MARLS 2022 Conference
February 23-25, 2022
Speaker's Bios & Synopsis

Dr. Richard L. Elgin, PS, PE, Rolla, Missouri

Dick Elgin is a rare surveyor: A practitioner, having owned and operated a surveying and mapping firm for 24 years, sealing about 15,000 surveys. An author, most recently writing "The U.S. Public Land Survey System for Missouri" and "Riparian Boundaries for Missouri." An educator, being Adjunct Professor Emeritus of Surveying at Missouri University of Science & Technology. A research er, being the codeveloper of the "ASTRO" celestial observation software. A collector, owning one of the largest private collections of early American surveying equipment in the United States.

A second-generation surveyor, Dr. Elgin was raised in St. James, Missouri and in his late parents' surveying business located in nearby Rolla. After high school Dick joined the Army, went through helicopter flight school, was made a Warrant Officer, and spent 1969 in Vietnam flying the Hughes OH6A "LOH" and the ubiquitous UH-1 "Huey" with the American Division. Following the Army, he received the BSCE and MSCE degrees from the Missouri University of Science and Technology (S&T, Rolla, MO) and his PhD from the University of Arkansas. Leaving Arkansas, he joined the faculty of the Department of Civil Engineering at S&T as an Assistant Professor (1980-1984) and is now Adjunct Professor Emeritus. From 1984 until 2008 Dick was the owner and President of Elgin Surveying & Engineering, Inc. Semi-retired, Dick currently works for Archer-Elgin Engineering, Surveying and Architecture. He is a former member of the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors and Professional Landscape Architects; a Past-President of the Missouri Society of Professional Surveyors; a member of both S&T's and the University of Arkansas' Academy of Civil Engineers; a member of S&T's Order of the Golden Shillelagh; and on the Board of Directors of S&T's Alumni Association. With Drs. David Knowles and the late Joe Senne, Dick coauthored the Celestial Observation Handbook and Ephemeris and codeveloped the "ASTRO" celestial observation software products. With David Knowles, he coauthored Legal Principles of Boundary Location for Arkansas and The U.S. Public Land Survey System for Arkansas. Dick is the author of The U.S. Public Land Survey System for Missouri, Riparian Boundaries for Arkansas and Riparian Boundaries for Missouri. He also wrote Shoulda Played the Flute, a memoir of his year flying helicopters in Vietnam. Dick was Arkansas' surveying and mapping expert in a state riparian boundary dispute with Mississippi, decided by the U.S. Supreme Court. See Arkansas v. Mississippi, 471 U.S. 377 (1985). He is an avid collector and researcher of early American surveying equipment and owns one of the largest private collections of such equipment in the United States. Semi-retired, he and his wife enjoy touring by bicycle, RV or in their perfectly restored 1976 Alfa Romeo 1600 GT Junior or 1967
Austin Cooper 1275 S.

Seminar Synopsis'

- **"50 WAYS TO MAKE YOUR SURVEYS BETTER AND LIFE EASIER"**

A presentation for owners, principals, managers and employees of surveying/engineering firms, it offers effective, tested, practical, useful ideas for operating such a business. Taught by the former owner of a successful surveying and mapping firm, Dick draws on and gives the attendee the benefit of his 24 years of frustration in acquiring the project, then getting it out the door as promised, billed and paid, while at the same time making a profit and providing the Quality Assurance/Quality Control and risk management checks the project deserves. The presentation is supplemented with example forms and letters.

- **"SURVEYOR'S NOTES FOR PLATS"**

The user or reviewer or critic of your Certificate of Survey or Plat likely knows little about the boundary survey and the professional service you provide. There are aspects of the survey which are difficult or impossible to convey graphically. Surveyor's Notes on the plat can better convey information about the survey, and make it more defendable: What it is and what it is not. Most notes can be placed in a

standard format, or one easily adapted to each plat of survey. Example Surveyor's Notes are given in this presentation, and each is discussed as to reason and applicability.

- **"A REVIEW OF MONTANA RIPARIAN BOUNDARIES"**

Riparian boundaries move, being much different from their fixed upland brethren. This requires their own "lex aquae," their own body of legal principles. Most boundary control legal principles are fairly uniform nationwide. That is not true for riparian boundaries, they can be very state-specific. In this presentation, the more common and universal riparian boundary processes and legal principles are reviewed. Then the more challenging and esoteric aspects of Montana riparian boundaries will be explored in a discussion led by Dr. Elgin with input from the attendees.

- **"THE EVOLUTION OF EARLY AMERICAN SURVEYING EQUIPMENT"**

In this presentation, Dr. Elgin traces the evolution of early American surveying equipment, from the plain compass of the late 1700's to the vernier compass, the telescopic compass, the "Railroad" compass and the compass' ultimate development, the solar compass. Also discussed are the standard American Transit and its solar and mining attachments. Dick also reviews the prominent American makers, including the exquisite work of Goldsmith Chandlee, the prolific firm of W. & L.E. Gurley and others. Also reviewed are alidades, levels, and calculating devices. The equipment shown is all taken from Dick's extensive collection of early American surveying equipment. During the talk Dick offers tips and suggestions on collecting such equipment and provides thoughts on values and value trends.

James Reinbold Director of Sales for Rocky Mountains & Northwest Background**:** I have a Bachelor of Science degree from Oregon State University with an emphasis in Architecture. I worked for three years with an architect and completed the first year of my master's program in architecture at the University of Colorado at Denver. In 1989 I started working with a structure engineering firm. In 1991 we converted from hand drafting to CAD with AutoCAD Release 9. Civil design was added to the services offered by the firm. I accepted the opportunity to learn and experience civil engineering.

In 1995 I became involved with performing training classes and demonstrations for the software our firm used for civil design. In 1999 I started working full time for Eagle Point Training and supporting their software.
In 2000 I completed study and exams for the Microsoft certification program and received a title of Microsoft Certified Systems Engineer. This certification is on Windows NT 4.0.
In July of 2007 I joined the staff at Carlson Software to continue working with surveyors, engineers and construction organizations to provide top quality products and services and further their ability to excel in their chosen area of work.

Seminar Synopsis'

- **Carlson Survey Fundamenta**ls - Participants will be able to prepare a variety of CAD based plans for boundary and topographic surveys.

- **Carlson Survey - Advanced Topics with Q & A** - This class is targeted for more experienced CAD users. The presentation and discussion of new feature that will allow users to leverage new tools to improve efficiency.

Topics:
8:00 – 8:30
• Presentation of recent improvements to Carlson Survey.
o Carlson 2022 was released December 30, 2021. 8:30-10:00
• Use of lesser-known commands:
o Design Pad Template
o Slope Analysis
o Tin Editing
o Geodetic Point Reports

Break
10:30- 11:30
• Presentation of data sharing options.
11:30-12:00
• Open question and answer session.

Handouts will be printed lists of 2022 improvements, Sharing Data presentation Power Point, Data sets and steps used for the Lesser-Known commands. Data sets will be provided on USB drives or download link.

Shyra Scott & Sam Scott – Missoula County Clerk and Recorder's Office
Property records specialist providing innovative local government services for the benefit of the community.

Seminar Synopsis

- **Missoula County Recorder & Electronic Recording Discussions**

Montana Clerks & Recorders play a critical role in the life cycle of subdivision and survey projects. However, the specific duties, requirements, and assistance that can be provided by Clerks & Recorders vary across the state. The first segment of this course will discuss that variation including the differing roles and regulations. This segment will also review the history of records availability in Missoula County and current projects focused on enhancing access to land records using GIS. Lastly, the first segment will examine the digital routing and review process adopted by Missoula County for subdivisions and surveys. Instructors will discuss the technology involved, procedures established, and results seen. The second segment of this course will be a discussion about the possibilities of digital submissions of plats and surveys to local governments. The discussion will include an examination of best practices, necessary legislative and regulatory changes, and steps forward.

JEFF RIZZA – UAS Program Manager & Survey Technician
Jeff is DJ&A's lead UAV pilot and a survey technician with 9 years of experience using UAV systems for aerial mapping, data collection, and inspections. He is proficient in a variety of multi-rotor and fixed-wing UAV systems including PixHawk, SenseFly, and DJI. He is also proficient in operating LiDAR and photogrammetry payloads as well as the GNSS and total station equipment required to perform control and truthing on aerial data. Jeff has an extensive understanding of UAV regulations and stakeholder concerns regarding the use of foreign UAV technology. He has ensured DJ&A's UAV program is able to provide the benefits of this advanced technology while maintaining data security and, whenever possible, using US-made aircraft. Jeff is also an experienced LiDAR and photogrammetry data processing technician and a survey technician.

CRAIG THRELKELD – LIDAR & PHOTOGRAMMETRY TECHNICIAN
Craig is responsible for processing LiDAR and imagery data acquired with DJ&A's various UAV systems and from other mobile platforms. Craig processes and controls trajectories from flight missions, fuses, classifies, and projects point cloud data, and generates photogrammetric products. He is proficient in utilizing National Standard for Spatial Data Accuracy (NSSDA) methods to perform quality control and accuracy checks on all data sets to ensure survey-grade quality. Craig is also uniquely experienced in fusing datasets from various acquisition sources into comprehensive final products. He has completed more than 10 projects of this nature in the previous year for a variety of Federal, State, and private clients.

Seminar Synopsis

- **UAV LiDAR vs Photogrammetry for Topographic Mapping**

Can drone data really be survey-grade? Low-cost camera UAVs and photogrammetry software have become easily accessible to enthusiasts and professionals alike. Geospatial professionals have begun using these tools for mapping based on the promise of low-cost, efficient, and accurate data collection. However, the accuracy of photogrammetric products is highly dependent on the equipment, software, and techniques used. UAV LiDAR, while more expensive and less easily accessible, offers access to more reliable sensing technology in addition to the efficiency gains of using a drone. In this seminar we will put

UAV photogrammetry and LiDAR head-to-head in three real-world topographic mapping projects to evaluate their accuracy and understand when and where each tool can be used.

Kurt Luebke, PLS, CFedS – Professional Land Surveyor Vice President – Surveying, Mapping and GIS

Kurt is a registered Professional Land Surveyor in thirteen states (Montana, Idaho, Oregon, Alaska, Colorado, North Dakota, South Dakota, Utah, Wyoming, Minnesota, Oklahoma, New Mexico and Washington) and a Certified Federal Surveyor with more than 28 years of professional land surveying and right-of-way research experience. Kurt's main areas of responsibility include managing cadastral projects for the NPS, USFS, U.S. Bureau of Reclamation, Federal Highway Administration and many private clients. He has completed a wide variety of surveying projects including GPS, control, hydrology, bridges, highways, utility, photogrammetric, topographic, forest roads, mining, mapping and boundary surveys. Kurt's experience also includes a vast knowledge in the use of GNSS (RTK, static and rapid static applications) Total Station (Robotic and Conventional) Levels and Terrestrial Laser Scanner operations.

Seminar Synopsis

- **The Man (WH Thorn), The Myth(the USGS didn't do boundaries), The Surveys**

Learning the history of surveys, agencies and surveyors for future retracement projects and knowledge.

Nicholas W. "Nick" Bailey, P.E.

Professional Experience: Public Works Engineer, Montana Rail Link, Field Engineer, Montana Rail Link, Staff Engineer II, City of Billings Public Works, Airport Staff Engineer, Land Survey Technician, Hallin & Associates, US Air Force Helicopter Pilot,

Master of Business Administration, University of South Dakota, Vermillion, SD; Beta Gamma Sigma Honor Society; Bachelor of Science (Honors), Montana State University, Bozeman, MT; Bachelor of Science, US Air Force Academy, Colorado Springs, CO

Professional Registrations and Affiliations

Licensed Professional Engineer, American Railway Engineering and Maintenance-of-Way Association, Federal Aviation Administration ("FAA") Licensed Commercial Instrument Rotary Wing Pilot.

Seminar Synopsis

- **Elements of Railroad Rights of Way Retracements**

This seminar will provide practical knowledge, tools, and resources for practicing land surveyors to equip them to perform retracements of railroad rights of way in Montana. This course will focus on federal government grants of rights of way, types and sources of railroad mapping, methods for determining stationing and curves along railroad rights of way, and railroad features commonly used as references on railroad rights of way. Examples, blunders and pitfalls will be illustrated and discussed.

Tara Depuy

Juris Doctorate, B.S. in Business Management, Montana Reserved Water Right Compact, Human Resource Development Council District IX, Corporation for the Northern Rockies, Private Practice, MACo/JPIA Land Use, Civil Attorney, Park County Attorney, Deputy Park County Attorney.

Karen Alley

The University of Montana School of Law, Boston University School of Theology, Montana State university. Hill County Attorney's Office, Office of Public Defender, Lorang Law, PC, University of Montana, State Bar of Montana.

Seminar Synopsis

- **Land Use Legislation Update and Exemptions from Subdivision Review**

The participant will use this material to follow legal guidelines in drafting certificates of survey and subdivision plats.

Biography of "Montana Bill" Weikel

Bill's surveying career began in 1960 when he attained a Surveying Merit Badge in the Boy Scouts. In 1966 and 1967 he took a number of surveying classes at Montana State University from O.I. Jackson in his pursuit of a degree in Civil Engineering. After graduating from MSU, Bill spent 20 months in the Army during which he had some surveying education during training.

After leaving the Army, Bill went to work for Sorenson and Company (forerunner to WGM Group), from 1972 until 1994 as a Party Chief, Project Manager, Survey Crew Supervisor, and Surveyor. He became licensed in Montana as a Professional Surveyor in 1979.

In 1995 he began a new phase of his career when he began working with a Geotechnical Engineering Company. He became licensed in Montana as a Professional Engineer in 2003. Although he was not working in the Surveying field, he kept up his connection with the Surveying profession thru his involvement with MARLS.

In 1999 he became a member of Surveyors Historical Society and is now a BOD member and the CFO. Over the past 25+ years he has extensively studied surveying history including equipment and methods used by Lewis & Clark, and equipment and methods used by members of mid 1860s Army Topographic Corps. He has given numerous presentations on various aspects of surveying history to MARLS and other organizations.

Seminar Synopsis

- **Historical Montana Requirements for, and Practices of, Surveying, Monumenting, and Platting**

To perform a retracement survey, it is important to understand what statutes and what practices existed at the time of, and subsequent to the time the original survey took place. This presentation will chronicle the history of Montana Statutes and surveying practices that controlled surveying, monumenting, and platting from the 1860s until the passing of the Subdivision and Platting Act of 1973. It is hoped that this presentation will assist Surveyors and others in being aware of what statutes and practices may have an influence on the retracement they are performing.

Catherine Ries has worked for the Montana Department of Transportation for over 16 years all in the Right-of Way Bureau. She started her career at MDT as a Real Estate Clerk in the Real Estate Services Section (RESS) and has worked her way up to her current position as the Real Estate Section Supervisor.

Linda Cline has worked for the Montana Department of Transportation for over 18 years. She graduated from Montana State University in 2003 and started working for the Montana Department of Transportation in the MSU Design Unit in 2002. She was a road designer for a year and a R/W designer for 15 years. She is currently the R/W Design Manager.

Andy Merkel has worked for the Montana Department of Transportation for two years as an engineering intern and has recently taken a position in the Right of Way Bureau as a Civil Engineering Specialist. Andy graduated from Montana State University with a bachelor's degree in Mechanical Engineering with an emphasis in Transportation. He has worked previously for the Western Transportation Institution - Rural Safety Center and the Ravalli County Road Department. He has spent four years in the transportation sector, in preconstruction, construction, and safety engineering roles. Andy has spent the previous two years developing the ArcGIS geospatial reference program maps for the Right of Way Bureau.

Seminar Synopsis

- **R/W Research Tips and Tricks**

Professionals will use this information to find MDT records of highway right of way projects and right of way plans (active and completed projects) in the state of Montana using multiple search tools and systems.

Jay Haskamp is a Trimble Certified Trainer and the Geospatial Technical Team Manager for Frontier Precision, Inc. He has been involved with Surveying and Engineering since 2002 and has served just about every role both in the field and the office. Jay joined Frontier Precision in 2008 and currently leads their team of Certified Trainers, Support Staff and Services Personnel. He has a love for new technologies and always tries to stay on the cutting edge of new ideas relating to the geospatial industry. Jay has had the opportunity to work with, and train Geospatial Professionals throughout the Upper Midwest, the Rocky Mountain and Southeastern regions, Alaska, Hawaii and Mexico.

Seminar Synopsis

- **GNSS best practices for the field and how to be successful with LDP's and VRS.**

Frontier Precision is committed to service and support, with Trimble Certified Service Centers in Bismarck, ND, Minneapolis, MN, Denver, CO, Anchorage, AK, Honolulu, HI, Portland, OR, Seattle, WA, and Boise, ID. We also help you get the most out of your equipment, through Trimble Certified Training Classes. With Frontier Precision, you're always assured of receiving the most innovative solutions along with the advice of expert professionals.

Amanda J. Allred, PLS
Professional Land Surveyor in six states including: Alaska, New Mexico, Arizona, Utah, Colorado & Nevada President of the New Mexico Professional Surveyors 2014
National Society of Professional Surveyors Governor/Director Since 2014
Published several articles for Benchmarks Magazine the NM Professional Surveyors Magazine,
Managed the NM office of a large engineering/surveying firm for five years with offices in New Mexico, Arizona, Nevada & Colorado
President Elect National Society Professional Surveyors 2021

Seminar Synopsis

- **Women in Surveying**

This course is being offered in order to give the perspective of a female land surveyor. It's intended purpose is to provide a background and lite lessons from a woman in a predominantly male profession. It will provide the opportunity to openly ask and answer questions about how companies can transition to a more diverse work force. This will be an interactive presentation where participants can discuss their concerns and will provide an opportunity for companies and individuals to expand their work force.

Eric Greenwell comes to Montana by way of Idaho and Oregon, where he studied humanities, comparative literature and creative writing and taught rhetoric and composition. Through unique programs which blend writing and ecology, he has lived on homesteads and research stations in the wild and scenic corridor of the Rogue River and the Frank Church River of No Return Wilderness. Immersive experiences like these have instilled in Eric an appreciation for the need to find creative solutions to complex social, cultural, and ecological challenges to preserve the unparalleled lands and values which sustain the peoples, floras, and faunas of the Intermountain West. He arrived in Milltown, Montana with his partner, Belinda, and at Five Valleys Land Trust in July of 2021 after working with community partners to complete a $6.5 million acquisition of the East Moraine Community Forest in Wallowa County, Oregon as well as leading the design of a multiple-use management strategy to balance its habitat, cultural resources, forestry, rangeland management and recreation.

Seminar Synopsis

- **Conservation Easements and Landowner Goals**

As surveyors work directly with landowners, they often address questions and discuss options landowners have for subdivision and development of property. Conservation easements are a specific tool that land trusts like Five Valleys Land Trust are qualified to hold and that landowners can use to meet certain goals. This course will educate

surveyors about conservations easements: what they are, the land trust's role is in creating and administering them,
benefits to a landowner. and most of all, how surveyors can play a role informing clients about their options.

Jaime Reed – MARLS Legislative Committee Chair

Seminar Synopsis

- **Legislative Roundtable**

This material provides the Land Surveyor with updates regarding the changes made to Montana Law during the 2021 Legislative Session and possible legislation to be presented during the 2023 Legislative Session.

Jonathan Ries
Jonathan is a Registered Professional Land Surveyor, co-owner of Triple R Surveying and has been a licensed Title Examiner for 25 years with First Montana Land Title Company of Helena. He went to Flathead Community College where he received his degree in Land Surveying. He currently works for the Montana Department of Transportation as a Right-of-way Checker in Helena.

Seminar Synopsis

- **Land Title Insurance**

Land Title Insurance is one of those products that is not understood in its entirety and not overwhelmingly accepted by the common individual. Land title insurance is not required but most of us believe it is a necessary evil. This course will enlighten and give a better understanding and knowledge of what title insurance is and the benefits thereof. The attendee will acquire a better familiarity of real property terms and land issues.