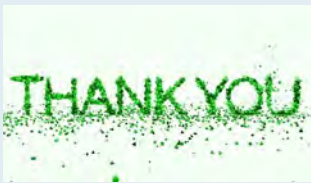
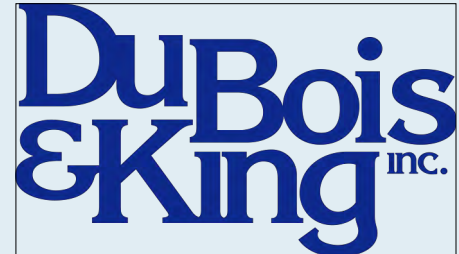


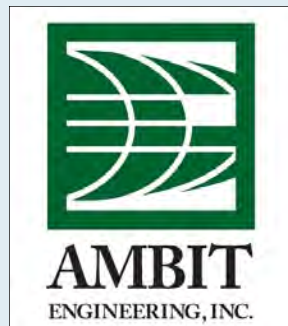


New Hampshire Land Surveyors Association

50th Annual Meeting & Equipment Show



Eric C. Mitchell & Associates, Inc.
Land Planning ~ Surveying ~ Environmental Services
Bedford, New Hampshire



December 5 & 6, 2019

**Courtyard Marriott Grappone
Conference Center**

70 Constitution Avenue, Concord, NH



WELCOME FROM THE PRESIDENT

NHLSA 50th Annual Meeting & Equipment Show

Three years ago I started to hear talk amongst our organization that 2019 would be our 50th year as an association, and we should have a big celebration. Time flies, and here we are in 2019 celebrating the 50th year of our organization. On March 4th, 1969, the Cheshire & Sullivan County Land Surveyors Association agreed to open membership to the entire state, and to rename themselves The New Hampshire Land Surveyors Association.

Fifty years as an organization run by volunteers in their "spare" time is quite an accomplishment.

I think the founding fathers would be proud of what they started and what we have become. As we celebrate our 50th year, please take the time to thank those who have agreed to travel and enlighten us as to how our roots were established. The 50th Annual Committee, formed in 2017, has worked diligently to plan and implement this celebration. I thank each one of them for making this happen and the success that we all envisioned.

Things are different this year. We're offering more, and shorter workshops, rather than the full 8 hour seminar in past years. This gives us the opportunity to pick and choose topics of interest and still have time to participate in other activities. CEU's will not be applicable to each workshop, however, 2 CEU's will be available per day for attendance at 8 hours of workshops.

New this year is the Surveying Olympics, refereed by our Young Surveyors group. I encourage you to check this out and participate as awards for the fastest and/or most accurate will be offered for each event, and an overall winner will be announced. These Olympics include a back sight set-up for time, chain throwing, leveling by eye, a cone toss and 100' pace. Surely those of you with experience in each event can show others "how it's done."

We also will take a walk down memory lane with "Following in their Footsteps" - a question and answer session with some of the Associations' founding fathers and those who have established roots as a surveyor or educator of surveyors in New Hampshire.

Maybe the Mock Planning Board hearing will interest you as we have some fun with the process that we often spend late evening hours doing. This session will help us with some do's and don'ts when presenting to boards and help us appreciate the effort that many board members put forth.

This year we will be discussing topics of concern with the North East Surveying Societies (NESS), and I extend a warm welcome to those who are traveling from other states to participate in this discussion and to help us celebrate our 50th year. The goal of NESS is communication between North East State Societies to help solve the issues of each state's professional surveying organization. When we discuss these issues openly, we can provide advice for problems we have overcome and discuss possible solutions for those issues we are faced with.

We have invited Governor Sununu to our event, but unfortunately we won't know if he'll be attending at this time. Stay tuned!

Finally, I would like to thank our sponsors and exhibitors for making this celebration possible. Without your generous donations and participation in our exhibit hall, this event does not happen.

Enjoy our 2-day celebration, I personally thank you all for attending as it shows your commitment to NHLSA and our profession.

With gratitude,



J. Corey Colwell, LLS
NHLSA 50th *President*

BADGES REQUIRED - ALL EVENTS

Please help your fellow members and guests identify you by name by wearing your badge.
(meal tickets included in your badge)

PROGRAM AT A GLANCE

NHLSA 50th Annual Meeting & Equipment Show

Thursday, December 5, 2019

REGISTRATION—PRE-FUNCTION AREA

See page 21 for
Meals

| | |
|-------------------|--|
| 6:00 AM—8:00 AM | Exhibitor Set-up |
| 7:30 AM—8:00 AM | Registration (sign in/out throughout the day) Sunrise Continental Breakfast (Exhibit Hall) |
| Salon A/B | |
| 8:00 AM—4:00 PM | Exhibit Hall Open |
| 8:00 AM—12:00 PM | Workshop Sessions (multiple simultaneous workshops to choose from) (see Workshop descriptions) |
| 10:00 AM—10:15 AM | Classic Midmorning Break (Exhibit Hall) |
| 12:00 PM—1:30 PM | Lunch Buffet (Salon A/B/C) |
| 1:00 PM—2:00 PM | Business Meeting (Salon A/B/C) |
| 2:00 PM—4:00 PM | Workshop Sessions Continued |
| 2:45 PM—3:00 PM | The Health Break (Exhibit Hall) |
| 4:00 PM—6:00 PM | Social & Live Auction Featuring Terry Eldredge, Auctioneer & DJ Bobby Freedom providing music |
| 6:00 PM—7:30 PM | Awards Banquet |
| 7:00 PM—9:00 PM | DJ Bobby Freedom & Karaoke |

Friday, December 6, 2019

| | |
|-------------------|---|
| 7:30 AM—8:00 AM | Registration (sign in/out throughout the day) Sunrise Continental Breakfast (Exhibit Hall) |
| Salon A/B | |
| 8:00 AM—4:00 PM | Exhibit Hall Open |
| 8:00 AM—12:00 PM | Workshop Sessions (multiple simultaneous workshops to choose from) (see Workshop descriptions) |
| 10:00 AM—10:15 AM | Classic Midmorning Break (Exhibit Hall) |
| 12:00 PM—1:30 PM | Lunch Buffet (Salon A/B/C) |
| 12:00 PM—2:00 PM | Exclusive Exhibitor Viewing (Salon A/B) |
| 1:00 PM—4:00 PM | Workshop Sessions Continued |
| 2:45 PM—3:00 PM | New Hampshire Artisan Cookie Jar (Exhibit Hall) |
| 3:00 PM—4:00 PM | Exhibitor Breakdown |

Signing In / Signing Out

Two (2) Continuing Education Unit credits will be awarded for full day attendance on Thursday and two more on Friday. Make sure you sign in and sign out at the beginning and ending of each day. If you need to leave early for any reason, just sign out at the registration desk, and denote the time you left. If you are able to return again (after you deal with your pop-up issue), sign back in again, noting the time. Proportional CEU's will then be awarded to you.



Eric Mitchell is again organizing a USMC Toys for Tots donation campaign during the Annual. New toys (unwrapped) and cash donations will be accepted at our event. Thank you for any contribution you can make towards this effort!

REGISTRATION—PRE-FUNCTION AREA

| NHLA 50 th Annual Schedule | | | | | | |
|--|---|---|---|--|--|---|
| Courtyard Marriott Grappone Conference Center - Concord, NH | | | | | | |
| REGISTRATION: 7:30 AM | | Thursday - December 5, 2019 | | Pre-function Area | | |
| Sign-in/out at beginning and end of day and in between if you have to leave the building (2.0 CEUS) | | | | | | |
| TIMES | Salon A | Salon B | Salon C | Capital Room | Concord Room | Constitution Room and Pre-function area |
| 7:30 AM | Continental Breakfast, Breaks, and Lunch in the Exhibit Hall | | | | | Session 5: Surveying Olympics 8:00 am - 12:00 pm |
| 8:00 AM | EXHIBIT HALL | EXHIBIT HALL | Following in their Footsteps Session 1: 8:00 am-10:00 am Session 2: 10:00 am-12:00 pm | Session 3: Vendor Technological Advances 8:00 am - 9:00 am | Session 4a: Mobile Imaging/ Scanning, Off the Tripod 8:00 am - 9:00 am | |
| 8:30 AM | | | | Session 6: Reality Capture Technologies 9:00 am - 12:00 pm | Session 4b: Working with Town, State, and Federal Agencies 9:00 am - 10:00 am | |
| 9:00 AM | | | | | Session 7: Litigation by the Lake - Who Owns the Road? 10:00 am-12:00 pm | |
| 9:30 AM | | | | | | |
| 10:00 AM | | | | | | |
| 10:30 AM | | | | | | |
| 11:00 AM | | | | | | |
| 11:30 AM | | | | | | |
| 12:00 PM | 12:00 pm - 1:30 pm Lunch | | | | | |
| 12:30 PM | | | | | | |
| 1:00 PM | 1:00 pm - 2:00 pm Business Meeting | | | | | |
| 1:30 PM | | | | | | |
| 2:00 PM | EXHIBIT HALL 2:00 pm - 4:00 pm | EXHIBIT HALL 2:00 pm - 4:00 pm | Session 8: Mock Planning Board 2:00 pm - 4:00 pm | Session 9a: LEFT Award Presentation 2:00 pm - 3:00 pm | Session 10: NSPS Overview 2:00 pm - 4:00 pm | |
| 2:30 PM | | | | Session 9b: Rangeways - Time for Resolution 3:00 pm - 4:00 pm | | |
| 3:00 PM | | | | | | State Rooms (Webster & Pierce) |
| 3:30 PM | | | | | | |
| 4:00 PM | EXHIBIT HALL SET-UP FOR FRIDAY ONLY EXHIBITORS 4:00 - 9:00 pm | EXHIBIT HALL SET-UP FOR FRIDAY ONLY EXHIBITORS 4:00 - 9:00 pm | Reception & Live Auction with background music provided by DJ Bobby Freedom 4:00 - 6:00 pm | | | |
| 4:30 PM | | | | | | |
| 5:00 PM | | | | | | |
| 6:00 PM | | | Awards Banquet 6:00 pm - 7:30 pm | | | |
| 6:30 PM | | | | | | |
| 7:00 PM | | | DJ & Karaoke 7:00 pm - 9:00 pm | | | |
| 9:00 PM | | | | | | |
| Certificates will be mailed | | | | | | |

PROGRAM AT A GLANCE

REGISTRATION—PRE-FUNCTION AREA

NHLSA 50th Annual Meeting & Equipment Show

| NHLSA 50 th Annual Schedule | | | | | | | | |
|---|---|--|--|--|---|---|---|---|
| Courtyard Marriott Grappone Conference Center - Concord, NH | | | | | | | | |
| REGISTRATION: 7:30 AM | | Friday - December 6, 2019 | | | | | | Pre-function Area |
| Sign-in/out at beginning and end of day and in between if you have to leave the building (2.0) CEUS) | | | | | | | | |
| TIMES | Salon A | Salon B | Salon C | Capital Room | Concord Room | Merrimack Room | Pierce Room | Constitution Room |
| 7:30 AM | Continental Breakfast, Breaks, and Lunch in Exhibit Hall | | | | | | | Past Presidents Breakfast 7:30 am - 9:00 am |
| | | | | | | | | |
| 8:00 AM | EXHIBIT HALL | EXHIBIT HALL | Session 11: 50 Years of Surveying Computing Technology 8:00 am-11:00 am | Session 12: 1988 Research Seminar Video 8:00 - 10:00 am | Session 13: Overview of NGS Products and Seives 8:00 - 10:00 am | Session 14: Technician to Professional 8:00 am-11:00 am | Session 15: Surveying in Flood-plains 8:00 am - 10:00 am | Session 16: NESS Roundtable 9:00 am - 10:00 am |
| 8:30 AM | | | | | | | | |
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| 9:00 AM | | | | | | | | |
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| 9:30 AM | | | | | | | | |
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| 10:00 AM | | | | | | | | |
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| 10:30 AM | | | | | | | | |
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| 11:00 AM | Session 21: Board of Licensure 11:00 am - 12:00 pm | Session 17: 50 Years of History and Memories 10:00 am - 12:00 pm | Session 18: CAD Tips and Tricks for better Efficiency 10:00 am - 12:00 pm | Session 22: Apprenticeship as a Workforce Strategy 11:00 am - 12:00 pm | Session 19: Subsurface Sytems Bureau Update 10:00 am - 12:00pm | Session 20: NE Surveying Women Roundtable 10:00 am - 11:00 am | | |
| | | | | | | | | |
| 11:30 AM | | | | | | | | |
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| | | | | | | | | |
| 12:00 PM | Lunch & Session: 24 Salon A/B 12:00 pm - 2:00 pm Viewing of Exhibit Hall | | | | | | | |
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| 12:30 PM | | | | | | | | |
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| 1:00 PM | | | | | | | | |
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| 1:30 PM | | | | | | | | |
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| 2:00 PM | EXHIBIT HALL | EXHIBIT HALL | Session 25: Young Surveyors: Surveying Olympics Review and Forum 2:00 pm - 4:00 pm | Session 26: Map Contest Showcase 2:00 pm - 4:00 pm | Session 27: Subsurface Utility Mapping 2:00 pm - 4:00 pm | Session 28: Latest Trends in GNSS 2:00 pm - 4:00 pm | Session 29: NH Shoreland & NHDES Wetlands Updates 2:00 pm - 4:00 pm | Session 30: Basics of Photogrammetry and Map Accuracy Standards 2:00 pm - 4:00 pm |
| | | | | | | | | |
| 2:30 PM | | | | | | | | |
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| 3:00 PM | | | | | | | | |
| | | | | | | | | |
| 3:30 PM | | | | | | | | |
| | | | | | | | | |
| 4:00 PM | Certificates will be mailed | | | | | | | |

WORKSHOPS ★ THURSDAY, DECEMBER 5th

NHLSA 50th Annual Meeting & Equipment Show

Thursday's Sponsors Continental Breakfast



(1) Following In Their Footsteps

Douglas C. Burnell, LLS

This will be a discussion among several vintage surveyors moderated by Doug Burnell. The two back-to-back sessions will feature different sets of panelists in each responding to the same series of questions in both. All in turn will be asked, among other things, about their careers in surveying, any involvement or recollections around the founding of NHLSA and/or state registration of land surveyors about 50 years ago, changes in surveying technology they have experienced, thoughts on the future of surveying, and, especially, any memorable surveying experiences they could share with us. Questions from the audience will also be encouraged.

Doug is now retired from HEB Engineers in North Conway. Doug has continued volunteer-surveying for, and being board president of, the USVLT, with a service area encompassing eight towns in NH and three in ME.



8:00 AM - 10:00 AM

Salon C

(2) Following In Their Footsteps (continued)

10:00 AM - 12:00 PM

Salon C

(3) Technological Advances

**Steve Ferguson, LLS
Program Chair**

Participating vendors will present a brief overview on the latest products and/or services their companies are currently offering. This is a good opportunity for surveyors to learn about recent changes that may become useful in their next project.



8:00 AM - 9:00 AM

Capital Room

(4a) Mobile Imaging/Scanning, "Off the Tripod"

**Robert Vargo
Justin Brooks**

In today's ever-changing world, we constantly have to examine the way we look at our data, and the information we share with others. We strive to minimize the time we spend out in the field, and maximize the quality of the deliverables we produce. This leads us to evaluate each and every data gathering task we conduct, and forces us to ask ourselves, is there a way we could do this better? Is a total station necessary for every attribute we gather out in the field? What are the requirements for these deliverables that keep getting added to our workflow? Today we will dive into some of the emerging technologies out there, and see how their performance, and new approach can benefit our day to day operation.

Robert is Keystone Precision's Mobile Imaging and MGIS Consultant based out of the Greater Boston Area, here to support the New England region. Over the past 7 years of **Robert's professional career, he has** spent a large amount of time working in different 3D CAD environments, working on projects for both the energy and automotive manufacturing industries. He has taken that 3D **experience and uses it on a daily basis to help KPI's** partners develop a better understanding of the tools and processes at their disposal.



Justin is an engineer from the Orlando, Florida region, now based out of Denver Colorado. He is one of **Trimble's Applied Geospatial Experts, with a focus** on Mobile Mapping solutions for the Americas. He has spent the majority of his professional career working with motion-based systems and LiDAR, and is constantly working to improve the way we gather data in the field.

8:00 AM—9:00 AM

Concord Room

(4b) Working With Town, State, and Federal Agencies on Lakefront Storm Water Management Regulations

Kevin Kelly

This presentation describes how the speaker, along with neighbors, and a Lake Association made their voices heard in the regulatory process of a lakefront subdivision - specifically, the engineering design of a large storm water management system. The speaker will relate his hands-on experiences with: The developer(s), Town Officials, NH Department of Environmental Services, NH Department of Transportation and the U.S. Environmental Protection Agency. Specific topics include: Storm Water

WORKSHOPS ★ THURSDAY, DECEMBER 5th

NHLSA 50th Annual Meeting & Equipment Show

Pollution Prevention Plan (SWPPP), Alteration of Terrain (AOT) Permit, Storm Water Engineering Design, Peer Engineering Reviews, Non-Point Source Pollution, Town Planning Board Policies and Procedures, The New Hampshire Right-to-Know Law, and the New Hampshire Shoreland Protection Act.

Kevin is a year-round resident of Lake Kanasatka, Moultonborough, NH, since 2015. Volunteer Water Quality Monitor on Lake Kanasatka since 1984. Retired from Massachusetts State Police in 2008 at the rank of Major, commanding Troop "A" - 6 Barracks in north-eastern Massachusetts. Massachusetts Undersecretary of Public Safety (temporary assignment from 2002-2004). Academy instructor for state and municipal police recruits, as needed from 1988-1999. Patrol Trooper and Field Training Officer 1982-1995.



9:00 AM - 10:00 AM

Concord Room

(5) Surveying Olympics

Refereed by the Young Surveyors Group

For our 50th Anniversary we're encouraging you to dust off your running shoes and limber up in order to compete head-to-head with friends and colleagues, some of whom you've spent countless hours in the field with and many who you may have not had the chance to survey with in the past. The Olympics will consist of several events that you can complete at your leisure during Thursday of the event or all at once if you're feeling ambitious. The events will be set up adjacent to the exhibit hall and will consist of many of your day-to-day activities such as timed chain throwing, timed backsight setup, eyeball level estimations, a pacing routine, and a much anticipated cone toss.

Though these events won't literally put you head-to-head with the competition and your running shoes aren't required (business attire will suffice and points won't be deducted for breaking a sweat,) the Young Surveyors will keep score cards for each individual who wishes to participate and as is tradition in the Olympics, medals will be awarded to the highest performers among us.

8:00 AM - 4:00 PM

Constitution Room and
Pre-function area

**Photo of the Young Surveyors Group
at the summit of Mount Tecumseh
(their summer outing)**

(6) Reality Capture Technologies

**Bruce Marquis, PLS
Jim Bosworth**

Topics to cover

- Types of terrestrial laser scanners and the benefits
- Key features to consider
- Field methodology
- Registration methods
- Scanning for surveying
 - ◇ Benefits
 - ◇ Project types
 - ◇ Integrated surveying
- Entering new markets
- Research
- Building a business plan
 - ◇ Project Examples - ROI
 - ◇ Surveying specific examples
 - ◇ Nontraditional examples
 - ◇ Potential for using mobile LiDAR collection in a project

Bruce has been a member of the surveying industry for 33 years and a Practicing Professional Land Surveyor for 24 years, holding licenses in Maine and Utah. He's a graduate of the Civil Technology program of the Thompson School of Applied Science. Bruce was awarded first terrestrial laser scanning project 10 years ago, scanning a Dry dock at the Portsmouth Naval shipyard. Since that point the use of reality capture became an integral part of many successful projects; capturing bridges, roadways, steel infrastructure, boats, buildings, utilities, and surgery rooms. He has been serving as the Northeast Reality Capture Consultant for Leica Geosystems for the last two years.



Exhibitor Jim Bosworth from Maine Technical Source will assist Bruce in his presentation.

9:00 AM - 12:00 PM

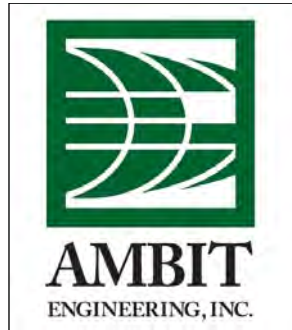
Capital Room



WORKSHOPS & BUSINESS MEETING ★ THURSDAY, DECEMBER 5th

NHLSA 50th Annual Meeting & Equipment Show

Morning Break



(7) Litigation by the Lake—Who Owns the Road?

Paul J. Alfano, Esq.

This presentation traces the chain of title to a strip land contained within an 1889 subdivision along Lake Winnepesaukee in Alton. While conveyance of land abutting a road carries the presumption of ownership to the middle of the road, this presumption may be **rebutted**. **Paul's presentation contains several good** examples of the sorts of things tending to rebut the presumption. The history of the property is quite colorful, culminating in a futile attempt to create fee title from nothing with a hastily prepared deed and a quick dash to the bank to have the signature notarized.

Paul is a recognized authority on New Hampshire road law, including paper streets, discontinuances and ownership disputes. He has written leading articles on the subject and delivered numerous lectures over the past thirty years, and maintains a steady stream of blogs and shorter articles on these topics. His law firm's website is a rich source of information on public and private roads.



Paul also represents individuals and businesses in other aspects of real estate law, including commercial, industrial and mixed-use site development, sales and purchase transactions, lease negotiation and enforcement, condominium and subdivision creation and management, local planning and zoning board approval, financing transactions, and tax abatements.

Along the way, Paul has served as Legal Counsel to the New Hampshire State Senate, a director of the United Way of Greater Manchester, and Chairman of the Long-Range Planning Committee for the New Hampshire Bar Association.

Paul is admitted to practice in New Hampshire in both the federal and state courts. He is a graduate of Boston University School of Law and Harvard College. His law firm, Alfano Law Office, PLLC, is located in Concord, New Hampshire.

10:00 AM - 12:00 PM

Concord Room

Lunch



NHLSA ANNUAL BUSINESS MEETING, INSTALLATION CEREMONY

The New Hampshire Land Surveyors Association will be conducting its final business of the year at our 50th Annual Meeting. Everyone is invited to attend as important agenda items will be addressed. Business includes an update to the website, proposed bylaw amendments, and the NSPS dues. Awards will be presented, and we will install the slate of officers for 2020.

J. Corey Colwell, LLS
President

12:30 PM - 2:00 PM

Salon A/B/C

(8) Mock Planning Board

Eric C. Mitchell, LLS

This session is meant to be a simulation of a Planning Board Public Hearing to be both informative and entertaining. Municipal boards have an important job to do and as surveyors, we participate in the process regularly. NHLSA volunteers will participate in the development of the format as well as serve as board members and abutters. The Planning Board Chairman will coordinate and conduct the hearing as well as encouraging discussion from the audience. We will present one or two cases, such as a frontage lot subdivision and a proposed development with road improvements and state permits. We may also have input from our members acting as members of town staff or committees, such as conservation commission, public works or regional planning.

WORKSHOPS ★ THURSDAY, DECEMBER 5th

NHLSA 50th Annual Meeting & Equipment Show

Eric is the President of Eric C. Mitchell & Associates, Inc. (**ECM**), a Land Survey, Engineering and Land Planning firm in Bedford, New Hampshire. **ECM** has been performing land surveys, subdivisions, commercial site plans and environmental permitting since 1982. Eric has a BS in Civil Engineering from the University of New Hampshire and is a Licensed Land Surveyor, Certified Wetlands Scientist and Licensed Septic System Designer in the State of New Hampshire. He is currently the President Elect and a past Director of the New Hampshire Land Surveyor Association.



2:00 PM - 4:00 PM

Salon C

(9a) Land Ethic for Tomorrow (LEFT) Award Presentation

Stanley Prescott, LLS
Nominator

The Land Ethic for Tomorrow award is to recognize an individual, company, or government agency who has made unique and significant land-use decisions based upon accurate and complete land information gathered and used in an advanced and innovative manner.

Each year, the LEFT award is presented during the **Annual Business Meeting**, however there usually isn't enough time dedicated to give the appropriate time for a presentation.

Being our 50th anniversary, the 50th Committee made room in the program to dedicate a room for a one hour session to come learn what for, and to whom this next award is presented to.

2:00 PM—3:00 PM

Capital Room

Afternoon Break



(9b) Rangeways—Time for Resolution

Panel includes: Sue Weeks, Researcher, Tuftonboro; Nate Amsden, Eliot, ME (ME RLS); Elaine Clow, Author, Boscawen; Hank Amsden, NHLSA member, Concord

Recent rangeway litigation shows the futility of hopes that their legal status will be resolved by the court. Failure to settle the title question means endless, expensive legal wrangling whenever the topic appears on our surveys. The GENERAL COURT, the New Hampshire legislature, has full power to:

1. Declare the legal status of remaining rangeways.
2. Provide a mechanism for their disposition.

Of equal concern to us is the burgeoning liability which festers for our past failures to show rangeways on certified plans. Properly presented, the Legislature could also provide statutory relief:

3. Limit liability via a statement to appear on our plans and/or a provision assigning a post-statute date on which liability for failure to display rangeways will begin to accrue.

There are excellent minds in the legislature for such subjects, who, properly approached by a select committee from NHLSA (and others), will work to see this problem put to rest.

3:00 PM - 4:00 PM

Capital Room

(10) NSPS Overview

John Chagnon, LLS
NSPS Director

NHLSA is an Affiliate member of the National Society of Professional Surveyor (NSPS). NSPS is the voice of the professional surveying community in the United States and its territories. NSPS has a strong constituency base through which it communicates directly with lawmakers, agencies, and regulators at both the national and state levels. NSPS monitors and comments on legislation, regulation, and policies that have potential impact on the activities of its members and their clients, and collaborates with a multitude of other organizations within the geospatial community on issues of mutual interest.

This presentation will provide an overview of NSPS and the many benefits afforded the members. From programs as varied as the Survey Technician, Flood Plain, Hydrographer and Federal Land Survey Certifications to outreach such as Trig Star, Congressional

WORKSHOPS & SPECIAL EVENTS ★ THURSDAY, DECEMBER 5th

NHLSA 50th Annual Meeting & Equipment Show

Lobbying, and Associations with Governmental and Non-Governmental Organizations. NSPS represents Land Surveyors. The various resources NSPS makes available to Land Surveyors will be presented, including the direct monetary member benefits.

On an educational note NSPS recently assisted the State of Louisiana in an important Land Title case as a friend of the Court providing important testimony regarding the role of surveys in determining property boundaries. This was / and is an educational experience of importance to your practice.

John previously served as NSPS Governor and represented NHLSA during the initial transformative discussions regarding the NSPS split from ACSM. John has been an ACSM / NSPS member since 1985 and started an ACSM Student Chapter while in college. John has served as an NSPS Trig Star sponsor since 1991 and previously served as Trig Star National Program Chair. John is the principle and owner of Ambit Engineering, founded in 1988. He currently teaches the Legal Aspects class at the Thompson School where he graduated, luckily, during Bob Moynihan's tenure. John is currently the NSPS Director.



2:00 PM - 4:00 PM

Concord Room

NHLSA COMMITTEE MEETINGS

For those who wish to hold a committee meeting, I welcome you the opportunity to meet with your committee members for this brief period before the Social and Auction kick into gear.

4:00 PM - 4:30 PM

Salon C

Reception



NHLSA RECEPTION WITH HORS D'OEUVRES, CASH BAR, & NHLSF BENEFIT AUCTION

Now that you've spent a day of brain drain and acquired half of your CEUs for this two-day anniversary, it's time to sit back and relax with a beverage of your liking and the company of your choice and join in some fun with none other than the one and only Terry Eldredge, auctioneer extraordinaire.

The New Hampshire Land Surveyors Foundation is accepting donations, small, large, or in between. We'd like to thank all of the members for donating towards last year's raffles and auction for the 50th Anniversary Celebration. This year, the proceeds will benefit the Scholarship Fund. We can always expect a wide variety of items that will interest all banquet attendees, members, and guests alike. If you have any items that you would like to donate to the auction, please fill out the enclosed auction form and email it to Barbara ahead of time or drop it off with the item at the registration desk.

And, for the winning Map Contest entries, don't forget to stop by the registration table to claim your drink ticket!



If elected, I will be your new President for the first of the next 50 years. I invite you to join me for our evening activities. Besides the live auction, our reception, with hors d'oeuvres and cash bar, will again feature our 50/50 raffle.

Steve Ferguson, Vice President, and I will be canvassing the room selling tickets throughout Thursday and Friday. The winning ticket will be drawn Friday during the afternoon break. Since the 50/50 raffle extends through two days, you need not be present to win, just write your name on the ticket you drop. The winning ticket holder will receive half of the proceeds with the remaining half donated to the 50th Anniversary Celebration.

50/50

Background music provided by DJ Bobby Freedom.

Eric C. Mitchell LLS
President-Elect

4:00 PM - 6:00 PM

**Pre-function Area &
State Rooms**

SILENT AUCTION

**The silent auction is back!
See following page for details.
(Pre-function area)**

SPECIAL EVENTS ★ THURSDAY, DECEMBER 5th ★ FRIDAY, DECEMBER 6th

NHLA 50th Annual Meeting & Equipment Show

AWARDS BANQUET DJ BOBBY FREEDOM & KARAOKE

We hope you'll stick around for the evening Awards Banquet and more fun with DJ Bobby Freedom and join in and sing karaoke to some of your favorite songs.

We'll end the evening with a door prize. Two-day registrants will receive a ticket for the door prize.

Steve Ferguson, LLS
Vice President

6:00 PM - 9:00 PM

**Pre-function Area &
State Rooms**

DJ BOBBY FREEDOM & KARAOKE

DJ Bobby Freedom began his Disc Jockey career back in 1986 while working for a small DJ Service in Massachusetts where he gained the skills of mixing music.

He started out at clubs, taking requests and getting people dancing with his mixes. Soon he performed at parties and events on his own. Right around the same time in the late 80's, he was a lead singer in a few rock bands and played instruments such as harmonica and guitar, eventually playing gigs as a classic rock solo entertainer and in four piece bands/ trios, but the DJ work kept providing opportunities.



Bobby attended the Northeast Broadcasting School in Boston and studied Recording Arts, graduating in 1993. He then went on to work in radio, becoming an on-air DJ at a couple of stations as a talk show host. (WNBZ & WROL) He produced two talk shows and recorded and wrote all the programming material.

As a musician & producer, he recorded and engineered three albums and is still active with both his live music and radio shows today. He established Bobby Freedom Entertainment in 2008 and has been a wedding DJ in New Hampshire for over ten years.

Bobby will be looking to you, the members and guests, for song choice. Write down your favorite Karaoke song on the registration form.



The Silent Auction will open during lunchtime on Thursday and close following the Friday afternoon break. When you recycle your badge at the end of the day, check out the list of lucky recipients. If you can't stay for the entire event, please consider making arrangements for picking up your winning item.

If you have an item for the auction but will not be able to attend, please contact Barbara Cormier or Steve Ferguson and they will make sure it gets on the auction block.

Thursday December 5 - Friday, December 6

Friday's Sponsors

Past Presidents Breakfast



PAST PRESIDENTS BREAKFAST

Corey Colwell, NHLA's 50th President and Incoming Chair, welcomes all past presidents to attend and participate in the discussion on the following topics:

- ◇ Report on discretionary fund
- ◇ Participation of Past Presidents in the 50th Anniversary
- ◇ Brief discussion on the Young Surveyors Group across the New England Region

Please contact President Colwell prior to December 1st regarding any topics for discussion at the breakfast.

7:30 AM - 9:00 AM

Constitution Room

WORKSHOPS ★ FRIDAY, DECEMBER 6th

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(11) 50 Years of Surveying Computing Technology

Dustin Smith

This session will highlight a video showing where we started, what it cost, and how computing and automation changed the profession over time. A ride from the wild west of technology to standardization and dominance of the field to finish computing model. It's been a long and sometimes bumpy ride.

Dusty got out of the Navy in 1966 and took a job repairing typewriters and calculators with a local office machine dealer in Nashua... they sold mostly products manufactured by Olivetti, an Italian company that had recently bought out Underwood, an American calculator and typewriter manufacturer. Not long after I started there, Olivetti introduced the Programma 101, which many consider to be the first "personal computer"... one can certainly argue that it was the prototype for what was coming.



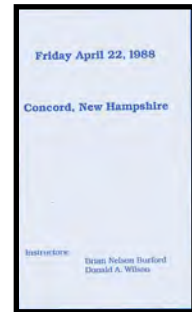
One of the first program sets written for the P-101 was for surveying, which I knew virtually nothing about. But... since I had a math background I got to go to training on this new technology, and it was a life changer. The P-101 quickly became the dominant computational device in land surveyors' offices over the next 3 years and launched what became a 30 year run for me with the land surveying community. I got to write programs that solved real problems, to meet and spend time with what were to me the most interesting group of people I'd ever spent time with... part historian, part technologist, part lawyer, part diplomat, and always civically engaged in their communities. I have always considered myself to be the luckiest guy in the world as far as work goes... spending time solving interesting problems for interesting people who lived in interesting places and telling interesting stories.... And getting paid for it!!!. I never had many bad days... not really. I created the Benchmark program in the late 70s, and it rode the wave of a whole new round of technology platforms, notably the Apple 2 and the IBM PC right through the 80s. In 1984, NHLSA saw fit to award me with a lifetime honorary membership in the organization... the award still hangs on my office wall and means a lot to me. In the mid-80s I got to be on the bleeding edge of bringing CAD technology to the surveying community. We continued to be active with the technology and the community thru the late 90s. Today I am active in other technology areas but I keep in touch with a lot of surveying community people who became and remain friends. A bunch of us are "ageing out" of the community now but it is still fun to spend a little time at the annual meeting keeping an eye on what's going on with the profession and visiting with old friends.

(12) 1988 Research Seminar Video

Steven Ferguson, LLS
Video Host

Let's go back—waaaaaaay back to 1988 to a video recording from one of the first Case Studies seminars.

Some of you may recall this Survey Research Seminar, but do you remember where it was held? We hope you'll take some time to view this seminar presented by Brian Nelson Burford and Donald A. Wilson.



8:00 AM - 10:00 AM

Capital Room

(13) Overview of NGS Products and Services

Dan Martin, LS

There are vast amounts of information and resources on NGS' Website. It is not uncommon for me to receive calls or emails asking for information that simply results in me pointing folks to a particular web page or tool. This workshop is designed to familiarize participants with many of the resources and tools that are available on the NGS web, and will provide some instruction in their use. Some of the topics we will discuss are: State Plane Coordinates, GPS on BM for the new vertical transformation tool, NGS Conversion and Transformation tool (NCAT), Geoid and vertical datum transformations, NGS Webinar Series and on-line lessons, NGSMAP, CORS and OPUS products, and more!

Dan works for the National Geodetic Survey and has been the Northeast Regional Geodetic Advisor since 2015. As the Regional Advisor, he instructs local surveyors, state and municipal agencies, and the geospatial community at large, on how to use and preserve the National Spatial Reference System, and provides liaison between the National Geodetic Survey and the States of ME, NH, VT, MA, CT, RI, NY, and NJ, as well as other federal agencies. He worked in the Route Survey and Geodetic Survey sections of the Vermont Agency of Transportation from 1988 through 2003, and held the position of Geodetic Program Supervisor for the Agency from 1999 through 2003. In 2003 Dan began his career with the National Geodetic Survey as the Vermont State Geodetic Advisor. Dan is a Past President and Fellow Member of the American Association for Geodetic Surveying (AAGS), he is also a member of the Vermont Society of Land Surveyors and the New Hampshire Land Surveyors Association.



8:00 AM - 11:00 AM

Salon C

8:00 AM - 10:00 AM

Concord Room

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(14) The Redefined Role of Technicians in a Modern Surveying Business

A. Richard Vannozzi, MS, PLS

There was a time, not long ago when a licensed Land Surveyor could perform all the technical duties involved in the successful completion of any surveying project. As the use of technology has exploded, and our arsenal of tools has expanded in both quantity and complexity, those simpler days are now part of our history, and not the future. This seminar will examine what has happened in the surveying profession in the last few decades as a result of technology, and how **this has fundamentally changed the "jack of all trades" model of operation. A licensee can't personally keep up with the changes in technology anymore. That is unrealistic. At the same time the technician can't expand into the role of a licensee without letting go of some technological prowess and gaining significant education. This seminar is designed to look at ways our profession, its firms, and our individual licensees can navigate this growing distinction in the knowledge bases of its technicians and its licensees and remain true to the overarching responsibility to protect the public. Attendees will leave with some concrete tools for restructuring how personnel and technology are integrated in their organization...whether that is a 2-person organization or one that is much larger.**

Mr. Vannozzi is a graduate of the University of Maine where he earned a BS in Forestry with high honors and concentrations in both forest management and surveying in 1984 and an MS in Forestry (with a surveying emphasis) in 2006. From 2007-2017, Mr. Vannozzi completed an additional 40 credits of graduate course work in geomatics and adult education while enrolled in the doctoral program in Natural Resources at the University of Connecticut.



Mr. Vannozzi has taught surveying across New England since 2003. From 2003-2007 Mr. Vannozzi taught numerous surveying related courses at the Wentworth Institute of Technology in both the day undergraduate programs and the evening programs. While at the University of Connecticut from 2007-2009 he taught surveying in their Civil Engineering program and from 2009-2015 he was an Assistant Professor in the Civil Technology program in the Thompson School of Applied Science at the University of New Hampshire. He returned to Wentworth in 2016 as an Assistant Professor in their Civil Engineering program where he taught geomatics, surveying and related courses through 2019, when he came to the University of Maine.

Mr. Vannozzi joined the faculty of the Surveying Engineering Technology program at The University of Maine in the Fall of 2019 where he teaches courses across the curriculum both in the traditional classroom and on-line.

He is registered as a Professional Land Surveyor in Massachusetts. Before reorienting his career to focus on surveying education in 2003, Mr. Vannozzi worked in private practice for 19 years, eight of which was as the owner of his own land surveying company where he specialized in ancient boundary retracement, boundary dispute resolution, and title, boundary and zoning litigation.

Mr. Vannozzi maintains a small consulting practice that specializes in complex boundary, title and zoning matters for select clients including attorneys and other Professional Land Surveyors.

Mr. Vannozzi was the 2012 recipient of ACSM's Earle J. Fennell Award for distinguished educational contributions to ACSM and the surveying and mapping profession. He is a Past-President of the Massachusetts Association of Land Surveyors and Civil Engineers (MALSCE) and, in 1998, was recognized as MALSCE's Surveyor of the Year.

He served on the National Society of Professional Surveyors (NSPS) Board of Directors representing Massachusetts from 2008-2019, when he moved to Maine. He also serves on the NSPS Education Committee where he coordinates their National Student Competition. In 2017, Mr. Vannozzi was elected a Fellow of NSPS.

8:00 AM - 11:00 AM

Merrimack Room

(15) Surveying in Floodplains

Jennifer Gilbert Senior Planner, NH Office of Strategic Initiatives Samara Ebinger, NH OSI

Jennifer & Samara will provide an overview of the National Flood Insurance Program, and information, resources, and tips for surveyors and engineers on using and revising the floodplain maps through the FEMA Letter of Map Change process, and completing the FEMA Elevation Certificate.

Jennifer has been New Hampshire's state coordinator for FEMA's National Flood Insurance Program since 2005. For six years prior, Jennifer worked as an environmental planner for engineering consulting firms preparing environmental reports and conducting public outreach activities for both highway and airport projects. Jennifer has a B.S. in Environmental Planning and Environmental Science and a M.A. in Urban and Regional Planning. Jennifer is a Certified Floodplain Manager (CFM®) and an Associate in National Flood Insurance (ANFI™).



8:00 AM - 10:00 AM

Pierce Room

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(16) North East Surveying Societies (NESS) Roundtable

J. Corey Colwell, LLS Moderator

Join me and other North East state Presidents for an informal NESS meeting to continue our ongoing dialogue and initiatives. Regional issues such as metrics on membership and young surveyor groups are key to the success of all state societies and the NSPS.



We will follow-up on outstanding topics from the last meetings, including for example, the need for an official repository for NESS documents.

Please feel free to contact me prior to the meeting at coreycolwell@nhlsa.org.

9:00 AM - 10:00 AM

Pierce Room

(17) 50 Years of History and Memories

Mark C. Stevens, LLS Video Host

There won't be a speaker at this component of the Annual, but there will be a room set up with a projector and screen displaying a continuous loop of old photos from NHLSA's first 50 years. Drop by in between classes and see how many colleagues you recognize from the earlier days, and how much we've all changed, or not changed, over the years.



See following page for some candid photos of members over the past few years.

10:00 AM - 12:00 PM

Capital Room

Morning Break



(18) CAD Tips and Tricks for Better Efficiency

Rick Ladd

Come learn about GIS, Data Collection, and Drone tools from CADNET and Carlson Software. Topics will include creating surfaces and contours from drone photogrammetry, Importing data from GIS systems in CAD software, and data collection using SurvPC and connections to GIS systems.

Rick is the owner of CADNET Services, LLP, a CAD and IT consulting firm located in Manchester NH. Rick Ladd has been a member of NHLSA in one capacity or another since 1988, and CADNET is currently a sustaining member.



10:00 AM - 12:00 PM

Concord Room

(19) Subsurface Systems Bureau Update

Robert A. Tardif, P.E., Administrator Subsurface Systems Bureau

Besides the discussion on the recent changes to the Subsurface System Bureau's rules. Rob's presentation will also include a discussion on Lot Line Adjustments.

See page 20 for credits awarded for Subsurface Systems Bureau continuing education requirements for permitted sewage disposal system designers and installers.

Rob graduated from the State University of New York at Buffalo with a B.S. in Civil Engineering and received his P.E. license in 1999. He started working for the New Hampshire Department of Environmental Services in 1992. Rob initially worked in Hazardous Waste Compliance (compliance work), then Solid Waste Management (permitting), and Residuals Management (permitting). Rob started in the Subsurface Systems Bureau in 2002 as the Construction Section supervisor. In June of 2009, Rob took over the duties of Subsurface Systems Bureau administrator.



10:00 AM - 12:00 PM

Pierce Room

Reminder: Permitted Sewage Disposal System Designers & Installers and Natural Scientists—to receive credit, you must note your license number on the sign in/out sheets.

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(20) NESW—New England Surveying Women Roundtable

Wendy Pelletier, LLS & Cynthia Boisvert, LLS Moderators

Join us as we discuss topics relevant to being a woman in a predominantly male field. This is a group that was formed three years ago in the hopes of getting more of us together in one place from NH and other New England states.

We would like to set some goals this year and formalize a mission for our group, and discuss becoming involved in STEM schools focusing on introducing young women to our profession.

Wendy has been in the surveying field since 1984 when she worked for the City of Auburn, Maine during her first summer off from college. After being in the field for a week on the survey crew, doing topo of a landfill of all things, she decided to change her major from Architecture to Civil Engineering. She graduated from Vermont Technical College with an Associate's Degree in Civil Engineering Technology in 1986. She went on to work in septic design in Shelburne, Vermont before moving to Keene, New Hampshire to work for C.T. Male Associates. Wendy moved back to Maine to work in engineering for 6 years before coming back to Keene. Wendy worked for David Mann and Richard Drew while preparing for the SIT and licensing exams. She became licensed in 2009. She is currently the President and owner of Cardinal Surveying & Land Planning in Keene.



Wendy has been the Treasurer of NHLSA since 2014.

Wendy has done surveying demonstrations and classes with the local Boy Scouts, Winchester Elementary School, Gilsum STEM Academy, Marlow Perkins School, the Waldorf High School Trig class and most recently spent a week with a horticulture class at Keene High School introducing 18 students to surveying, all in the hopes of sparking interest in the younger generation to follow in our foot steps in a great career.

Cynthia has been a NH Licensed Land Surveyor for 36 years, beginning her survey career in North Conway, NH working for HEB Engineers and Burnell Land Surveying. Since 1980 she has been working in southern NH. Six years as VP of Survey Services at Cuoco & Cormier, Inc. and currently as President of Arago Land Consulting, LLC, located in Amherst NH.



Cynthia has served the NH Land Surveyors Association, as President, Vice President, President Elect, Past President and Publications Director. She has a BS in

Environmental Design from the University of Massachusetts, Amherst. Specific to the topic of Women in surveying, her first day on a field crew was interesting.

"One fall day, I was asked to work in the field. Willing to try anything, I said yes. I did not know that the field crew's intent with newbies, (male or female!) was to break them. Too bad that it was a cool crisp New England day, and we were running levels along the Ellis River in Jackson. At the end of the day, we turned to see a buck strolling down the center of the river. I was hooked."

10:00 AM - 11:00 AM

Constitution Room

(21) Office of Professional Licensure and Certification

William J. Doucet, LLS Joseph M. Wichert, LLS

A discussion between Association officers, Board of Licensure members and surveyors on issues affecting the surveying profession locally and nationwide, to include the impact of new technology and trends, possible changes or updates in the current technical standards or rules. A follow up to the discussion started last year at the Case Studies seminar which also included updating the current NHLSA ethics and standards.

Bill is the Owner/President of Doucet Survey and is licensed in NH, ME, MA & CT. He is the current Chair of the NH Land Surveyors Board of Licensure and serves on the Planning Board for the Town of Newmarket.



Joe has been self-employed as the principal of Joseph M. Wichert, L.L.S., Inc. since 1991. He is a long time member of NHLSA, the past chairman of the Alternative Dispute Resolution Committee and a past member of the Professional Conduct and Practice Committee. In 2015, he was appointed to the New Hampshire Board of Licensure for Land Surveyors. A lifelong resident of Manchester, he has also been active in his community. He is married with 2 sons who have both worked in the family business.

11:00 AM - 12:00 PM

Salon C

Schedule Subject to Change -
Updates will be posted
in the Bulletin Board

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(22) Apprenticeship as a Workforce Strategy

Emily Zeien
Anne Banks

Join us to learn more about how registered apprenticeship can be a valuable tool for solving the land surveying industry's workforce challenges. No longer just for the traditional trades, registered apprenticeship is a proven model that combines classroom instruction, mentorship, and on-the-job training to help businesses ensure they have the skilled workforce they need. This seminar will provide attendees with an overview of the components of registered apprenticeship programs and how they benefit both employers and career seekers. Additionally, information will be shared about the Community College System of NH's grant-funded ApprenticeshipNH initiative which is focused on develop apprenticeship programs for employers in high-demand fields such as construction, manufacturing, and healthcare. ApprenticeshipNH offers a variety of resources and supports to employers that focuses on meeting the specific hiring and training needs of the company and industry.

Emily is the ApprenticeshipNH Grant Manager for the Community College System of New Hampshire. ApprenticeshipNH is a grant-funded initiative that helps to connect employers to apprenticeship programs as a proven solution to hiring and retaining highly skilled employees. In her role, Emily oversees a 2-person team and manages day-to-day grant operations including federal reporting, marketing and communications, and administration of the program's 2-million-dollar budget. Emily has a Master's degree in Public Administration from the UNH Carsey School and has a background in program and grant management in both the public and nonprofit sectors.



In her past work, Emily managed a federally-grant funded AmeriCorps program and advised agencies that served as placement sites for AmeriCorps members to ensure compliance. While working for the NH-based nonprofit Families in Transition-New Horizons, Emily oversaw a robust system of volunteer programs, and worked alongside senior leadership and board of directors to cultivate donor relations and support the agency's fundraising goals.

Anne is the Workforce Development Administrator for the Community College System of NH. She is the Statewide Director for the WorkReadyNH program and works closely with the ApprenticeshipNH team to build and expand Registered Apprenticeships throughout New Hampshire. Anne is involved in many workforce development initiatives across the state



including the Sector Partnership Initiative and Inter-agency Business Team.

Before joining The Community College System, she worked as an educator for Pittsfield Middle High School. During her time as an educator, she helped guide students through career exploration and developed credit bearing Extended Learning Opportunities. She also owned and operated a local health club and has held various management positions throughout her career. Anne has a passion for blending her experience in business and education to help develop a strong workforce for the state of NH.

11:00 AM - 12:00 PM

Merrimack Room

(23) Young Surveyors Roundtable

Eric Salovitch, LSIT
Chair

The Young Surveyors came into existence during the summer of 2018. The group began regular meetings in January 2019 and continue to meet the second Tuesday of every month. The Young Surveyor meetings are designed to network with peers developing relationships amongst the younger surveying community. Being a part of the Young Surveyors is a step towards getting involved within NHLSA as well as guaranteeing a bright future for our profession.

Join us as we discuss topics relevant to being a Young Surveyor in our State. With the current age structure of NHLSA we are lacking with Young Surveyors involvement. This is a group that has been meeting regularly, on a monthly basis, in hopes of getting more of us together in one place to discuss some of the issues Young Surveyors are faced with. We will use this opportunity to set some goals for moving forward while tackling some of the issues discussed.

Eric graduated from the Thompson School at UNH with his Associates in Surveying and Mapping in 2010. Since then he has been practicing as an LSIT in the Seacoast area. With goals to become a licensed Land Surveyor he prides himself on technical standards as well as upcoming technology in the surveying industry. Eric has been an active part of the founding of New Hampshire's Young Surveyors and has taken steps towards becoming involved at the National level.



11:00 AM - 12:00 PM

Constitution Room

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Lunch



(24) Exclusive Viewing of Exhibit Hall

This is a great opportunity to see some of the latest products and services the vendors have to offer. You will have the opportunity to see demonstrations, ask questions and perhaps make a purchase or two. You just may find that key piece of information, a helpful hint, or some new equipment that you were looking for to help you out with that tough project back at the office.

No need to get your vendor card stamped this year, however we encourage you to visit all exhibitors during this time. See page 22 for a list of reserved exhibitors.

12:00 PM - 2:00 PM

Salon A/B

Thank You

2019 Exhibitors

(25) Young Surveyor Olympics Review and Forum

This open forum discussion will review the Surveyor Olympics and how they came to be. Discussion will lead from how and why the event was chosen to how the event correlates to everyday life as a surveyor. Participation in the Survey Olympics is preferred but not required. Come prepared to share your thoughts on the events, how they relate to you, and the challenges you experienced when beginning your career as a Land Surveyor.

See the Surveyor Olympics description for additional information.

2:00 PM - 4:00 PM

Salon C

(26) Map Contest Showcase

Last year, you may have noticed that we were able to present on video not only the winning maps, but all the maps submitted for the contest. They were viewed in the Exhibit Hall. This year, stop by to view this year's map entries.

There are six categories for the Map Contest:

- ◇ Subdivision Plats
- ◇ Boundary/Cadastral Maps
- ◇ Topographic Maps
- ◇ ALTA/NSPS Maps
- ◇ Miscellaneous Maps
- ◇ Color Presentation Maps

2:00 PM - 4:00 PM

Capital Room

(27) Subsurface Utility Mapping: A Historical Perspective of Land Surveyors Role Mapping Underground

Michael A. Twohig

DGT Associate SME for Underground Mapping

Introduction by Michael A. Clifford, DGT Associate Principal in Charge

One of the most significant challenges facing any design team today is how to map the underground environment with the same Standard of Care and precision as the above ground built environment. While many assume that the national "One Call" systems in each state play an important role in mapping utilities, it is frequently misunderstood that the One Call System was only intended to perform a Damage Prevention Role and have little or no role in mapping the underground for designers.

For the past 30 years, Subsurface Utility Mapping (more commonly known as Subsurface Utility Engineering SUE by all DOT's) professionals have provided an engineering discipline dedicated to locating and mapping the buried facilities and it has been proven to be one of the safest methods to locate our utility lines both on public and privately funded projects. SUM professionals across the world utilize the latest geophysical technologies, the best of survey practices and mapping applications to locate and identify the full extent of the buried infrastructure in the design and planning stage of a project. However, for the past three decades, SUM services have been predominately a boots-on-the-ground locating and mapping service which is quickly becoming incompatible with worker Health and Safety Concerns, tighter survey budgets and diminished project design schedules.

With the advent of modern mobile LiDAR systems, the future of 3D mapping has been clear; integrate all the above and below ground remote sensing systems into a single mapping platform. This presentation will focus on emerging technologies that will change the way we

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locate, map, store and present subsurface facilities information including a look at Risk Management and Utility Surveying Best Practices from around the Globe.

Michael is a Subject Matter Expert in the field of Subsurface Utility Mapping (SUM). Michael has over thirty years of industry experience including a focus on the integration of traditional utility locating procedures with Land Survey **Best Practices. Michael's focus is** on Subsurface Utility Locating, 3D Utility mapping and Subsurface Utility Damage Prevention programs for public and private firms across the globe.



Michael is currently developing Multi-Sensor Mobile Mapping platforms using the next generation of Multi-Channel, Multi-Frequency Ground Penetrating Radar (GPR) system for the Subsurface Utility Mapping and void detection industry. As a SUM practitioner Michael has worked on significant projects in the US, Australia, India, and Europe. Over the past 34 years, he has authored over 40 articles relating to Utility mapping, Underground Damage Prevention and Utility Industry Best Practices and he is a frequent speaker at International conferences such as the Common Ground Alliance CGA, SPAR, Hexagon and the international Lidar conference ILMF. Mr. Twohig has also presented SUM Best Practices at Military, Transportation, Commercial and GITA conferences. One of Michael's greatest achievements is the advancement and development and implementation of new 3-Dimensional deliverables for Geospatial projects, integrating LiDAR, utility locating systems, Ground Penetrating Radar (GPR), Infrared, Land Surveying, and multi-sensor platforms to provide high quality, reliable and accurate data for CAD, GIS and BIM delivery format.

2:00 PM - 4:00 PM

Concord Room

Afternoon Break



(28) Latest Trends in GNSS

Raymond Hintz

Come see proven results using some of the latest techniques in GNSS using permanent and virtual base stations. Study hardware options that exist in the GNSS arena that are not from the usual paths of survey equipment. Examine Low Distortion Projections derived from project based GNSS that make grid distance = ground distance in a geodetically rigorous fashion. Learn to optimize combined GNSS and traverse. Ask questions and get answers.

Raymond J. Hintz is a professor of surveying engineering technology at the University of Maine, and is program coordinator for the B.S. program in surveying engineering technology and is graduate coordinator for the Professional Science Masters in Engineering and Business surveying engineering concentration and the graduate certificate in surveying engineering. Prior to his present position from 1983 to 1987 he was an assistant professor of civil engineering at the University of Florida. He has B.S., M.S., and PhD degrees in Civil and Environmental Engineering with emphasis in surveying and photogrammetry from the University of Wisconsin. His research interests lie in automation of data collection and processing of surveying and photogrammetric information. Specific to the topic of interest, he has been responsible for development of the Cadastral Electronic Field Book, which enables automatic entry of measurement and automated field note information into Cadastral Measurement Management (CMM). At the heart of CMM is a least squares analysis driver for conventional survey measurements and GPS. Both products were developed for the Bureau of Land Management. Also in conjunction with the Bureau of Land Management, he has developed Geographic Measurement Management which is the approved tool for development of their Geographic Coordinate Data Base. GMM has a least squares analysis system which is designed for record survey information. A third project was partial responsibility for the development of Florida Department of Transportation's Electronic Field Book, data processing, and topographic data modeling software system. His primary involvement in this project was the Electronic Field Book Processor (EFBP) which is the least squares analysis engine for an automated link from raw data to final coordinates. EFBP has in recent times been adapted to also accept SDMS (AASHTO) format data and various vendor raw survey data formats. He was the primary researcher for survey software development for AASHTO which included support from the Maine Department of Transportation. He has published more than 50 articles in journal and conference proceedings, and is a registered land surveyor in the states of Maine and Florida.



2:00 PM - 4:00 PM

Merrimack Room

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(29) NH Shoreland Protection Act Updates Program Legislative Update & Overview of NHDES' New Wetlands Rules

Jay Aube & Sandra Crystall NH Department of Environmental Services

Jay will provide a brief refresher on the Shoreland Water Quality Protection (SWPQ) minimum standards and he'll discuss recent changes to the *Administrative Rules* as well.

Jay, NHDES Shoreland Program Outreach Coordinator, has worked for the Department for over 11 years, and, during this time, he has provided hundreds of presentations to a diverse group of stakeholders throughout the state. In addition to outreach, Jay assists the Land Resources Management Compliance Section. Jay graduated from Plymouth State University with a Bachelor of Science in Environmental Biology and Chemistry. Jay is a former public school science teacher, he's a member of the NH Association of Natural Resources Scientists, he serves as a member of his municipal Conservation Commission and he's the acting Chair of the Cocheco River Local Advisory Committee.



Sandy will provide an overview of the new wetland rules (effective 12/15/19). Learn about the new wetland permitting requirements, forms, and online tools.

Sandy returned to the DES Wetlands Bureau earlier this year, after working in the DES Watershed Management Bureau for 8-1/2 years managing several grants related to the development of wetland-specific water quality standards. Sandy also participated in EPA's National Wetland Condition Assessments in 2011 and 2016, where she was the NH team botanist and a regional trainer for the vegetation protocols. Sandy's prior 11 years as Senior Resources Manager, which included outreach responsibilities, was preceded by her tenure as a permitting inspector with the Bureau. Her non-DES experience includes positions with FEMA, EPA, and in consulting, covering areas such as flood insurance studies and mapping, evaluation of hazardous waste sites, environmental education, and other multidisciplinary environmental projects. Her academic background is in biology and environmental planning and she is a professional wetland scientist. She has been on her town's Planning Board for 17 years and the Conservation Commission, (for total of 10+ years).



2:00 PM - 4:00 PM

Pierce Room

(30) Basics of Photogrammetry and Map Accuracy Standards

Ted Covill

In this session, we will review the basics of the fundamentals and the photogrammetry science. Many surveying professionals use data sets that were created from photogrammetric mapping. This session is intended to familiarize the user with the history and methodology to create products such as planimetric, Digital Terrain Mapping and Orthophotography. Included in this session will be the use of ground control points, LiDAR derived data, aerotriangulation and the differences between photogrammetry and Structure from Motion (SfM).

In addition, this session will explore the various map accuracy standards. The U.S. Bureau of the Budget published the United States National Map Accuracy Standards in the 1940's. These standards were updated throughout the 1940's but remained unchanged until the 1990's when the American Society for Photogrammetry and Remote Sensing (ASPRS) published the ASPRS Accuracy Standards for Large-Scale Maps. The ASPRS Accuracy Standard was based more on real world positioning accuracy rather than an accuracy that is based on paper maps. Over the years new standards have been published by other agencies such as Federal Geodetic Data Committee, FEMA and the ASPRS to reflect the advances and introduction of new technologies. In 2014, the ASPRS introduced their new standard with the intent of condensing and overriding previous digital geospatial standards. These standards are often confusing and misunderstood. This presentation will attempt to explain the differences between the standards and how the standards relate to each other. We will discuss how the accuracy standards relate to the current data sets_x000D_being utilized in the geospatial community such as orthophotography, planimetric mapping, Digital Terrain Models (DTM), contours, LiDAR and Unmanned Aerial Systems (UAS, A.K.A. drones)

Ted is a Certified Photogrammetrist (ASPRS) with over 35 years' experience in the photogrammetric mapping field and has been with WSP (formerly Chas H. Sells) for over 30 years. He is also licensed as a Professional Photogrammetric Surveyor in the States of South Carolina, Virginia and Oregon. Ted experience includes large and small scale geospatial mapping projects involving Municipal, State/County, Transportation, Site Development, Aviation, Environmental, Energy, Transmission Corridors, Landfills and Mining. This experience includes the use of various Remote Sensing platforms including Aerial Imagery (black and white, color film, 4 band digital imagery) and LiDAR (aerial and mobile).



2:00 PM - 4:00 PM

Constitution Room

MEMORIES & DES CREDITS

NHLSA 50th Annual Meeting & Equipment Show



Some of our Past Presidents!

Thanks
for the
memories.

DEPARTMENT OF ENVIRONMENTAL SERVICES

Credit hours are based on the length of time—3 hour session receives 3 credits.

Session 4a—1 credit hour
Session 6—3 credit hours
Session 15—2 credit hours
Session 19—2 credit hours
Session 29—2 credit hours

Note: Natural Scientists credits are not pre-approved, use your best judgement when choosing your sessions.

Thank you
for
Attending

SPONSORS & MEALS

NHLSA 50th Annual Meeting & Equipment Show

Thursday Continental Breakfast
Thursday Morning Break
Thursday Lunch

Thursday Afternoon Break
Thursday Reception
Friday Continental Breakfast
Friday Morning Break
Friday Lunch
Friday Afternoon Break
Friday Past Presidents Breakfast
2020 Souvenir Calendar

Gifts & Giveaways
VIP Gifts ~ Eric Mitchell
50th Pens ~ Barb Cormier
50th Stickers ~ Bob & Lynn Smith

Eric C. Mitchell & Associates, Inc.
Ambit Engineering, Inc.
Arago Land Consultants, LLC
Meridian Land Services, Inc.
Dubois & King, Inc.
VHB, Inc.
Keystone Precision Instruments
Maine Technical Source
Doucet Survey, Inc.
GM2 Associates, Inc.
TFMoran, Inc.
Eastern Topographics

Thank You
to our Sponsors!

Meals

(Please note dietary restrictions on your registration form)

Thursday & Friday Continental Breakfast

Seasonal fruit display, individual Stonyfield yogurts, fresh baked assorted fruit breads, whole grain and gluten free toasting breads, Laurel Hill jellies, butter, freshly brewed coffee, decaffeinated coffee and a selection of fine teas

Thursday & Friday Mid-Morning Break

Whole fresh fruit, Kind Bars, freshly brewed coffee, decaffeinated coffee and a selection of fine teas

Thursday Afternoon Break

Vegetable crudité with tzatziki sauce and hummus, baked pita and bagel chips, whole fresh fruit, dried fruit and nuts, mixed berry smoothies, freshly brewed coffee, decaffeinated coffee and a selection of fine teas

Thursday Lunch Buffet

Pizza and Salad: Caesar salad hearts of romaine lettuce, shaved parmesan cheese, herbed croutons, Caesar dressing, Greek salad with roma tomatoes, English cucumbers, shallots, roasted red and yellow peppers, Kalamata olives, Feta cheese, red wine vinaigrette, buffalo mozzarella sliced roma tomato pizza on rustic crust, thin sliced pepperoni, buffalo mozzarella old world sauce on rustic crust, fire roasted vegetable pesto pizza on rustic crust, fresh baked cookies, brownies and miniature desserts, freshly brewed coffee, decaffeinated coffee and a selection of fine teas

Thursday Reception

Asian meatballs in sweet Thai chili sauce, maple bacon wrapped scallops, crudité of chilled vegetables served with assorted dips and spreads, domestic and imported cheese display served with crackers, nuts and fruit garnish

Banquet Choices

Grilled sliced angus sirloin, brandied shallot demi-glaze, **OR** Roasted chicken braciola, parmesan, prosciutto, toasted crumbs and marinara

Appetizer: Salad, hydroponic leafy greens, roma tomato, English cucumber and carrots, with framboise vinaigrette

Side dish: Whipped dauphine potato

Dessert: Black and white mousse cake

Friday Lunch Buffet

Chef's seasonal soup selection, hydroponic leafy greens with roma tomato, English cucumber and carrots, with framboise vinaigrette, fresh baked focaccia and country breads, chef's seasonal vegetable and potato selection, fresh baked cookies, brownies and miniature desserts, freshly brewed coffee, decaffeinated coffee and a selection of fine teas

Friday Afternoon Break

Freshly baked chocolate chip, oatmeal raisin, molasses, lemon and snickerdoodle cookies, assorted Coca-Cola soft drinks

EXHIBITORS

NHLSA 50th Annual Meeting & Equipment Show

SALON A/B

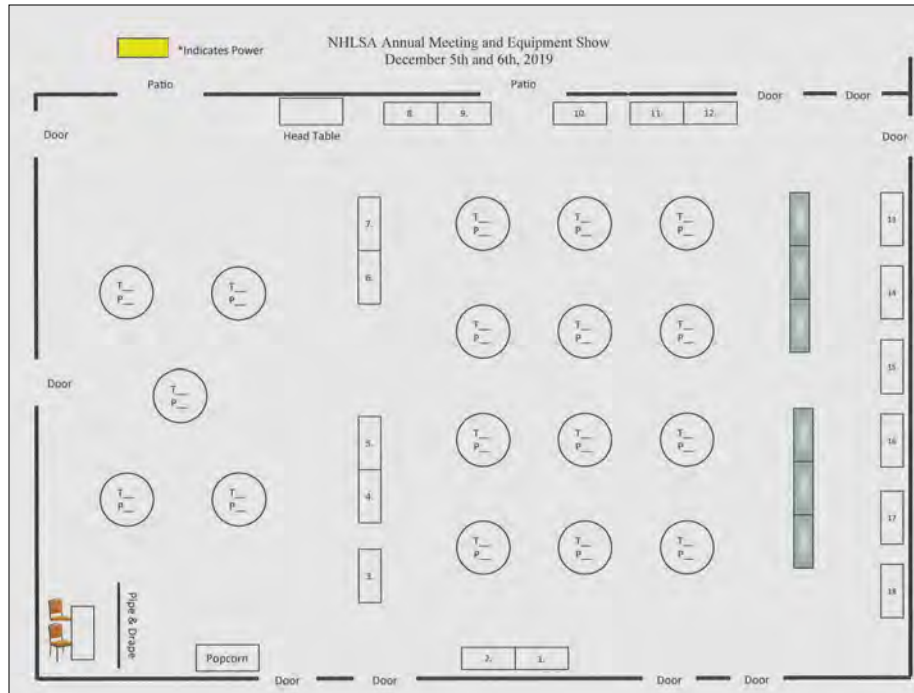


Exhibit Hours Set-Up

Installation

Thursday, December 5
6:00 AM - 8:00 AM

Friday Only

Friday, December 5
4:00 PM - 9:00 PM

Friday, December 6
6:00 AM - 8:00 AM

Dismantle

Friday, December 6
3:30 PM - 4:00 PM

Booth: Exhibitor

- ◆ 1 & 2: Maine Technical Source
- ◆ 3: Bluesky Geospatial Ltd.
- ◆ 4 & 5: Keystone Precision Instruments
- ◆ 6 & 7: Advanced Onsite Solutions
- ◆ 8 & 9: Spiller's
- ◆ 10: DGT Associates, Inc.
- ◆ 11 & 12: Topcon Solutions Store (Friday only)
- ◆ 13: Topaz Engineering Supply, Inc.
- ◆ 14: OPEN
- ◆ 15: CADNET Services
- ◆ 16: WSP
- ◆ 17: National Geodetic Survey
- ◆ 18: National Society of Professional Surveyors

Exhibit Hall Activity

Continental Breakfast
Thursday & Friday
7:30 AM

Morning Break
Thursday & Friday
10:00 AM

Ahhh— The smell of fresh popcorn!

Lunch w/Exhibitors

Session 24:
Exclusive Viewing
of Exhibits

Friday
12:00 PM - 2:00 PM

Afternoon Break
Thursday & Friday
2:45 PM

The wall between the Salon C sessions and the Exhibit Hall in Salons A & B will remain open to allow the exhibitors to join in the fun during this 50th Anniversary Celebration!

HOTEL INFORMATION

NHLSA 50th Annual Meeting & Equipment Show

The Courtyard Marriott & Grappone Conference Center, 70 Constitution Avenue, Concord, NH 03301. Phone: 603-225-0303, Fax: 603-225-8916. **Room Rate \$129.00+tax/night.**

ROOM RESERVATION DEADLINE:

Reservations must be received on or before **November 12, 2019**. At this date, the hotel will review reservation pick up for the event and release the unreserved rooms for general sale.

OVERNIGHT RESERVATION OF ROOMS:

1. A block of guestrooms is reserved for use of the NHLSA Meeting/Show at group rates.
2. Individuals are responsible for securing their own reservations from this group

Identify yourself as attendees of the NHLSA Group in order to receive the discount.

1. Check in is at 3:00 pm and check out is 12:00 noon.
2. Cancellation, late arrival or special arrangements should be made directly with the Courtyard Marriott.
3. Complimentary on-site parking.

Directions to Hotel: Hotel is located off Rte 93, Exit 15W. Turn right at the first stoplight onto Commercial Street. Follow Commercial Street 1/4 mile to Constitution Avenue.

If you need further information, check out the hotel website at:

<http://www.marriott.com/hotels/travel/mhtcn-courtyard-concord/>

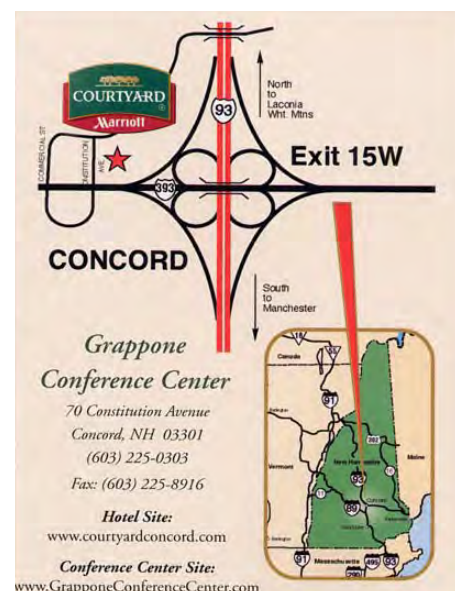
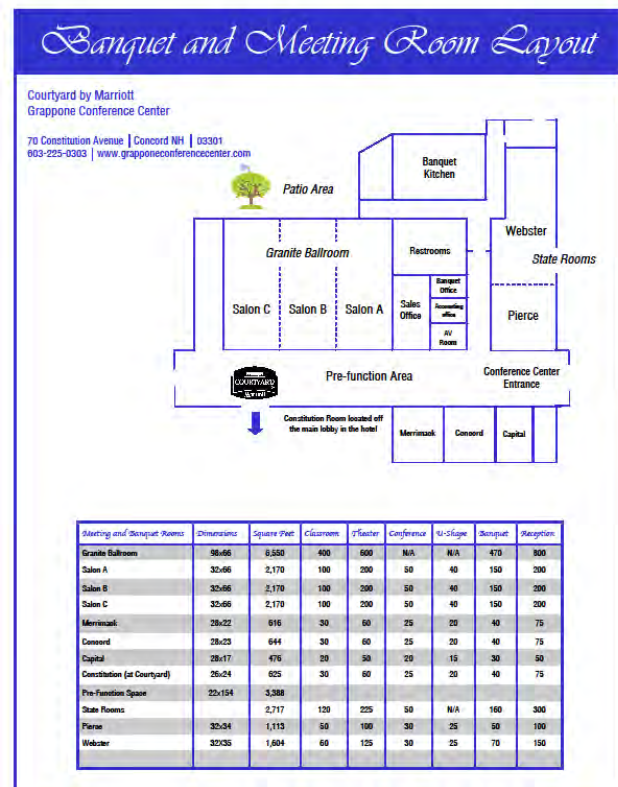
Spouses & Guests

Shopping is available nearby at the Steeplegate Mall. Another shopping location is downtown Concord with a variety of shops.

Other area attractions include the State Capitol, located at 107 North Main Street. Concord is the state capital and is home to the oldest state capitol building in the United States.

The new McAuliffe-Shepard Discovery Center is a lively science center featuring 21st century interactive exhibits on aviation, astronomy, Earth and space sciences, a state-of-the-art planetarium and a variety of science and engineering programs. The Discovery Center is open seven days a week. For show times, topics and reservations call 603-271-7827 or check out www.starhop.com.

The Museum of New Hampshire History is located at 6 Eagle Square and is open from 9:30am thru 5pm. Admission is \$5.50 for adults, \$4.50 for seniors, and \$3.00 for children ages 6-18. Children under 6 and members free. This Museum features exhibits on everything from Native American remains to the Concord stagecoach. An interesting trip through this scenic state's history. Check out their website at: <http://www.americanheritage.com/content/museum-new-hampshire-history>



NHLSA BOOKSTORE ~ NHLSF BENEFIT AUCTION

NHLSA 50th Annual Meeting & Equipment Show

NHLSA BOOKSTORE

Don't forget to stop by the traveling NHLSA Bookstore during the breaks and free time. This is the perfect time to save that 20% shipping & handling charge. Barbara and our devoted volunteers will have a mini bookstore set up in the pre-function area and will be selling all of the books and merchandise that you can normally purchase on the NHLSA website. With the end of the year right around the corner, books and reference material may also be good tax deduction business expenses for you, and if you are an aspiring surveyor, some of these books will be invaluable to you in preparing for your exam!

In addition to the reference books we've also got items like brass discs, lapel pins, and belt buckles. The belt buckles (with proceeds going towards the Scholarship Fund) are numbered sequentially, so if your license number falls between 194-513, you may be able to get a buckle with your license number on it.



Please drop off
your item and form
at the
registration table.

Thank You for your Support!!

Please help in our recordkeeping by using the form below
when donating an auction item, door prize, or raffle prize.
Thank you for your cooperation and generosity!

BENEFIT AUCTION DONATION PLEDGE FORM

Don't miss the Fun, Food and Action at the NHLSA Benefit Auction!

Live Auction Thursday 4:00 - 6:00 PM (during reception)

Silent Auction ends Friday afternoon (winners announced end of day)

Use this form to make a donation to our Benefit Auction. Please complete the information below and return via fax, email or mail to **NHLSA** Office: 603-386-6856; info@nhlsa.org; PO Box 689, Raymond, NH 03077-0689.

| | | | |
|----------------|-------------------------|--------------|--|
| Name / Company | | Phone () | |
| Address | | Fax () | |
| City | State | Zip | |
| Item | Fair Market Value \$ | | |

Please include a brief description of the item (s) to be used by auctioneer. **List additional items on separate piece of paper.**

DOOR PRIZE DONATION:

RAFFLE DONATIONS


Small items welcome for mini-affle, drawing during Friday afternoon break.
50/50 raffle held throughout both days, closes at 2:00pm Friday, drawing during afternoon break

2019 NHLSA CONVENTION REGISTRATION

BEST VALUE

NHLSA 50th Annual Meeting & Equipment Show

Early Bird Full Registration
Before November 1st—\$300/\$400

| | | | | |
|---|---|---------------------------------------|---|---------|
| (✓) () LS () Associate () Affiliate () Student () Non-Member | | | | |
| Name | | Guest Name | | |
| Company | | Phone () | | Fax () |
| Address | | Email Address | | |
| City | State | Zip | Name on Badge | |
| Member* (✓) () NHLSA () CALS () MALSCE () MSLS () RISPLS () VSLS () NYSAPLS *Member includes all Northeast State Societies (If member in multiple states, check home state) | | | | |
| # | REGISTRATION | Member | Non-member | TOTAL |
| | Early Bird Full Registration—before Nov. 1st | \$300.00 | \$400.00 | \$ |
| | Full Registration—after Nov. 1st | \$375.00 | \$475.00 | \$ |
| | Thu All Day (see below) | \$250.00 | \$350.00 | \$ |
| | Thu Seminar Only (includes breaks & lunch) | \$225.00 | \$275.00 | \$ |
| | Fri Only (see below) | \$225.00 | \$275.00 | \$ |
| | Friday Special Offer - Affiliate & Student Members - First ten (10) registration forms received (two per company limit) | | N/C | \$ |
| | Banquet & Benefit Auction Only or Additional Tickets | | \$60.00 | \$ |
| BANQUET CHOICE () Grilled Angus Sirloin () Roasted Chicken Braciola | | | | |
| | Thu or Fri Lunch Ticket (includes breakfast & breaks) | | \$50.00 | \$ |
| | Equipment Show Only (lunch ticket & CEUs not included) | | N/C | \$ N/C |
| | Annual Meeting | | N/C | \$ N/C |
| | Past Presidents' Breakfast | | N/C | \$ N/C |
| Thursday All Day —includes workshops, continental breakfast, breaks, lunch, banquet & benefit auction Friday Only —includes workshops, continental breakfast, breaks, lunch, & equipment show | | | Total Payment Due \$ | |
| Receive 20%* off for five (5) or more members or employees from the same company *20% discount only applies to Full Registration, or One-Day Only Registration | | | Included in Full Registration <ul style="list-style-type: none"> ◆ Two Days of Workshops with Continuing Education Units ◆ Continental Breakfast (2) ◆ Morning & Afternoon Breaks (2) ◆ Lunch (2) ◆ Banquet & Benefit Auction ◆ Equipment Show | |
| Method of Payment | | | Cancellation Policy Written cancellation request must be postmarked 20 days in advance for 100% refund. | |
| Hotel Reservation Deadline Courtyard Marriott Grappone Conference Center 70 Constitution Avenue Concord, NH 03301 603-225-0303 November 12, 2019 Identify Affiliation with NHLSA | | |  | |
| Check (payable to NHLSA) () CHECK # _____ VISA () MASTERCARD () AMERICAN EXPRESS () DISCOVER () | | | | |
| Credit Card Number _____ | | | Exp. Date ____/____/____ | |
| Name Appearing on Card _____ | | Address if different from above _____ | | |
| Signature _____ | | | Today's Date ____/____/____ | |
| CARDMEMBER ACKNOWLEDGES RECEIPT OF GOODS AND SERVICES IN THE AMOUNT OF THE TOTAL SHOWN HEREON AND AGREES TO PERFORM THE OBLIGATIONS SET FORTH BY THE CARDHOLDERS AGREEMENT WITH THE ISSUER. | | | Auth # _____ <small>Office Only</small> | |
| <ul style="list-style-type: none"> ◆ All registrations must be accompanied with payment ◆ Reservations cannot be taken by phone. ◆ Send both pages ◆ Only one person and guest per registration form ◆ Make copies if needed | | | Mail or FAX Form (do not email credit card info) New Hampshire Land Surveyors Association (NHLSA) PO Box 689 Raymond, NH 03077-0689 Phone: 603-895-4822 Fax: 603-386-6856 Email for inquiries: info@nhlsa.org Website for brochure or to register: www.nhlsa.org | |

WORKSHOP SELECTION

NHLSA 50th Annual Meeting & Equipment Show

WORKSHOPS

| Thursday, December 5, 2019 | | | Friday, December 6, 2019 | | |
|----------------------------|----|--|--------------------------|----|---|
| ✓ | # | Title | ✓ | # | |
| | 1 | Following in Their Footsteps | | 11 | 50 Years of Surveying Computing Technology |
| | 2 | Following in Their Footsteps | | 12 | 1988 Research Seminar Video |
| | 3 | Vendor Technical Advances | | 13 | Overview of NGS Products and Services |
| | 4a | Mobile Imaging/Scanning, "Off the Tripod" | | 14 | Technician to Professional |
| | 4b | Working with Town, State, and Federal Agencies | | 15 | Surveying in Floodplains |
| | 5 | Surveying Olympics | | 16 | NESS Roundtable |
| | 6 | Reality Capture Technologies | | 17 | 50 Years of History and Memories |
| | 7 | Litigation by the Lake—Who Owns the Road? | | 18 | CAD Tips & Tricks for Better Efficiency |
| | 8 | Mock Planning Board | | 19 | Subsurface Systems Bureau Update |
| | 9a | Left Award Presentation | | 20 | NE Surveying Women Roundtable |
| | 9b | Rangeways—Time for Resolution | | 21 | Board of Licensure |
| | 10 | NSPS Overview | | 22 | Apprenticeship as a Workforce Strategy |
| | | | | 23 | Young Surveyors Roundtable |
| | | | | 24 | Viewing of Exhibit Hall |
| | | | | 25 | Surveying Olympics Review and Forum |
| | | | | 26 | Map Contest Showcase |
| | | | | 27 | Subsurface Utility Mapping |
| | | | | 28 | Latest Trends in GNSS |
| | | | | 29 | NH Shoreland & NHDES Wetlands Updates |
| | | | | 30 | Basics of Photogrammetry and Map Accuracy Standards |

Interested in participating in Karaoke? List three of your favorite tunes in the boxes below so we can give the list to the DJ upon arriving.

Reminder: Badge & meal tickets required for all events!

How do you prefer your 50th Annual Meeting Booklet?

DIGITAL

☐

HARDCOPY

☐

CONVENTION REGISTRATION

IMPORTANT—Although members and guests do not have to keep track of CEUs for individual classes, in the event that some workshops have handouts, please help our speakers plan their handout material by checking off which workshops you anticipate on attending. We also want to make sure there is enough room in the event we have to switch rooms.

Please fill out both sides of the two-page registration form completely, and mail with payment to NHLSA. If paying by credit card, fax both sides, or register on the website.

EARLY BIRD FULL REGISTRATION—Save \$75 by registering before November 1st!

Thank You 2019 Presenters