instructor at Asheville-Buncombe Technical Community College where he has been since January of 2011, as well as, having his own small surveying firm. Jared's professional passion includes Boundary Survey Law.

Frank A. Rankin, III, PE, PLS

Mr. Rankin has 43 years of experience working both in civil engineering and in land surveying within the land development services industry. Mr. Rankin was the first employee of Concord Engineering & Surveying, Inc. (CESI), starting part-time with the newly chartered firm after graduation in 1978. Over that first summer Mr. Rankin and the founders, Al Frieze and Gary Simmons, worked part-time in the evenings surveying until dark and then computing and drawing maps until midnight. After a summer of this effort the founders decided to begin operations full-time and the firm began to grow rapidly. In those early years and Mr. Rankin was exposed to many aspects of surveying and was able to hone his civil engineering skills based on in-the-field experiences working with contractors to build sites designed both by CESI and by others.

In 1983 Mr. Rankin was offered the opportunity to purchase an interest in the firm and, after doing so, was given the role of Vice-President, while at the same time continuing to actively supervise surveying and civil engineering projects. With the death of the remaining founder in 1998, Mr. Rankin became President and began to concentrate on management and administrative duties. In June 2018 Mr. Rankin stepped down from his position as an officer of CESI but remained Chair of the Board of Directors until June 2021. Mr. Rankin has continued on staff as Special Projects Manager. In Mr. Rankin's surveying career he has been deeply involved in interesting and challenging projects, such as the NC-SC Ridge Line Survey, the NC-SC

1772 State Line Clarification, the NC-SC 1764 State Line Clarification, the Cherokee-York County Line Retracement, the Greenville-Laurens County Line Retracement (portions of which are the 1766 boundary between South Carolina and the Cherokee Nation and the 1767 boundary between North Carolina and the Cherokee Nation), the Chester-York County Line Retracement, Laurens-Newberry County Line Retracement, large retail projects such as Northlite Commercial Center, large industrial projects such as the International Business Park at Concord and the NCRR Corridor Monumentation Project, institutional projects with Northeast Medical Center (now CMC-NorthEast) and Cabarrus County Schools, and with long-time clients such as Charlotte Motor Speedway.

Mr. Rankin is a past Chair of the Cabarrus Regional Chamber of Commerce, a past Chair of the Coltrane Life Center, a founder and past Chair of Cabarrus Bank & Trust, on the initial board of Uwharrie Bank, was elected Chair of Uwharrie Capital Corporation for two years beginning in May 2018, a past Chair of the Concord Rotary Club, has served on the Cabarrus Board of Health, served on the Board of Directors for the North Carolina Society of Surveyors, has twice been President of the Concord Downtown Development Corporation Board, served from 2001 until 2015 on the North Carolina Workforce Development Commission, served as Chair of the Governing Board of the Carolina Thread Trail, is a Senior Fellow of the American Leadership Forum, was reappointed for another term in April 2020 on the North Carolina Land Records Advisory Committee of the NC Secretary of State, was appointed July 2011 to serve on the NC Geographic Information Coordinating Council, and in January 2017 was appointed as Chair of NC GICC, along with service to many other organizations.