

Faculty

Boundaries and Easements

Wendy Lathrop, PLS, CFM *President and Owner of Cadastral Consulting, LLC*
Ms. Lathrop is licensed as a professional land surveyor in New Jersey, Pennsylvania, Delaware, and Maryland, and as a professional planner in New Jersey. She holds a master's degree in Environmental Policy, and has been involved in surveying since 1974 in projects ranging from construction to boundary to environmental land use disputes. Ms. Lathrop is also a certified floodplain manager through the Association of State Flood Plain Managers (ASFPM). A former adjunct instructor at Mercer County College in New Jersey, she has also taught as part of the team for the licensing exam review course at Drexel University in Pennsylvania. Ms. Lathrop has been teaching seminars for surveyors since 1986 and has been writing articles for surveyors since 1983. She is a contributing editor for *The American Surveyor* magazine, and she has four articles included in the American Bar Association's text, *Land Surveys: A Guide for Lawyers and Other Professionals*. She and Stephen V. Estopinal, PLS, PE co-authored a book entitled *Professional Surveyors and Real Property Descriptions: Composition, Construction, and Comprehension*, published by John Wiley & Sons, Inc. in 2011. She is also on the faculty of GeoLearn, a web-based educational provider. Ms. Lathrop is a past president of the New Jersey Society of Professional Land Surveyors and of the National Society of Professional Surveyors, and she has served on the Board of Directors for the American Association for Geodetic Surveying.

Introduction to GNSS Surveying

Chris Pucci, PLS *Project Surveyor-New Technology, Oregon DOT*
Mr. Pucci is a project surveyor for the Oregon Department of Transportation in the headquarters level Engineering Automation Section. He is a graduate of Oregon State University and has been a licensed professional land surveyor in Oregon since 2007. Prior to ODOT he worked for two counties and one of the larger cities in Oregon. He has surveyed for planning, project development, right-of-way, construction, and everything in the middle. He is currently working on ground-penetrating radar, contract specifications to support 3D engineered models, automated machine guidance, land survey training, and subsurface utility engineering.

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August Land Webinars

Boundaries and Easements and Introduction to GNSS Surveying



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HalfMoon Education Live Webinars

Boundaries and Easements

- Wednesday, August 5, 2020, 11:00 am - 2:30 pm CDT
- Thursday, August 6, 2020, 11:00 am - 2:30 pm CDT

Introduction to GNSS Surveying

- Thursday, August 20, 2020, 10:30 am - 1:45 pm CDT
- Friday, August 21, 2020, 10:30 am - 2:15 pm CDT

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August Land Webinars for Engineers, Surveyors and Other Professionals



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Each Live Interactive Webinar Offers:

Land Surveyors

6.5 PDHs (see details inside)

Professional Engineers

6.5 PDHs in all states



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Boundaries and Easements

A Two-Day Webinar Series

Tuition: \$299 per registrant, or \$199 per registrant for three or more

Credits: **Land Surveyors:** 6.5 PDHs (details below) **Professional Engineers:** 6.5 PDHs in all states

Wednesday, August 5, 2020, 11:00 am – 2:30 pm CDT (including a 15-min. break)

Locating Land Boundaries on Paper (And on the Ground)

What a deed tells us about real property interests and their locations – or doesn’t

Common kinds of land descriptions

- Metes and bounds
- Reference to a subdivision
- Reference to a tax parcel
- “Strip” descriptions
- 3-D descriptions (condominiums, split estates)
- Blanket easements

Reading a description to find evidence of location

The work involved in writing a description

Tying the paper deed to the ground: What is evidence of a boundary?

Why paper and ground may not match

When the paper and the ground don’t match: The hierarchy of evidence in descriptions

Summary: Elements of a good description

Physical Evidence and Boundaries

The difference between a corner and a monument

Retracement surveys versus new or independent surveys

Discrepancies between the written record and what is on the ground

- Types of discrepancies
- Causes of discrepancies

The hierarchy of evidence revisited

Thursday, August 6, 2020, 11:00 am – 2:30 pm CDT (including a 15-min. break)

Easements: Understanding Possessive Rights in Lands of Others

Distinctions between ownership and possession

Easements distinguished from other possessory rights

Types of easements and distinctions between them:

appurtenant, in gross, affirmative, negative and others

Methods of easement creation

Clues in documents to determine if interests are fee or easement

The effect of the Statute of Frauds on possessory rights

Methods of easement termination

What happens after termination?

Disputes: Boundaries, Shared Spaces, and Split Estates

Distinctions between trespass, adverse possession, and prescriptive rights

Maintaining adverse claims

- Statute of limitations
- Elements of a claim

“Lost grant” claims Quiet title actions

Acquiescence, laches, estoppel, and equity

Less litigious approaches to settling land interest disputes

- Practical location and boundary line agreements
- Boundary line commissions

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Thursday, August 20, 2020, 10:30 am – 1:45 pm CDT (including a 15-min. break)

Introduction to GNSS

History of GPS

GPS vs GNSS

Applications in surveying

Benefits and draw backs

Fundamentals of GNSS

GNSS theory and science

- How GNSS systems/satellites work

GNSS Measurements

- How do we measure with satellites
- Ellipsoid Models: NAD83/ITRF/NATRF2022
- Geoid Models: NAVD88/ellipsoid/ground/gravity
- Explain calculations

Overview of methods of GNSS surveying

- Autonomous/no augmentation or correction
- Differential/satellite augmented
- Precise point positioning/PPP
- Static/post processed
- Real time kinematic/RTK

GNSS Surveying Errors

Accuracy vs. precision

Single vs redundant measurements

Error/quality estimates

- DOP’s
- PDOP
- GDOP
- HDOP
- RMS values
- 2D/3D QC values
- Signal to noise ratio

Error causes

- Multipath
- Ionosphere
- Latency
- Satellite Geometry
- Setup
- Blunder/etc.

Error mitigation

- Elevation mask
- Redundant measurements
- Software checks
- Checking known point
- Sky plots

Continuing Education Credit Information

Each live interactive webinar offers 6.5 PDHs/continuing education hours to land surveyors in most states and professional engineers in all states.

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Boundaries and Easements: Course approval is not being sought for land surveyors licensed in Florida, Tennessee, Texas, and New Jersey.

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Friday, August 21, 2020, 10:30 am – 2:15 pm CDT (including a 15-min. break)

GNSS Surveying Methods & Best Practices

Survey setup

Site calibration vs. defined coordinate system

Basic data collection and processing

- RTK
- Static

RTK methods

- Basics of an RTK survey
- Local base/radio transmitter
- Network/internet base
- Float vs fixed solution
- Observation time vs. accuracy

Static methods

- Basics of a static survey
- Rapid static
- Long session static
- Post processing

GNSS Surveying Data Management

Coordinate systems

Data storage/backup/formats

Datum transformations

Time dependency of data

Data processing

- OPUS/online processing software
- Hardware manufacturer proprietary software
- StarNet/others independent software

GNSS Surveying Case Studies

Static control campaign

- RTK control campaign
- RTK topography
- UAS ground control

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Introduction to GNSS Surveying: Course approval is applied for and pending for Tennessee and Texas land surveyors. Course approval is not being sought for Florida and New Jersey land surveyors

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