The background of the cover is a detailed oil painting of a rugged mountain landscape. In the foreground, two figures are standing on a rocky outcrop, looking towards a deep canyon. A waterfall cascades down the center of the canyon. The mountains are steep and layered, with various shades of brown, tan, and purple. The sky is a mix of soft purples and blues. The overall style is that of a 19th-century landscape painting.

UCLS

Foreights

PUB. 15 2022-2023 ISSUE 2

Commemorating
**Hayden's
Great Survey
of the American West**

OFFICIAL PUBLICATION OF THE UTAH COUNCIL OF LAND SURVEYORS

In conjunction with the National Society of Professional Surveyors and the Western Federation of Professional Surveyors

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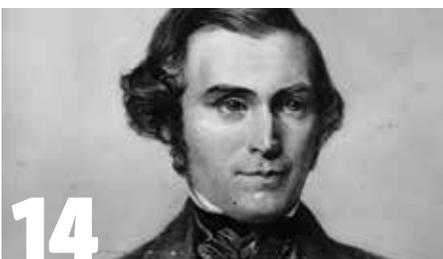
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Thoughts

FROM THE CHAIR

ANDY HUBBARD, CHAIR,
UTAH COUNCIL OF LAND SURVEYORS

Dear UCLS Members,

I hope this message finds you all in good health and high spirits as we emerge from a very wet winter and spring. I want to take a moment to express my heartfelt gratitude to all the members of this great organization, for without you, it would not exist.

First and foremost, I want to extend my sincerest appreciation to each one of you for your unwavering commitment and dedication to the surveying profession. The efforts of individuals, committees, the executive board, and the founding members have helped make the UCLS an organization I am proud to be a part of. The committees are working to educate, promote and protect the profession while working to increase membership. The Historical and Education committees are working together on a project at This is The Place Heritage Park to set an Initial Point so the park can educate school groups from around the region on surveying, along with a plaque commemorating the start of the Haden Survey. The Membership committee is starting to meet and discuss its role in the UCLS, and the Legislative committee and Standards and Ethics committees are meeting regularly to review the changes to the state code affecting surveyors and making sure everyone is adhering to those codes. The Publication committee is working hard to bring you the newsletter and this *UCLS Foresights*.

I have had a couple of thoughts bouncing around my head about what to write for this article; both are vastly different, but I believe worthwhile.

In today's fast-paced and ever-changing world, it is crucial that we continue to embrace innovation and understand the tools available for us to survey, and understand our professional responsibilities. I encourage each of you to stay current on your Professional Development Hours (PDHs) with some time allotted to an ethics course. This will hopefully keep us informed and knowledgeable of why we are professionals holding a license. Is it just so the state can collect a fee? No, there is more to it than that. Do you know your professional responsibilities? Did you know the Utah Department of Professional Licensing (DOPL) has adopted rules for professional conduct? I encourage you to scan the QR code to review them if it's been a while.



<https://dopl.utah.gov/engineering/resources/>



I would also encourage some time focused on new technology. I know we are tasked with following in the footsteps of the previous surveyor. However, I don't know of a client that is willing to pay for a five-person survey crew to reset the boundaries of a quarter-acre parcel because that is how it was done in the past. This may not be possible if we do not keep up-to-date with the latest technologies. They are coming at us faster than ever, and we should understand them before we are forced to because of an error. Let us strive for excellence in every survey we do. Whether it is for a single lot or a large multi-million dollar development, we should be precise in our measurements and accurate in our determinations. These types of PDHs will help us accomplish this.

As I look ahead, there are undoubtedly new challenges awaiting us. With challenge comes opportunity. I feel the biggest challenge is a dwindling labor force and an aging population of Licensed Surveyors which, because of technology, is being magnified with the single-person crew — something that is a reality across the country. How do we combat this while maintaining profitability and production and avoiding burnout? I feel that a single-person crew is fine in certain situations; however, it is not the answer to a reduced labor force because we are not training the next generation. Our ability to convey the knowledge we gained used to take years of the technician being out with the crew boss before they were allowed to run a crew — which is not the case, currently. The opportunity I see from

this challenge is figuring out how to convey all those years of experience in a much shorter time frame.

I do not want to be negative but do want to get everyone thinking about where the profession should be in 10 or 20 years. Is it just button pushers or skilled technicians who understand what is happening when they push the button? What opportunities do you feel the profession has as it moves forward? As technology advances, the surveyor's ability to perform a survey will undoubtedly change, but our ability to be professional and determine property boundaries and protect property rights should not.

In conclusion, I am honored to serve as your Chair, and I am incredibly proud of what we have accomplished and will accomplish together. As we move towards our next observation point, let us preserve our history, while keeping our eyes open for opportunities to strengthen and expand the profession we love. Working together, we can create a bright future for surveying and leave lasting monuments across this wonderful state.

Thank you for your continued support, for being a member and for being an integral part of the success of the UCLS.

Warm regards,

Andy Hubbard
Chair, Utah Council of Land Surveyors

SOMEBODY ELSE

Celebrities often use their charisma to highlight social or environmental movements. The prominent guitarist Jerry Garcia of *The Grateful Dead* rock band advocated for the preservation of the world's rain forests, and he spoke with a mixture of candor, humility, and sadness about his involvement:

When asked why The Grateful Dead was participating in the environmental movement, Jerry Garcia responded, "Someone has to do something. It's just incredibly pathetic it has to be us."

If not me — who?

Allow me to tell you the story about Everybody, Somebody, Anybody, and Nobody; and how each contributed to an important project.

Everybody was sure that Somebody would do it, and Anyone could have done it, but in the end, Nobody always ended up with the task. When Nobody did it, Somebody was angry because it was Everybody's job. But Everybody thought that Somebody would have done it instead. Now Nobody realized that Anybody could have done it. So consequently, Everybody blamed Somebody when Nobody did what Anybody could have done in the first place.

Now these four were fun, active, busy people who struggled to accomplish things. You see, Everybody had good ideas, but Everybody thought Somebody would follow it through. However, Somebody thought Anybody would work on it. And Anybody thought Everybody should do it. So, Nobody ended up working on it ... AGAIN!

The four worked at a firm with Someone Else and were saddened by his passing. Someone Else had been with the firm for many years and had contributed far more than his share. Whenever Anybody mentioned leadership, Somebody always looked to Someone Else for inspiration and results; "Someone Else can do that job!"

When there was a job to do or a need to be filled, Someone Else always volunteered. Everybody knew that Someone Else was the largest contributor of time and money. Whenever there was a financial need, Everybody, Anybody, Nobody, and Somebody always assumed that Someone Else would make up the difference. Unfortunately, Someone Else is gone and can no longer be counted on. Thankfully, Nobody can do Everybody's and Anybody's work so that Somebody can take credit for the accomplishment.

I'm sure that at some point in time, we are all guilty of having the "somebody else will do it" attitude. You know what I'm talking about — when you don't do something specifically because you think "someone else will do it." People make messes, don't clean up after themselves and don't speak up for something because, "Oh, someone else will do it so I don't have to worry."

BY STEVE KEISEL,
UCLS PUBLICATIONS
COMMITTEE CHAIR



Someone else will be a chapter officer, someone else will participate on a committee, someone else will contribute, someone else has more time, or someone else is more qualified.

This mindset comes into play with the Utah Council of Land Surveyors (UCLS). I believe people want to help, but then they often rationalize and assume someone else will do it and/or think they won't make a difference. If you want to improve the UCLS and the surveying profession, then do it! Don't wait for someone else to do it. Imagine what we could do if everyone chose to do something instead of leaving it for someone else.

Think of the great people who made change happen. They didn't wait for someone else to do something. They took matters into their own hands and made it happen.

Do your part in ridding the attitude of "someone else will do it." Make all the difference you can and encourage others to do the same. Participate in small actions that can — and do — make a difference. Be the someone else you are always talking about, and you'll be amazed at the difference you will make. Now is a critical time to be someone else and do something — anything! ❖

Salt Lake

CHAPTER UPDATE

BY CHRISTOPHER DONOGHUE,
SALT LAKE CHAPTER PRESIDENT

Since our last update, we have had three luncheons:

- The first luncheon was presented by Jim Pitkin who is our DOPL representative. He gave us great information and we thanked him for presenting to us.
- The second luncheon was presented by Trent Williams on Education and Outreach. The turnout was about 15 fewer participants than other luncheons we have had recently. I think that shows the interest in public outreach from surveyors, which is probably why we are struggling with our professional numbers.
- Our third luncheon was at Red Lobster in Murray on Wednesday, June 21. It was presented by Ryan Peterson, who is our legislative consultant. He gave us

an update on the 2023 Legislative session and anything that pertains to the survey industry. Everyone that attended had a great time.

Another luncheon that we are looking forward to is one that got set up by Matt Peterson and will involve bringing in a friend of his to speak on “The Future of Work.” It will hopefully be eye-opening for those attending for any and all changes that they may need to make to keep up with the changing world. ❖

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Golden Spike

CHAPTER UPDATE

BY BAHRAM RAHIMZADEGAN,
GOLDEN SPIKE CHAPTER PRESIDENT

Since our last update, we have had two luncheons. We are also working with the Ogden school district as well as the Historical Committee on placing a monument commemorating the Hayden Survey. We have sent a location and photo of what we want our monument to be and are awaiting a response from the school board.

Our first lunch consisted of Dennis Wenger explaining wetlands and what the process as a surveyor would be. We had our second luncheon presented by Liam Keogh, and he explained what takes place during a deposition and when you are a professional witness. We left the end of the presentation for an open forum for engaging questions and discussions.

We are also looking forward to Trent Williams presenting on Education and Outreach. Ernest Rowley is also tentatively scheduled to speak on Acts of Congress pertaining to railroads. ❖



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The advertisement features a blue header with the Carlson logo and the slogan 'GET IT DONE With Carlson'. Below this, the text 'The leading solutions for Drone to CAD' is prominently displayed. The main visual is an aerial view of a building complex with a drone in the foreground. To the right, a laptop shows a 3D point cloud model of the building, and several software boxes for 'Carlson Point Cloud' and 'Carlson Photo Capture' are shown. At the bottom, contact information for Jim Reinbold is provided, along with the Carlson website URL.

STANDARDS AND ETHICS COMMITTEE

BY EVAN WOOD, PLS,
STANDARDS AND ETHICS COMMITTEE CHAIRMAN



The Standards and Ethics Committee meets every fourth Thursday at 5:00 pm at Meridian Engineering, located at 1628 West 11010 South, Suite 102 in South Jordan, Utah.

Current items of business being discussed by the Committee:

Condominium Model Standards — The Condominium Model Standards were submitted to the Board and approved on April 14, 2023. The new standards can be found on the UCLS website, and we encourage all surveyors in the state to download them and use the document as a guideline when developing condominium plats in the State of Utah. This has been a long process and many hours have been given to get these standards ready for approval. Many thanks to those that have contributed to these standards.

Electronic Filing of Subdivision Plats — On January 1, 2023, the Committee took a proactive approach to work with the counties as they implement their new filing processes.

Complaints About Surveys and Surveyors — Unfortunately, we have been receiving one or more complaints every month. Each complaint is discussed by the Committee to determine the course of action needed

to resolve the issue. At times, the issue is a misunderstanding by the person making the complaint, and the Committee contacts the person making the complaint in an attempt to resolve the matter. Other times, the Committee will issue a Letter of Concern to the surveyor, detailing the Committee's concerns and, if the issue warrants, the Committee forwards the complaint to our DOPL Representative to investigate for possible disciplinary action.

The UCLS has defined the duties of the Committee as:

The principal duties of the Standards and Ethics Committee shall be to review and act on all complaints from surveyors and the general public involving surveying or surveyors' ethics and to prepare and maintain a Standards of Practice Manual. — UCLS By Laws 3.16.f

Those that would like to be involved in the Standards and Ethics Committee, please let us know and we will send you an agenda for the next meeting or how to connect remotely if you are unable to attend in person. ❖



FIG Report



UCLS Board,

From May 28-31, I attended the FIG Working Week in Orlando, Florida. The conference was an eye-opening experience that focused on how we can attract the next generation to surveying. There were a lot of great ideas and meetings on how we can accomplish this.

The first I want to mention is Get Kids into Survey®. Get Kids into Survey is a great program that educates young people about the world of survey. During the meeting, Mr. Trent Keenan, the Western Representative for Get Kids into Survey, talked about how surveyors need to learn about the business side of things. He said, “We are not teaching our crews and technicians about the business and how it is run.” In Australia, they are implementing specific Continuing Education Units (CEUs) about business and the importance of the business side of surveying, and there are ways we can sponsor and apply these wonderful applications here in Utah.

We had a dedicated day to the National Geodetic Survey (NGS) and the things NGS has been doing to prepare for the new datum. There were some amazing speakers that discussed where surveying is going and how the new dynamic data is going to work. It was interesting to get a background on how the datum is going to change day to day and year to year. When we establish a coordinate, there will need to be a time stamp that goes with this data, as the coordinate will be changing with the motion of the tectonic plates.

These are only a few of the things that were discussed at the FIG meeting. Overall, the outlook on the surveying profession now and into the future looks great! As technology continues to develop, we are going to need professionals to operate and conduct quality control on the products that are being produced. I am excited to see all the new things that AI and other technologies are going to bring into our profession. I will end with a great quote I

heard at the meetings. *The best time to plant a seed was 20 years ago. The next best time to plant a seed is today.* We need to get out in front of all ages if we are going to help get the next generation into surveying.

The YSN has two multi-state campouts coming up this summer. The first is at Angle Lake with the Nevada YSN, to register go to <https://nvysn-2023-camping.eventbrite.com>. The other activity will be our big multi-state get-together. We will be doing a stellar observation, hiking, games, eating, and networking with Colorado, Utah, Nevada, New Mexico, and possibly others. We want all our crew chiefs and technicians to come to these activities. I need the support of the licensed surveyors to help get the crew chiefs and technicians to these activities. It is a great opportunity to learn and network with other young surveyors. Scan the QR code to register.



<https://docs.google.com/forms/d/e/1FAIpQLSdzI5QBNKpVbVQeyGaNx-AElwx20DubR9Ceq5E03P7YA1An8A/viewform>

Sincerely,

Spencer McCutcheon, PLS



Brad Mortensen

UCLS 2022 Lifetime Achievement Award Winner

BY MICHAEL NADEAU, TODD JACOBSEN,
DARRYL FENN, AND TYLER BARON

Brad Mortensen, the recipient of the UCLS 2021 Surveyor of the Year Award and the Utah Engineers Council (UEC) 2022 nominee for the Engineering Educator of the Year Award, has been honored once again by the UCLS. This time, he has been presented with the prestigious UCLS 2022 Lifetime Achievement Award in recognition of his exceptional service to our esteemed profession.

The nomination for Brad's award was submitted by Michael Nadeau, Todd Jacobsen, Darryl Fenn, and Tyler Baron. The UCLS selection committee, impressed by his accomplishments, chose to bestow this great honor upon him. On Friday, Feb. 10, 2023, these four surveyors took to the stage and surprised Brad with the award in the presence of his wife Claudia, who admirably kept the award secret for us.

Brad embodies immense strength of character, a positive attitude, humility in all his actions, and a genuine concern for the future of our profession. He earned his BS in Civil Engineering from California State Polytechnic University, Pomona, in 1992 and obtained his California PE. He further achieved PE licenses in Wyoming and Utah. More importantly for us, he also acquired PLS licenses in California, Utah, Idaho, Nevada, and Wyoming.

To fully grasp the extent of Brad's contributions to our profession would require numerous pages in Foresights. In summary, his recent endeavors include serving on the Standards and Ethics Committee for multiple years, acting as the past chairman of the UCLS, currently fulfilling the role of the UCLS board secretary-treasurer, and serving as an adjunct instructor in the SLCC Surveying Program. Moreover, he played a vital role in compiling and writing the 2015 and 2017 updates of the UDOT Surveying and Geomatics Standards Manual, which serves as the definitive standard for control, topographic,

and construction survey specifications throughout the state. Let us also pay attention to his instrumental efforts as chairman of the UCLS ad hoc committee in bringing the State Plane Coordinate System of 2022 into existence for the State of Utah, in close collaboration with the NGS.

When asked about these awards from last year's Foresights magazine, Brad responded: "I fell into the land surveying profession by accident. I was a student in an agricultural engineering program, and the first two courses were on surveying. I fell in love with being outdoors and using my wits to solve problems and collect data. After that, I changed my major and never looked back. The profession has been good to me, so I have tried to give back by mentoring future generations. Receiving the recognition from my peers these last few months has touched me deeply, and with much appreciation, I give my thanks!"

It's our honor to have presented Brad with this distinguished award, and we look forward to many more years of collaborating and moving the profession forward with Brad.

We extend our heartfelt appreciation for Brad's contributions to our profession, and we congratulate him on receiving the UCLS's most esteemed recognition for our members. ❖



PUTTING YOUR COUNTY ON THE MAP



Original land certificate, 1860

Notice the pre-surveyed boundaries on this 1860 land certificate. It specifies section 8, bounded on the east corner of a 320-acre parcel in Sevier County, then part of Kane County.



St. George in the 1860s and 2022

The public may access GIS information on the Washington County website.



Recorder's clipboard and land certificate, 1873

This 1873 land certificate document from St. George's territory is a land in Washington County. Many of the county's natural resources had not been surveyed. After the U.S. government opened a land office in St. George in 1868, they could obtain legal title to land they had already discovered.

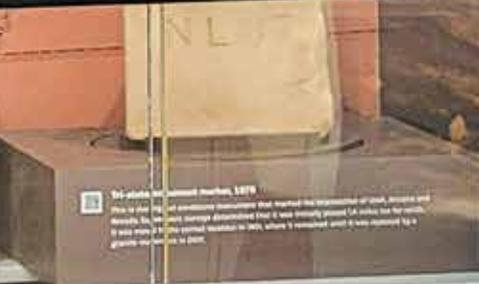


Map of Utah, 1878

As you create anything unusual, something new, your local county was temporary for Washington County's boundaries shifted frequently in the early to middle decades of territory, changing the western line, and the Kane County boundary moved, changing the western line. The county remained in power until 1880.



Baker's Transit level, mid-1800s
This device level is light browned in color. It is made of early iron-ore alloy. It is made of early iron-ore alloy. It is made of early iron-ore alloy. It is made of early iron-ore alloy.



Surveying instrument, mid-1800s
This is the type of surveying instrument that helped the development of Utah, Arizona and Nevada. The first survey instrument that was brought to Utah was for the purpose of surveying the land. It was brought to Utah in 1849, where it remained until it was returned to a private collection in 1900.

Tri-State Monument Display

BY TODD E. JACOBSEN, PLS
UCLS, COLOR COUNTRY CHAPTER REPRESENTATIVE
CITY SURVEYOR, CITY OF ST. GEORGE

On display in the Washington County Office Building is the Tri-State Monument. In the bottom right corner of the display is a sandstone block. This block is the monument that was formerly the marker that located the boundaries of Arizona, Nevada, and Utah.

Between the Utah Council of Land Surveyors (UCLS) 2016 and the 2017 Annual Conferences, the UCLS Executive Board assigned its Color Country Chapter the task of working with the Bureau of Land Management (BLM) in the re-monumentation project of the Tri-State monument.

Upon arriving at the monument in the remote deserts of northwest Arizona, eastern Nevada and southwest Utah, a red sandstone shaft was found. According to 1901 survey notes, this shaft was six feet long, 16 inches broad, and 12 inches thick. From the top down, it was dressed (or smoothed out) eight inches and was marked with letters one and one-half inch square deeply engraved in the stone. There are four sides to this monument, with Nevada on the northwest, Utah on the northeast, Arizona on the southeast, and INTL. MONT 37 N. L. 1901 on the southwest face.

Also, according to the survey notes, there was a raised mound of stones with a five-and-a-half foot base and two-and-a-half feet high surrounding the shaft, which were mostly still there. This monument also stood about three to three-and-a-half feet above the ground. This monument was set in 1901, and when seen on this outing, it showed signs of weathering and some graffiti (engravings from

some of its visitors), but all in all, was in decent condition.

After several meetings and collaborating with the BLM, UCLS, the Arizona Professional Land Surveyors (APLS), and the Nevada Association of Land Surveyors (NALS) association boards and interested members, the task of removing the stone shaft and replacing it with the new monument commenced. The team began with a retracement survey where three survey groups were formed, one group heading north on the Nevada and Utah State lines, one group heading east on the Arizona and Utah State lines, and one heading south on the Arizona and Nevada State lines.

The crews to the east and south went out a mile looking for and tying in old survey markers, while the crew to the north went about one-and-a-half miles looking for old survey markers as well as evidence of an 1870 Survey. Each crew used survey-grade GPS equipment, which gives sub-centimeter accuracy. The measurements and descriptions are a part of the Public Land Survey System Plat and the field notes that are recorded for land managers and public use.

After the retracement survey was completed, the team began to remove the stone shaft monument and build the new monument that is in place today. To our surprise, the bottom of the monument was also dressed (or smoothed out) into a triangle shape (1870 Survey). The three sides of this portion of the monument included Arizona on one side, Nevada on another side, and Utah on the third

side. This stone is now on display at the Washington County Office Building, located in St. George, Utah at 111 E. Tabernacle Street.

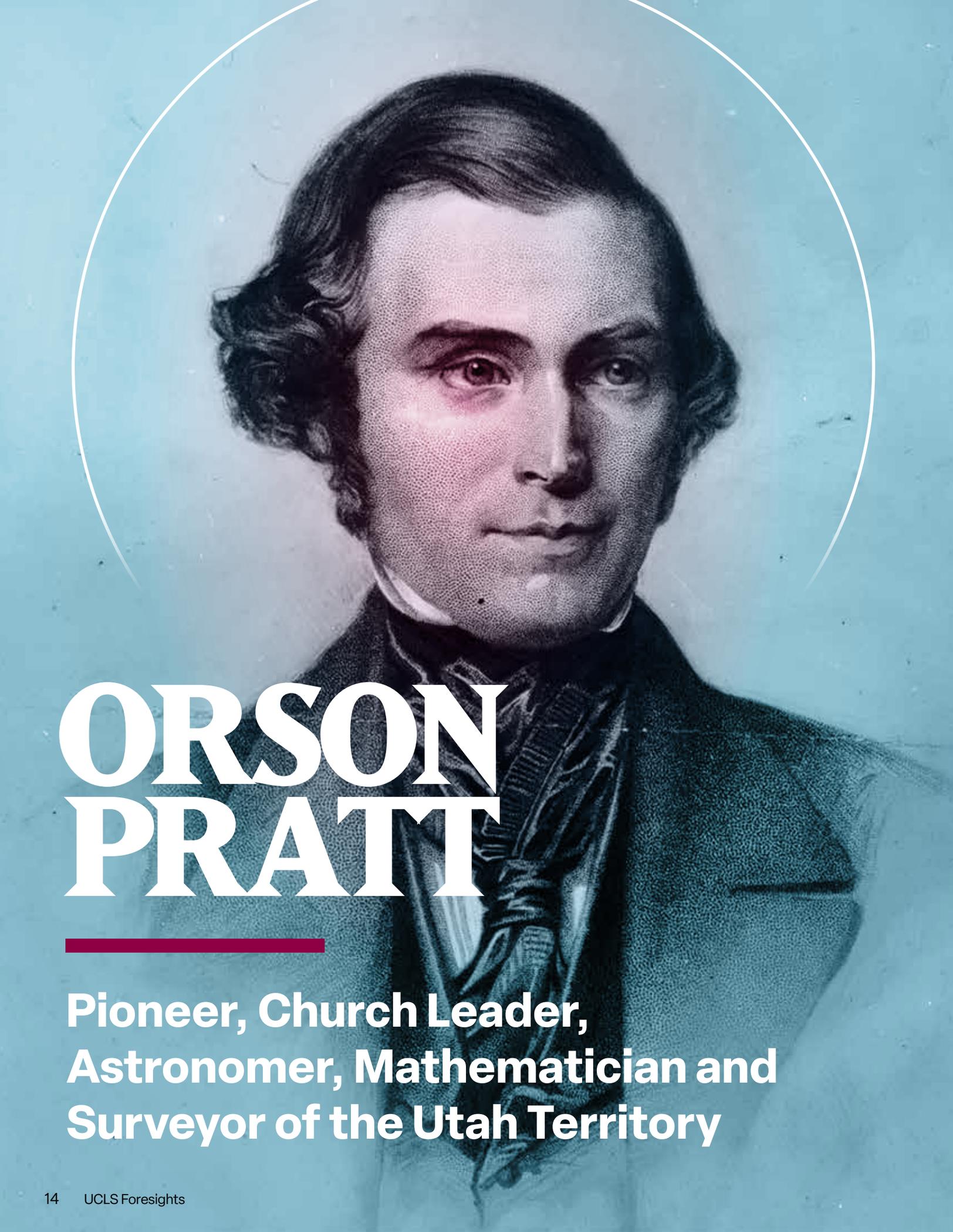
History of the Monument

1870: Under the General Land Office Contract dated August 16th, 1870, Isaac P. James, Astronomer and Surveyor, surveyed the eastern boundary of the state of Nevada. The survey commenced Oct. 17, 1870, and was completed Dec. 26, 1870. During the survey, Mr. James established at the 37th Parallel North Latitude, the corner of Utah, Arizona, and Nevada, at mile 298 and 56.00 chains from his Initial Point to the north on the Central Pacific Railroad.

1900-1901: Under the General Land Office Contract dated Oct. 13th, 1900, Howard B. Carpenter, U.S. Surveyor and Astronomer, was directed to survey the boundary line between the state of Utah and the territory of Arizona. The survey commenced March 24, 1901, and was completed July 1, 1901.

Learning from local people living on the Virgin River near where it is crossed by the line between Nevada and Arizona, old corners on the line were still in existence, and the sandstone shaft that was erected by Mr. James in 1870 to mark the 37th Parallel was still standing. Mr. James proceeded out from St. George, Utah, and Beaver Dam wash, in Arizona and found the 1870 James state line corners. After astronomical observations, it was determined that the "James Monument was 111.51 chains too far north. Therefore, pursuant to instructions, destroy the James corner and proceed to establish the initial corner at the intersection of the 37th Parallel with the James line.

At the intersection of the 37th Parallel North Latitude with the James line, a red sandstone shaft was set. We hope to have the 1901 portion of the stone shaft on display soon. ❖

A portrait of Orson Pratt, a man with dark, wavy hair, wearing a dark suit and a white cravat. The portrait is set against a light blue background and is enclosed within a thin white circular border. The name 'ORSON PRATT' is overlaid on the lower part of the portrait in large, white, bold, serif capital letters.

ORSON PRATT

**Pioneer, Church Leader,
Astronomer, Mathematician and
Surveyor of the Utah Territory**

Spencer McCutcheon is a land surveyor with Apex Engineering. He's been surveying for about seven years and has been licensed for three years. Spencer also loves history; this drove him to learn more about his family and, through his research, to discover that, among other things, he is the fourth great-nephew of Orson Pratt, who was also a surveyor.

During the Fall 2019 National Historical Society Convention, Spencer gave a presentation on the history of Orson Pratt's surveying and the influence he had on establishing Utah and the Western U.S. The following is, in part, the presentation that was given.

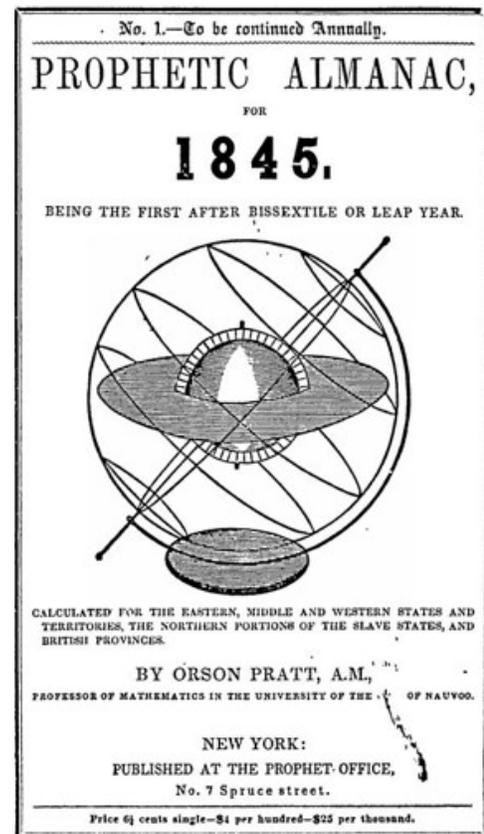
Orson Pratt was born on September 19, 1811, in Harford, New York. Orson always loved school — he loved to learn, and his education was of the utmost importance to him. But he had to help his family and was required to work as a farmhand, and that took up a lot of his time. Orson's goals of education were delayed, and in his own words, he said, "I was obligated to perform farm boy duties for various neighboring farms. Starting in spring and extended to the fall, which limited the time that I was able to dedicate to studies." Orson continued with his education and farm work through his adolescence. Eventually, he enrolled in a boarding school in 1829 at the age of 18. Orson mentioned how much education meant to him and said, "I have made myself thoroughly acquainted with geography, grammar, arithmetic, bookkeeping, and surveying."

Orson took his knowledge of mathematics, geography, and surveying to the next level when he became a Professor at the University of the City of Nauvoo, where he was tasked to help educate the members of his faith.

During his time as a Professor, Orson applied his knowledge and skills to help others by publishing his first almanac. In August 1844, Orson published the Prophetic Almanac for the year 1845. He then published his second almanac in August 1845. These almanacs had a lot of material on eclipses and when and where they could be observed; the expected time of sunrise, sunset, and appearance of the moon; and spiritual thoughts and impressions he had.

During this time, tensions towards the LDS Saints began to increase, forcing them to look for a new land in the west. On Feb. 14, 1846, the Saints started leaving Nauvoo. Orson wrote in his journal about the weather during this time of persecution, saying, "Last night it commenced snowing. The falling of the snow and a cold northwest wind have made the weather very disagreeable." Orson also wrote about the cold weather, saying, "The temperature at six am was five degrees above zero. The Mississippi froze over, and the ice soon became sufficiently firm for the crossing of teams."

Orson also told of some hardships as they were on their trek west. One entry talks about how the buffalo affected the cattle and the company. He wrote, "During the whole day innumerable herds of buffalo were in sight on both sides

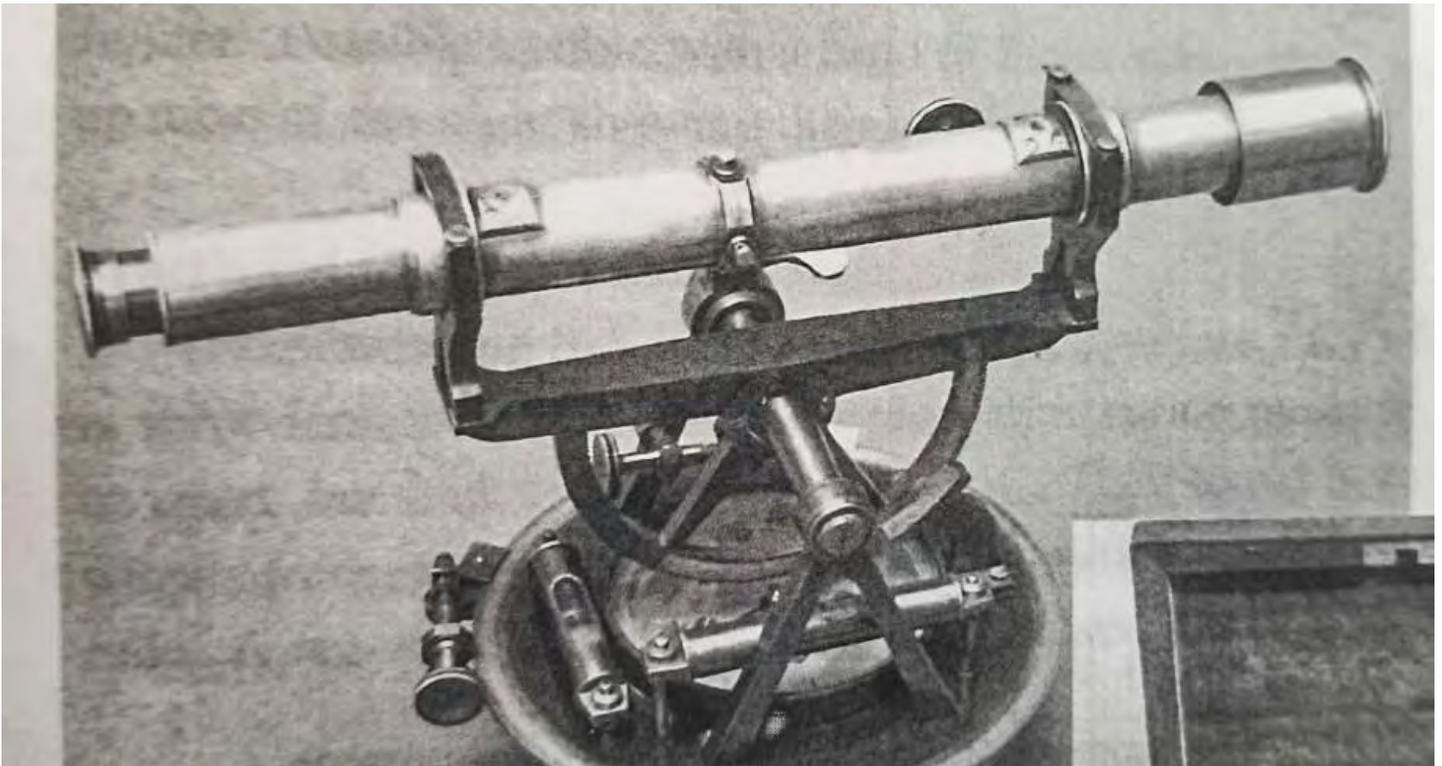


of the river. Many hundreds feeding within a quarter mile of our road did not seem to be alarmed at our approach. During the time of our halts, we had to watch our cattle to keep them from mingling with the buffalo. I think I may safely say that I have seen 10,000 buffalo during the day. ..."

Even with all the persecution and the unknown future for the Saints, Orson still had a great attitude and continued his passion for surveying and astronomy. Orson was included in one of the first groups to travel west. He was given charge of surveying instruments such as the quadrant, artificial horizon of quicksilver, a sextant, and telescopes. During the journey, Orson was to make observations and record information about the trip for future travelers and saints that followed the same trail west. These observations and notes were a crucial part of the success of the other companies as they headed West.

Field Notes

At the beginning of the saint's journey west, Orson did not possess the most current and precise equipment at the time, making his observations even less precise than what was possible. He still did as instructed and made observations along the way. In early 1846, Orson wrote, "During our stay at Sugar Creek, I obtained, by means of a quadrant and an artificial horizon of quicksilver, a meridian observation of the Sun from which I deduced the Latitude of the camp and found the same 40°32'."

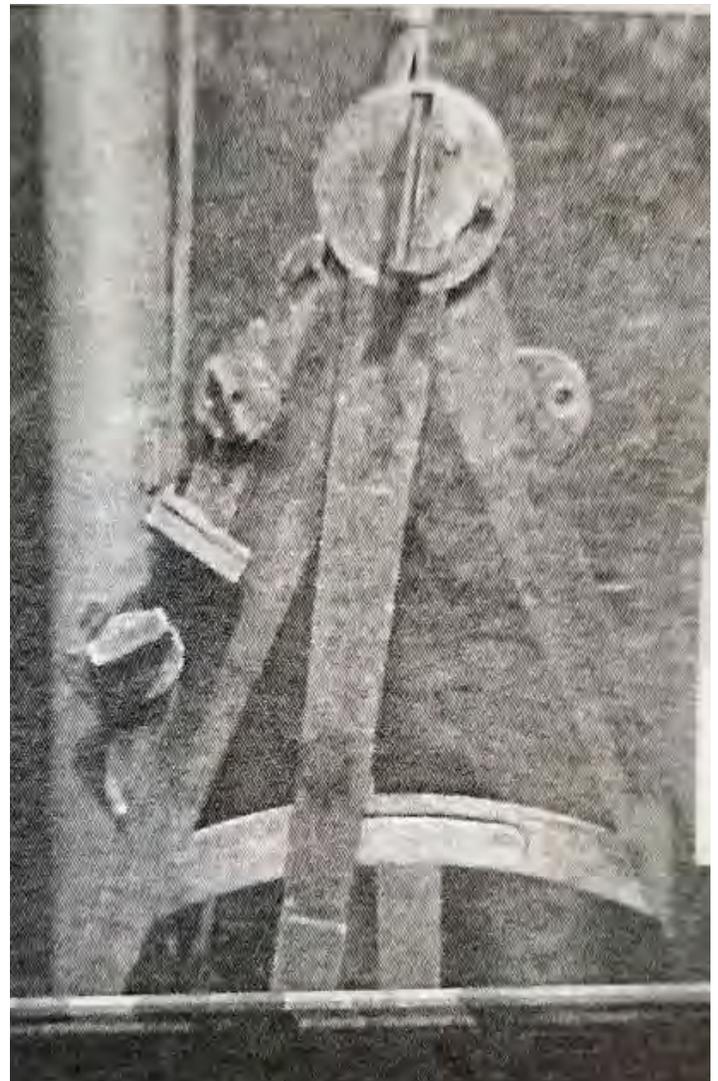


Orson, on this same occasion, wrote of how the inaccuracies of this quadrant affected his measurement, "By a number of observations with the quadrant, I had previously ascertained the latitude and longitude of the Temple at Nauvoo. The latitude being $40^{\circ}35'48''$; the Longitude $91^{\circ}10'45''$." A quadrant, however is a very imperfect instrument for determining the longitude as an error of one minute ($1'$) in the instrument itself, or in the observation would produce in the calculated longitude an error of ($30'$) thirty miles. It is a misfortune that we have no sextant in the camp, neither a telescope of sufficient power to observe the immersions and emersions of Jupiter's satellites."

Sometime in 1846, Brigham Young acquired a sextant and a telescope and gave them to Orson Pratt. These new instruments helped Orson make significantly more accurate observations than he had been making with his outdated quadrant.

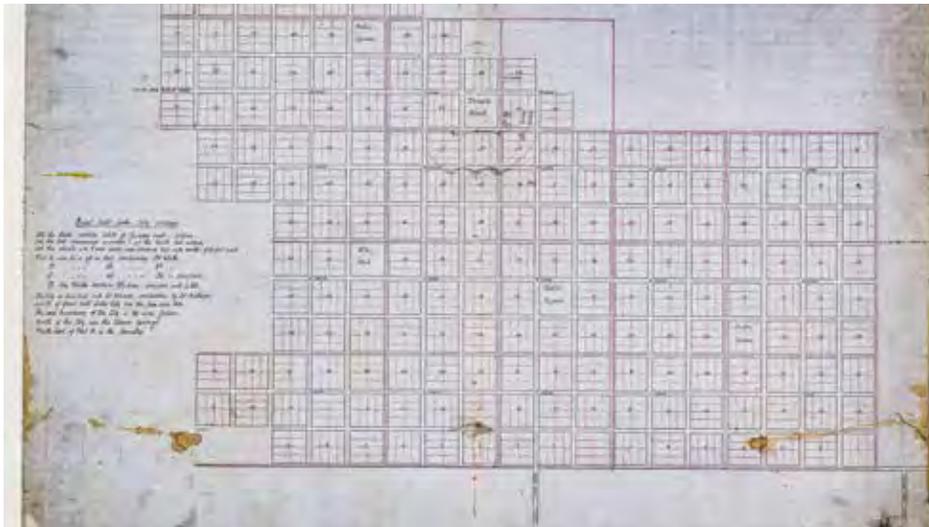
Orson continued to make observations all along the way with his quadrant, sextant, and artificial horizon on the sun, moon, and stars to determine his latitude. He took the latitude of his camp every day that the weather permitted. Orson also recorded eight longitudinal observations at significant points along the way: Loop River, Platte River, Fort Laramie, Fort Bridger, South Pass and Temple Square.

In Orson's field notes, he not only took observations to locate his latitude and longitude, but he also recorded the temperature of each morning, afternoon, and night using his thermometer. He took observations of the altitude of some of his encampments along the way to Utah, using his



barometer, and he calculated elevations of peaks using his sextant and trigonometric measurements.

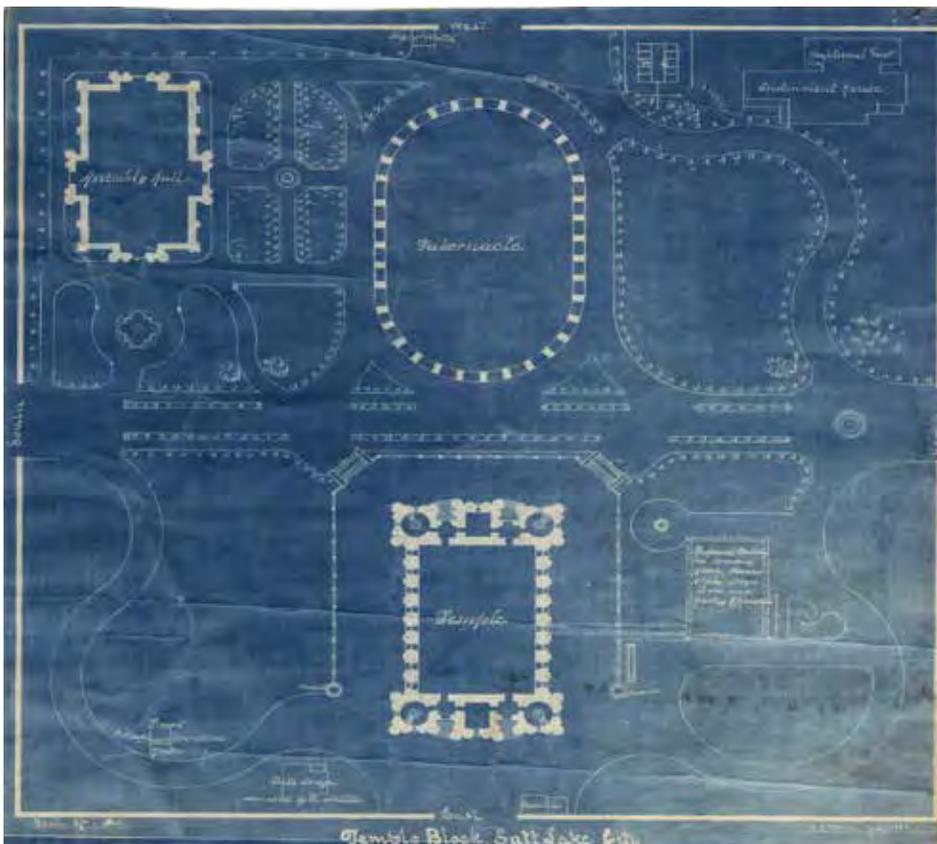
President Brigham Young called on Orson Pratt, William Clayton and several others to determine a way to attach some machinery to one of the wagons to keep track of the distance the company traveled in one day. The odometer had already been invented, so the challenge was coming up with something using their limited resources that could be tailored to traveling by wagon/handcart. Orson writes: "This afternoon, I proposed the (Bellwins) method. Let a wagon wheel be of such a circumference that 360 rotations shall make one mile. ..."



The Saints then used this odometer to keep track of their mileage as they traveled to the Salt Lake Valley. On June 26, 1847, they halted at the last of the main branch of the sweet water. The measurement of the odometer read 275.5 miles since they started recording their miles. On July 21, 1847, Orson Pratt and Brother Erastus Snow entered the Salt Lake Valley. The rest of the company entered the valley four days later.

Temple Block

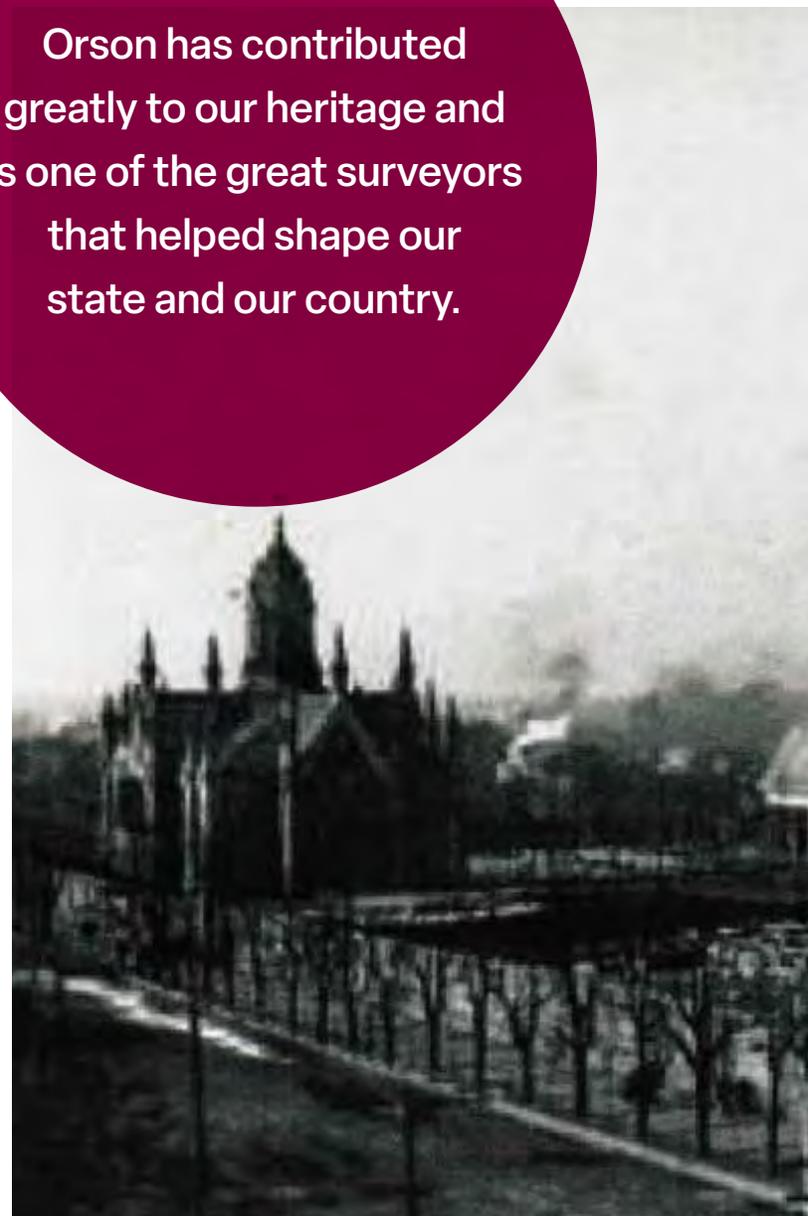
One of the first things that was established was the layout of the city. Orson Pratt was called on to carry out this duty. On July 31, 1847, he began the city layout. With the help of Henry G. Sherwood, the layout of the temple site began. They marked the Southeast corner of the temple site and started naming the city streets from this point. The layout of the Great Salt Lake City was done according to a vision that Joseph Smith had on June 25, 1833, titled the Plat of the City of Zion. The Plat shows the dimensions of the streets and blocks and describes how the blocks should be laid out.



After the establishment of Temple Square, there is no evidence that Orson Pratt participated in any more surveying within the city or surrounding areas — this may be due to his involvement with the church as an apostle. Henry G. Sherwood, Orson Pratt's apprentice, became the Deseret Survey General and performed most of the surveys following the layout of Temple Square. Even though he may have stopped practicing surveying as a profession,



Orson has contributed greatly to our heritage and is one of the great surveyors that helped shape our state and our country.



Orson kept his enthusiasm towards the profession and his love for astronomy.

Base and Meridian

The initial point for the Public Land Survey System (PLSS) was chosen to be the southeast corner of Temple Square. This point was not intended by Orson to be the initial point of the PLSS; rather, he intended it to be the starting point of the lots in Great Salt Lake City. The United States government appointed David H. Burr to be Utah Territories' first General Surveyor. Burr arrived in Salt Lake on July 27, 1855, and upon his arrival, he was to establish the initial point for the PLSS. Instead of setting his own monument, Burr took advantage of an established corner that the public was using. In September of 1855, Burr paid a well-known stonecutter by the name of Benjamin T. Mitchell to make a sandstone monument that he placed to mark this initial point. Burr then began contracting surveyors to begin the PLSS system in the Utah Territory.

Pratts Observatory

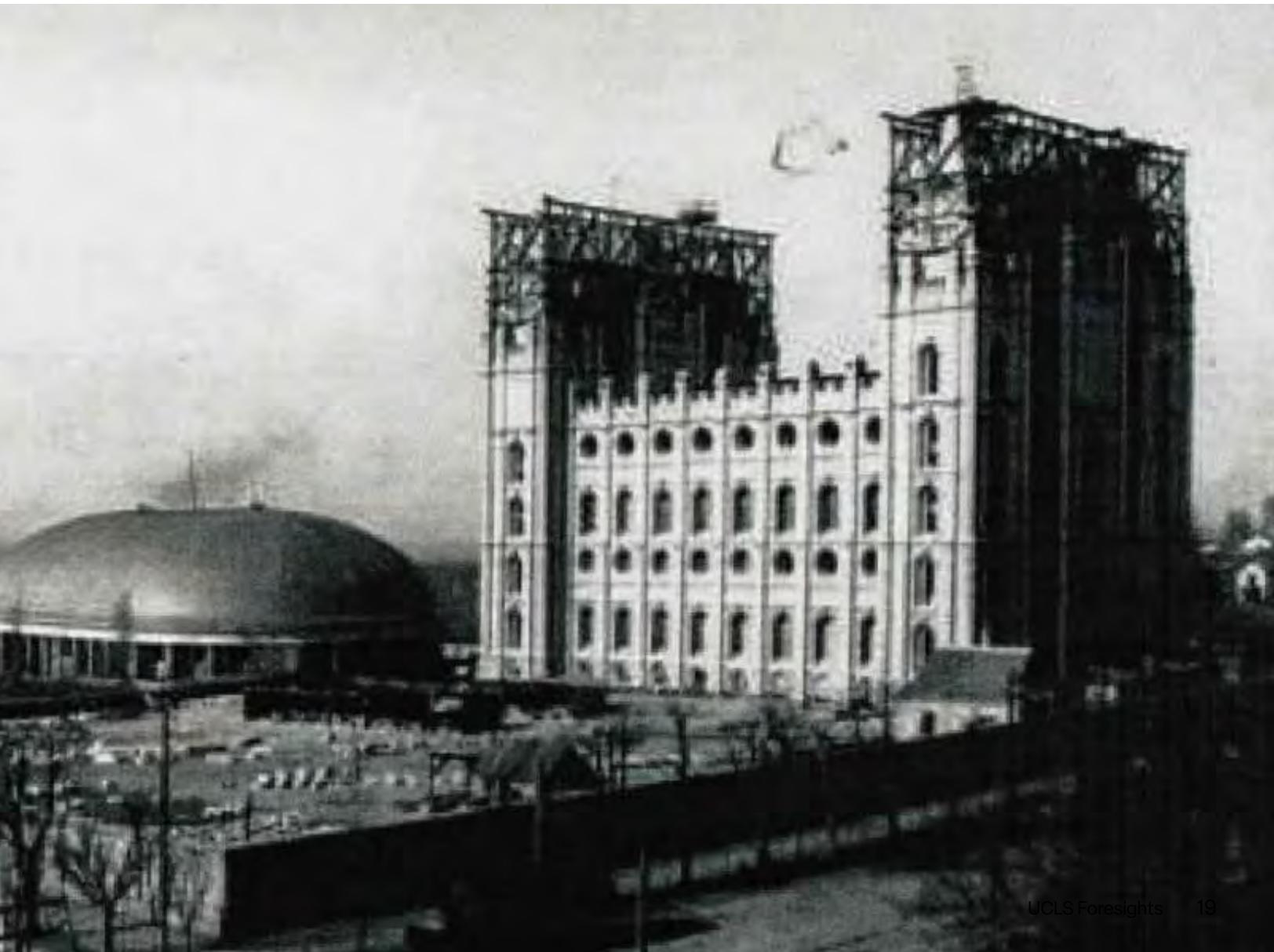
In 1869, George W. Dean and F. H. Agnes were sent to Salt Lake City to get a precise latitude and longitude of the city to help establish the exact time for many of the main

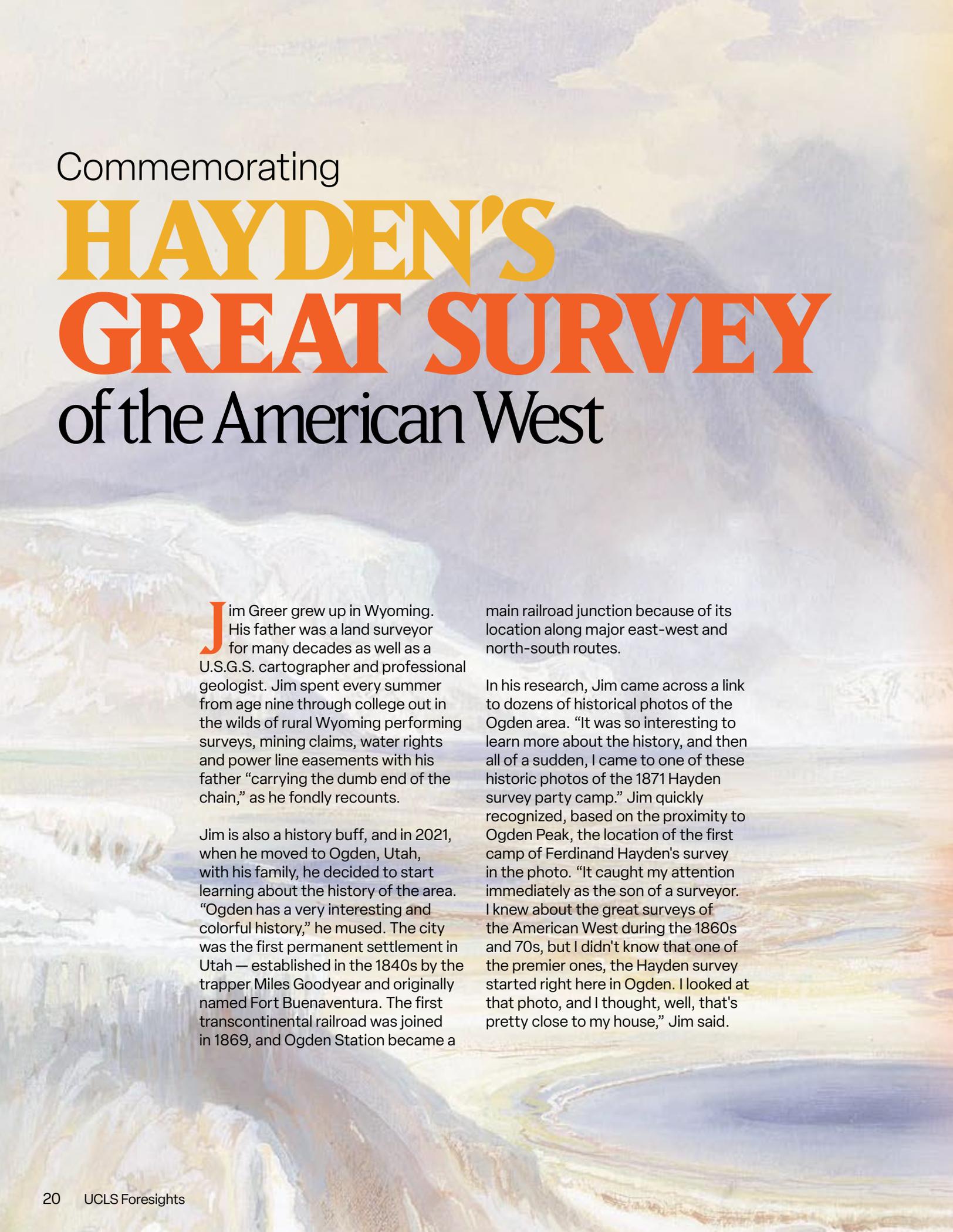
cities in the west. Dean asked Brigham Young if he would help them establish an observatory so that they could accomplish their work. Brigham Young agreed to help Dean construct the observatory and even provided the funds for the construction. The building was named after Orson — Pratts Observatory. Today, Pratts Observatory has been moved; the building is located at This is the Place Museum in Salt Lake City.

Conclusion

Utah's history of surveying is very complex and loaded with information, as well as rich with documented accounts from many individuals. Orson Pratt's contribution is only a fraction of this history, but it is an essential part. His notes and journal entries are full of observations, calculations, and stories about his surveying experiences. He accomplished these great achievements using primitive equipment.

Orson has contributed greatly to our heritage and is one of the great surveyors that helped shape our state and our country. A Base and Meridian monument has been erected to honor all of the work that has been done. It can be found on the southeast corner of Temple Square. ❖



The background of the page is a painterly landscape. It features a range of mountains in shades of blue and purple, with a large, calm lake in the foreground reflecting the sky. The style is soft and atmospheric, with visible brushstrokes and a warm, golden light filtering through the scene.

Commemorating

HAYDEN'S GREAT SURVEY

of the American West

Jim Greer grew up in Wyoming. His father was a land surveyor for many decades as well as a U.S.G.S. cartographer and professional geologist. Jim spent every summer from age nine through college out in the wilds of rural Wyoming performing surveys, mining claims, water rights and power line easements with his father “carrying the dumb end of the chain,” as he fondly recounts.

Jim is also a history buff, and in 2021, when he moved to Ogden, Utah, with his family, he decided to start learning about the history of the area. “Ogden has a very interesting and colorful history,” he mused. The city was the first permanent settlement in Utah — established in the 1840s by the trapper Miles Goodyear and originally named Fort Buenaventura. The first transcontinental railroad was joined in 1869, and Ogden Station became a

main railroad junction because of its location along major east-west and north-south routes.

In his research, Jim came across a link to dozens of historical photos of the Ogden area. “It was so interesting to learn more about the history, and then all of a sudden, I came to one of these historic photos of the 1871 Hayden survey party camp.” Jim quickly recognized, based on the proximity to Ogden Peak, the location of the first camp of Ferdinand Hayden’s survey in the photo. “It caught my attention immediately as the son of a surveyor. I knew about the great surveys of the American West during the 1860s and 70s, but I didn’t know that one of the premier ones, the Hayden survey started right here in Ogden. I looked at that photo, and I thought, well, that’s pretty close to my house,” Jim said.





Above: *First Camp of the Hayden Survey, 1871*
 Below: *Hayden in Camp*

Realizing the significance of the photo and now knowing the location of the camp, Jim decided to reach out to a cross-section of local surveyors via email and pitched the idea of commemorating Ferdinand Hayden's Great Survey of the West (of Yellowstone area) that originated in Ogden, Utah in 1871.

The email read in part, *"One of the Great Surveys of the American West originated in Ogden 150 years ago this year. It all started right here, a short walk from my home. The 1871 Hayden survey party left Ogden on June 8, 1871, and completed their famous Yellowstone mapping expedition at Fort Bridger on Oct. 2, 1871. The improved Yellowstone mapping and great public interest sparked from their survey along with several other expeditions a few years earlier contributed immensely to the U.S. Congress declaring Yellowstone a national park in 1872."*

The email generated a number of responses from interested parties and an invitation to speak at the 2023 UCLS Annual Conference in St. George. Jim filled the historical slot and spoke about Hayden's survey and the ties to Ogden.

The Hayden Geological Survey of 1871 explored northwestern Wyoming and the surrounding region. This was not Hayden's first survey, but it was the first federally funded geological survey



to explore and further document the area that is known today as Yellowstone National Park. Hayden played a prominent role in convincing the U.S. Congress to pass the legislation creating the park.

This was a big deal at the time. The western territory was largely unmapped, and along with Hayden, three other explorers — Clarence King, George Wheeler, and John Wesley Powell — were individually tasked with mapping different sections of the western frontier.



To understand the importance of this event and the conditions under which Hayden was to do his fieldwork in 1871, a letter of instruction was penned from the Secretary of the Interior, which reads in part:

In accordance with the act of the third session of the 41st Congress, making appropriations for the continuation of the Geological Survey of the Territories of the United States, dated March 4, 1871, you are appointed U.S. Geologist, to date from the first day of July, 1871, with a salary of four thousand dollars per annum [an increase of \$1,000]. You will be permitted to select your own assistants, who will be entirely subject to your orders, and all your expenditures of the public funds are expected to be made with judicious economy and care.

The area of your explorations must be, to some extent, discretionary, but in order that you may continue your labors of preceding years, geographically, your explorations of the present season will be confined mostly to the Territories of Idaho and Montana. It is probable that your most available point of departure will be Salt Lake City, proceeding thence northward along the mail route as a base to Helena, Montana, and completing the season's work about the

sources of the Missouri and Yellow Stone rivers. You will be required to make such instrumental observations, astronomical and barometrical, as are necessary for the construction of an accurate geographical map of the district explored, upon which the different geological formations may be represented with suitable colors.

As the object of the expedition is to secure as much information as possible, both scientific and practical, you will give your attention to the geological, mineralogical, zoological, botanical, and agricultural resources of the country. You will collect as ample material as possible for the illustration of your final reports, such as sketches, sections, photographs, etc.

Should your route lead you in the vicinity of any of our Indian tribes, you will secure such information in regard to them as will be useful to this Department, or the Country. It is desirable that your collections in all Departments shall be as complete as possible, and you will forward them to the Smithsonian Institution to be arranged according to law.

You will be expected to prepare a preliminary report of your labors, which will be ready for publication by Jan'y 1, 1872.

The mountains and lakes, rivers and canyons, rock formations, and geysers were unlike anything anyone had seen before, and it captured the imagination of our nation.

Hayden hired and assembled a large team that included topographers, zoologists, botanists, meteorologists and artists, amongst others. Of note, the famous photographer William Henry Jackson, who was originally commissioned by the Union Pacific to capture and document the scenery along various railroad routes, was invited to join the government survey of the Rocky Mountains led by Hayden. He captured the first known photographs of Yellowstone. And Thomas Moran, whose landscape paintings from the expedition still hang in the Smithsonian American Art Museum in Washington, D.C.

An excerpt from Moran's diary describes the awe and beauty that met the surveying party:

"... of the route lay through a magnificent forest of pines & firs all growing straight as a ships mast, & growing but a few feet apart. passed over the debris of a great land slide. where the whole face of the Mountain had fallen down at some time, laying bare a great cliff some 500 feet high. The view of the lake, as we approached it, was very beautiful. It is a small pool formed by the widening of stream at this point, it is not more than half a mile in any direction. The Mountains surrounding it are about 11,000 feet high & about 3000 ft. above the level of the lake having snow still upon them. ..."

*"Grand Canyon of the Yellowstone"
painting, Thomas Moran*





Hayden's Map of Yellowstone, 1871

The mountains and lakes, rivers and canyons, rock formations, and geysers were unlike anything anyone had seen before, and it captured the imagination of our nation. In 1871, the New York Times wrote, *“There is something romantic in the thought that, in spite of the restless activity of our people, and the almost fabulous rapidity of their increase, vast tracts of the national domain yet remain unexplored. As little is known of these regions as of the topography of the sources of the Nile or the interior of Australia. They are enveloped in a certain mystery, and their attractions to the adventurous are constantly enhanced by remarkable discoveries. ... Sometimes, as in the case of the Yellowstone Valley, the natural phenomena are so unusual, so startlingly different from any known elsewhere, that the interest and curiosity excited are not less universal and decided.”*

On March 1, 1872, the 42nd Congress of the United States signed a law titled, *An Act to set apart a certain Tract of Land lying near the Headwaters of the Yellowstone River as a public Park*. This landmark legislation created the first national park.

The Hayden survey party enjoyed the work so much that in 1872, they returned to the same base camp in Ogden, Utah, to continue their work of exploring the western U.S. throughout the 1870s.

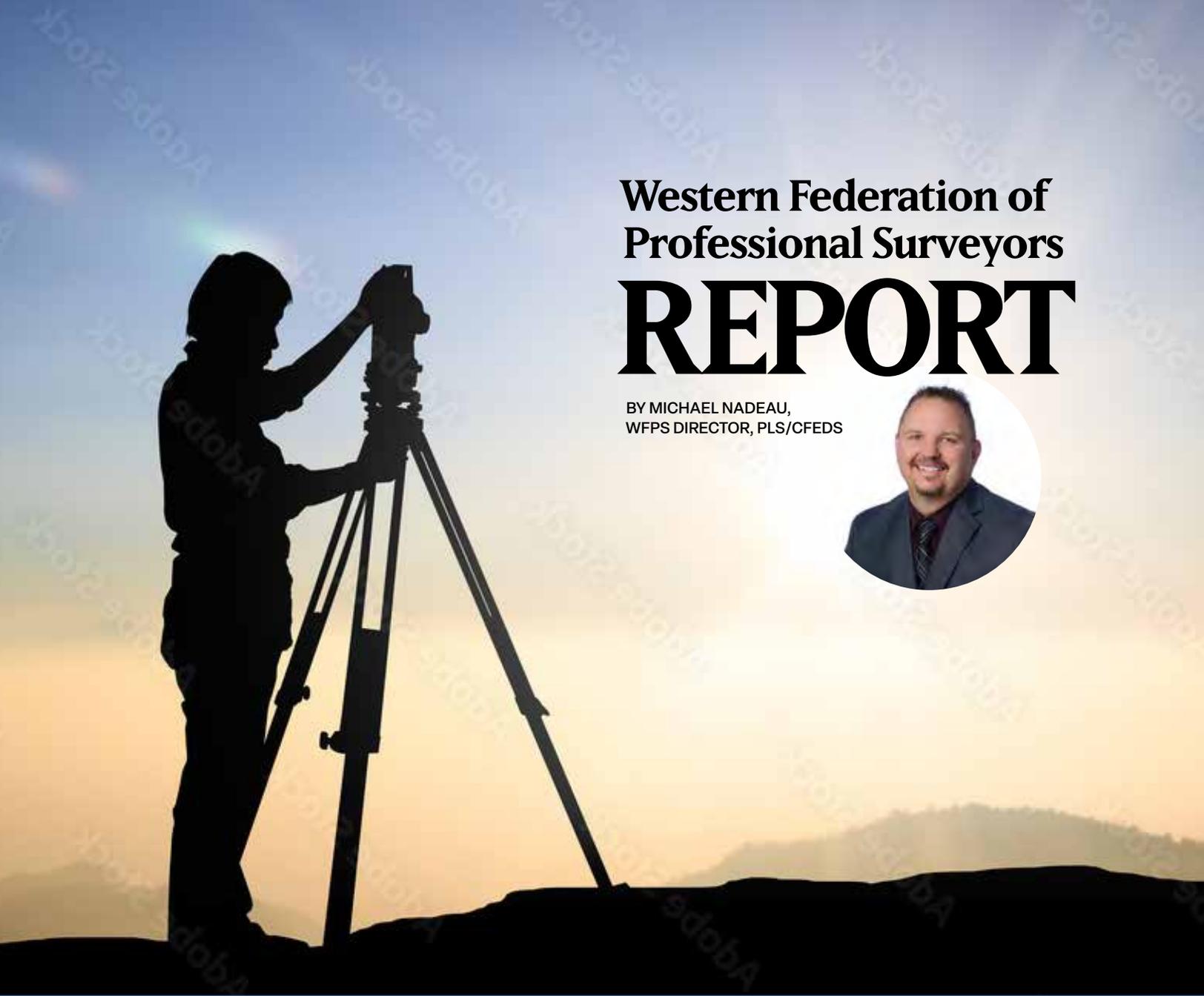
Based on Jim’s research along with others, we know that today, Hayden’s base camp is located near the Ogden High School, around 28th Street and Polk Ave. Jim has proposed that the beginning of this historical event be tied to the end — by erecting a plaque on location in Ogden to commemorate the First Camp of the survey, which inspired a nation and resulted in one of America’s best ideas — our public National Park System. This will, in Jim’s words, *“Celebrate America’s wonderful heritage and freedoms and inspire a new generation of young surveyors, our nation’s future measurers and leaders and the upcoming all-stars.”*

To get involved and learn more about helping this landmark become a reality, please reach out to Bahram Rahimzadegan, Golden Spike Chapter President at <https://tinyurl.com/GoldenSpikeChapter>. ♦



About Jim

Jim Greer has an Engineering degree from the University of Colorado and received an MBA from the University of Utah. He has also attended MIT and Stanford University. He is a U.S. Air Force Veteran and currently works in the energy industry. He is the project director of the Advanced Clean Energy Storage Hub, constructing the world’s largest renewable hydrogen production and storage facility, located in Delta, Utah.



Western Federation of Professional Surveyors REPORT

BY MICHAEL NADEAU,
WFPS DIRECTOR, PLS/CFEDS



Our WFPS meeting took place in Salt Lake City on June 10. It marked the first time in ten years that WFPS has returned to our state since the memorable 2013 joint conference with Utah Council of Land Surveyors (UCLS) and National Society of Professional Surveyors (NSPS), which also involved a portion of NSPS and their student competition held at the South Towne Expo Center. Personally, I am delighted to have WFPS in my home state, and I have extended open invitations to the UCLS board members, encouraging them to attend meetings. It's an opportunity to connect and engage with some of the most brilliant and professional surveyors I have ever had the privilege of being around. This group of surveyors is dedicated to driving the profession forward,

raising its standards, and nurturing the next generation of surveyors, who are becoming increasingly scarce.

Now, let's delve into WFPS's mission statement, which underpins our commitment to advancing the surveying profession. WFPS and its directors passionately adhere to our previously established mission statement: *"The Western Federation of Professional Surveyors is a conduit for interstate communication and provides resources to its member associations. WFPS advances the profession of surveying by fostering common goals and relationships within the western states, promoting public awareness of the profession, supporting education, and providing a regional voice."*

In alignment with this mission statement, let's discuss some notable highlights that WFPS is currently working on or has recently accomplished:

1) While WFPS board meetings occur three times a year, the WFPS Executive Committee (Excom) convenes monthly to ensure ongoing progress within the organization, even during the off-months when the full board does not meet. This practice has proven highly beneficial in achieving WFPS's goals and maintaining alignment with our mission statement. The Excom meetings are conducted virtually to minimize director costs for our member states. Personally, I look forward to these virtual meetings every month as they help me stay focused on my assigned WFPS activities. It's worth mentioning that, in addition to serving as the Immediate Past Chairman of WFPS, I also hold the positions of Conference Committee Chair, Legislative Committee Chair, and Nominating Committee Chair. I must blame Ron Whitehead for entrusting me with these responsibilities when he stepped down from his WFPS tenure (thanks, Ron!).

2) Although Item 2 was previously reported in the last Foresights, I want to emphasize its importance in this report as well. WFPS has launched a comprehensive Fundamentals of Surveying (FS) Exam Study Course comprising approximately 16 hours of video content and a manual. The course covers topics based on the current National Council of Examiners for Engineering and Surveying (NCEES) FS exam specifications and recommended knowledge. Our presenters, Dane Courville, PLS, and Knud Hermansen, PLS, PE, Ph.D., have done an outstanding job developing the course content. I strongly urge all surveyors with technicians, survey drafters, and crew chiefs aspiring for licensure to make this valuable resource available to them. WFPS member states can access the program for only \$199, while non-member states pay \$299 (remember, Utah is a member state, so you get the discount!). Let's ensure the next generation of surveyors receives this valuable information: wfps.org/publications.html. As a side note, a portion of the proceeds from every purchase made by a Utah resident will be sent the UCLS, resulting in a win-win situation for the UCLS and the entire profession.

3) We recently bid farewell to several past WFPS directors who have passed away. Last year, we lost Richard Heieren from Alaska, who had played a significant role in mentoring me when I was a young and inexperienced surveyor on the board. Richard provided guidance not only on board matters but also on life in general. One lesson I learned from him was that sometimes the best response is no response at all. I often apply this advice in various situations. Richard will always hold a special place in my heart, and his absence has created a significant void in the WFPS board. We also mourn the passing of Allen Grace from New Mexico and Pat Cummings from Hawaii in May of this year. While I did not have a close relationship with Pat, I can speak to the impact Allen left on the profession. Allen consistently supported the WFPS mission and was a passionate advocate for

The advertisement features a dark blue background with yellow and white text. At the top, the title "FUNDAMENTALS OF SURVEYING: EXAM STUDY COURSE" is written in yellow. Below this, on the left, is a yellow circular graphic containing the text "ORDER TODAY" and "WFPS.ORG" in black. To the right of this graphic, the text "Over 16 hours of videos and manual" is written in yellow, followed by "Member Price - \$199" in white. At the bottom, in smaller white text, it states: "Topics included are based on the current NCEES Fundamentals of Surveying (FS) exam specifications and recommended knowledge." and "Presenters: Dane Courville, PLS and Knud Hermansen, PLS, PE, Ph.D."

educating young surveyors in New Mexico. One of his final acts of support for WFPS was motioning for New Mexico Professional Surveyors (NMPS) to participate in the joint conference in Las Vegas in 2024 (more details in item 4 below). In fact, prior to his passing, Allen was so enthusiastic about NMPS's attendance at the conference that many NMPS board members jokingly referred to it as "Allen's conference." Such was the dedication and passion Allen brought to WFPS. These surveyors will be greatly missed within WFPS and in their respective states.

4) Let's talk about the upcoming joint conference! Although UCLS is not involved in the 2024 Joint Conference, I cannot contain my excitement as the Conference Committee Chairman for WFPS. The conference will be held at the Horseshoe in Las Vegas, Nevada, from March 22-26, 2024. This event will bring together WFPS, Nevada (NALS), Arizona (APLS), California (CLSA), New Mexico (NMPS), and Wyoming (PLSW). While the specific details are still being finalized, the anticipation surrounding this conference is very high, and I am honored to be a part of it!

5) In my opinion, one of the most significant benefits of WFPS is the collaboration between the thirteen member states. For instance, if UCLS faces challenges in passing a bill through the legislature, CLSA might have already navigated a similar legislative process on the same issue. CLSA can provide guidance, insights, ideas, and lessons learned to assist UCLS in achieving success. The following are some highlights from each state, as summarized during our last meeting in Spokane, Washington (please note that our Executive Secretary was occupied at the conference booth, so these highlights were compiled by us minute takers to the best of our ability).

HIGHLIGHTS FROM THE 13 WESTERN STATES

ALASKA (ASPLS), Gary Gervelis: ASPLS Chapters are hosting virtual statewide meetings on a rotating basis. This reduces the workload for chapter officers and allows members from across the state to network. More information about APLS can be found on their website www.alaskapls.org.

ARIZONA (APLS), Mike Fondren: Current membership is 390, an increase from the last quarter. APLS will rejoin Nevada and WestFed in 2024 in Las Vegas. The AZ-YSN has been actively participating in outreach events including job fairs, career technical education events, and more. More information about APLS can be found on their website azpls.org.

COLORADO (PLSC), Todd Beers: Current membership is 421. PLSC continues to actively participate in Quality Based Selection (QBS) meetings. Board of Registration will be going through sunset review process beginning in September 2023. PLSC will host a Capitol Hill Day at the Colorado state capital during National Surveyors Week. PLSC continues outreach efforts including reaching out to real estate and title companies, middle schools, high school and guidance counselors. More information about PLSC can be found on their website plsc.net.

HAWAII (HLSA), Cliff Yim: Current membership is 119. Right of Entry legislation is being introduced by Senator Kouchi. Plans are in the works for Surveying Geomatics class for UH Manoa in the Fall of 2023. Hawaii Community College is considering making the Geomatics & GIS certificate available again to students in 2023. More information about HLSA can be found on their website hlsahawaii.org.

IDAHO (ISPLS), Austin Ishino: Current membership 243. A new Executive Director and management company have been hired. More information about ISPLS can be found on their new website www.idahosppls.org.

MONTANA (MARLS), Russ Kluesner: Current membership 426, an increase from last quarter. Montana has established a Young Surveyors Network (MT YSN). Ongoing efforts continue to update the MARLS Standards of Practice manual. The 3rd Edition of the Montana Subdivision and Surveying Laws Digest has been published and is available free of charge to current MARLS members, and for sale to non-members. MARLS is currently working on updating its bylaws. More information can be found on their website www.marls.com.

NEVADA (NALS), Trent Keenan and Greg Phillips: Current membership is 287. Great Basin College continues to see good enrollment numbers and the College of Southern Nevada (CSN) has received initial authorization for a new land surveying four-year degree program. NALS continues to publish, print, and mail four issues a year of the Nevada Traverse. NALS will celebrate its 50-year anniversary this year and has planned several special events/programs. NALS continues to focus on outreach and has participated in multiple job fairs, STEM fairs, and career technical education (CTE) events this year. The new Governor has issued an Executive Order requesting that every licensing board eliminate at least ten requirements for licensure. More information about NALS can be found on their website www.nvlandsurveyors.org.

NEW MEXICO (NMPS), Roxanne Nimmer and Diego Cisneros: NMPS held their first conference since the pandemic on October 20-22, 2022. The New Mexico Board of Registration now has filled all three of the LS positions on



the Board. More information about NMPS can be found on their website nmps.org.

UTAH (UCLS), Mike Nadeau: Current membership is 402. UCLS is currently exploring the potential of introducing legislation for Right of Entry for Surveyors. UCLS Standards and Ethics Committee has completed a draft of the condominium guide. The guide has been sent to the UCLS Board for review and adoption. UCLS has a new membership fee structure. More information about UCLS can be found on its website www.ucls.org.

WASHINGTON (LSAW), Ben Petersen and Desi Schilling: Current membership is 813, an increase over last quarter. The 2023 Conference in Spokane was well attended. The 2024 Conference will be held at the Tulalip Resort & Casino. LSAW supported the Board of Registration proposed changes relative to license comity. Department of Natural Resources is proposing an increase for filing and recording fees from \$64 to \$100. LSAW is working with Kris Kline to update the Washington Common Law publication that was originally published in 2009. More information about LSAW can be found on their website lsaw.org.

WYOMING (PLSW), John Lee: Current membership is 124. PLSW held a fall forum in November featuring Dennis Mouland. The University of Wyoming has in place a minor in land surveying and a land surveying certificate program. Information about PLSW can be found on their website www.plsw.org.

INTERNATIONAL RIGHT-OF-WAY ASSOCIATION

The WFPS Board of Directors has completed the Memorandum of Understanding (MOU) with the International Right-of-Way Association (IRWA). The

MOU will allow the two organizations to collaborate more effectively and disseminate information within our associations. The IRWA will be invited to speak at the 2024 Joint Conference.

WESTFED EDITOR'S FORUM

WFPS is pleased to host the newly established Editor's Forum. Editors for each of the WestFed state associations are invited to attend and share information and exchange ideas for building better magazines for their society. For information, please email the WFPS Executive Office at admin@wfps.org

WFPS OFFICERS 2022-2023

The following board directors who currently sit on the Executive Committee:

Ben Petersen (Washington), Chair
Russ Kluesner (Montana), Chair Elect
Trent Keenan (Nevada), Secretary/Treasurer
Mike Nadeau (Utah), Immediate Past Chair

WHAT CAN WFPS DO FOR YOU?

In line with my previous reports, I continue to encourage UCLS members to raise any surveying concerns that can be addressed at a regional level through the WFPS. As your director and representative to WFPS and the former WFPS chairman, I am here to represent you. So please don't hesitate to contact me at MikeNadeau.UCLS@gmail.com. ❖



About WFPS

The Western Federation of Professional Surveyors (WFPS) was formed in 1979. The Board of Directors includes two Delegates from each of the 13 western states. WFPS serves as a regional voice for land surveyors and meets quarterly to discuss practice issues affecting western state surveyors. For more information about WFPS and the state associations, visit WFPS.org production and storage facility, located in Delta, Utah.

NSPS DIRECTOR'S REPORT

BY DAN PERRY, NSPS STATE DIRECTOR

The various meetings held during the Annual NSPS Board of Directors meeting in Arlington, VA, from March 28-April 1, 2023 were very informative and increased my understanding regarding our profession and the many issues that are currently dealing with at the national level.

I have asked to join the CST Board, the Workforce Development Committee, maybe the Public Relations Committee, and the Education Committee because these are the committees I have some knowledge of or to which I think I can have the most impact and will simultaneously be of the most use to the UCLS given my skill set. If the board would like me involved in others instead, please let me know before I make too many commitments to these committees. FYI, all State Directors are automatically involved in all legislative issues, regional councils, and are members of the NSPS Board of Directors.

Due to my outbound flight cancellation, I was unable to make it to the “Day on the Hill” event held on April 29, in which Directors visit the legislators. Although this event is not a requirement for Directors, it is certainly encouraged, and I was very disappointed I could not attend. There were several meetings with Utah legislators and their staff, particularly Sen. Lee, which had been previously set up, but had to be canceled.

The following are my “takeaway” notes, thoughts, and ideas derived from the many meetings. I have several legislative documents which I can make available to the UCLS Board if requested, but I did not want to bog down this report with that volume of documents.

General Notes

- Need State Executive Directors at these meetings — UCLS to sponsor.
- Ryan, Utah Lobbyist — what keywords searches, for what surveyors are involved in, does he use?

Possible Surveying Keywords

- Boundaries
 - Properties
 - Land
 - Development
 - GIS
 - GPS
- Introduced the new NSPS website which has some significant and very useful GIS applications for the benefit of the States.
 - Send .shp file of the Utah congressional districts to Linda Foster, VP
 - Incorporate Pledge of Allegiance at the beginning and end of the UCLS Conference or at least the official business meetings
 - Need a UCLS Backdrop for pictures (put it right up on the stage under the screen)
 - NSPS Foundation and WMCEF
 - NSPS Foundation has a chair. WMCEF could have a Chair.
 - UCLS to transfer 100% of scholarship funds into WMCEF.
 - Does WMCEF have an investment company for these funds?
 - Get WMCEF into an investment mode not just sitting in an account.
 - Consider transferring WMCEF funds, with MOA etc., into NSPS Foundation (\$1.3m investing pool, investment team, NSPS board of trustees) and continue to name the fund WMCEF which funds are accounted for separately in NSPS Foundation
 - NSPS Foundation has been getting an average return of 8%.
 - Foundation Trustees added Dan Martinez (NE) and Cotton Jones (WY).
 - Board of Directors Meeting and Applicable Motions
 - Scouts Surveying Merit Badge Scholarship \$2000 (passed).
 - Technician and CST Membership categories (tabled) need input from Affiliates.
 - How is UCLS organized in terms of membership categories?
 - What do we recommend to NSPS?
 - NSPS Policy on Graduate Education in Surveying.
 - Next Meeting in Cleveland, OH, on Sept. 20-22, 2023.

- NSPS meeting structure held all committee meetings on the first day, then the official business meeting at the end. Suggest UCLS have a committee track allowing sufficient time for all committee meetings to be held on the first or second day in which much could be accomplished, collaborated on, and coordinated. General membership could get more involved with the committees even if they were not official committee members they could visit based on their own interests and contribute as they wish.

Legislative Issues

- Get involved early on and at home with staff and representatives/senators.
- The country is being run by 20-year-olds — why not have YSN's involved in the UCLS?
- All current bills are authorization bills.
- Sen. Lee's bill has not been introduced to the 118th Congress yet.
- MAPPS (broadband) is of most interest right now.
- FLAIR
- Licensure elimination or reduction awareness.
- Asked to participate in the Graduate Education candidates' shortage ad hoc committee.
- Rep. John Curtis, 3rd Congressional District of Utah, sits on a GIS Working Group and they currently are just ignoring the surveying element (probably a staffer that has a GIS background).
- To meet with our legislators at the National level back home here in Utah.

Certified Survey Technician (CST) Board

- CST Coordinator, by default is the NSPS State Director unless States appoint another.
- Employers to provide financial or other incentives and support to their employees to obtain and maintain various CST levels, including title, pay, and performance.
- Connect CST to a technician and LSIT and incorporate this LSIT title into regulations to be maintained by the LSIT indefinitely (if desired), but they must complete eight hours per year (whatever hours). This name could be Survey Practitioner (SP) or Assistant (SA) instead.

- CST Training — something will happen on an NSPS basis.
- Encourage, and implore, all government contracts to require CSTs (Florida, Ohio).
- CST is good for people transitioning from the military or another career into surveying.

Workforce Development Committee (new term used in place of “Recruiting/Marketing”)

- Communicate with Utah Workforce Development.
 - CST program
 - Certificate programs
 - Military and other career fields that can potentially transition into surveying
 - Military Programs: TAPS, Bridges
 - Small Biz Community to work with Workplace Development Committee.
- Implement a Technician Track at UCLS Conference
 - Lower conference fee
 - Training focuses on CST training
 - LSITs to participate and earn their eight PDH’s
- Marketing — Recruiting people to surveying and mapping
 - Develop a short PPTX to illustrate the labor shortage problem in surveying.
 - Sources
 - Foster Care Completer’s (kids exiting the program at 18 they are totally left to themselves)
 - Skate parks
 - Geocacher’s
 - Technical or Magnet High Schools
 - ATC’s (across the State)
 - Related organizations ASCE, AGC
 - All stakeholders (people who use and need surveyors)
 - Construction
 - Civil Engineers
 - Government- UDOT

Education Committee

Key term used a lot during the meetings is “Pathways” from elementary-secondary (HS) school- to the Profession (compare it to the integration of the engineering pathway currently established)

Cline HS, Texas Surveying program (got 3rd place in 2023 NSPS Student Survey competition against Associate Programs) ❖



When I was a child, my dad, a civil engineer and surveyor, would regularly tell my brother and me, “Heads down and butts up,” referring to digging a trench or hole, but the meaning is to get in and get to work and don’t stop until you get the job done. It has been great advice over the years, and I certainly learned to work hard from my dad. But I have also learned over the years that occasionally we need to STOP and take a little time to “stand up,” if you will, and look around to see where we are, where we’ve been, and where we want or need to go. For me, experiencing new and different people and places has often led me to change the way I see things. Perspective is critical. Mahatma Gandhi once said, “Speed is irrelevant if you are going in the wrong direction.” Because our profession is facing such a serious qualified labor shortage, I have been trying over the past several months to see surveying and mapping differently while asking the question, “How can we get many more young people interested in our profession?” I have learned several important things during this time and this past week helped me see



NSPS State Director — Supplemental Report

FIG Working Week 2023

BY DAN PERRY
NSPS STATE DIRECTOR

our surveying and mapping world differently — I now have a different perspective.

The International Federation of Surveyors (FIG) held its annual Working Week conference in Orlando, Florida, this year. This annual meeting takes place in various countries around the world. The last time it was held in the United States was in Washington, D.C. in 2002 and previously in New Orleans in 1993, and in Washington, D.C. in 1974. So, the Utah Council of Land Surveyors (UCLS) board thought it was a good opportunity for us to participate and learn without spending too much money. Spencer McCutcheon, our UCLS-YSN Representative, and I received authorization to participate.

This conference further expanded my perspective of the surveying and mapping profession. There were many great presentations by surveyors and land professionals in over 80 different countries with 300+ presentations to more than 1,500 attendees. Taking advantage of many networking opportunities, I got to know people in the academic, public, and private sectors from South Africa, Ghana, Trinidad, Tobago, Germany, England, Ireland and the Netherlands, to mention only a few.

Seeing how and why the surveying profession plays such a vital role in people's lives around the globe really opened my eyes. It is also incredible knowing where everything is along with where those things

move and how much knowing that information impacts not just property boundaries, but also all navigation systems, weather patterns, agricultural conditions, environmental sustainability, military actions, and much more. Today, people want to know more than just “what” something is, they want to know “where” it is — where everything is, and where they are relative to it. This means surveying and mapping touch nearly every physical aspect of our lives. Surveyors around the world are playing a critical role in the future of geospatial data collection and management and are involved with technologies like “Digital Twins,” VR, AR, and 3D models. A few quotes I heard at the conference might help you also see the world differently:

- “65% of school children today will work in jobs not yet created.”
- “We have more people living longer in fewer places wanting more economic, social, and environmental sustainability.”

Dr. Diane Dumashie, a native-born Ghanian, a Registered English Surveyor, trained in England, and the current President of FIG gave a keynote presentation titled “Serving Society: Benefitting People and the Planet, Tackling the Global Challenges.”

Just the title alone tells you she and the FIG organization have some lofty

goals. They are looking at the world of surveying and mapping in a much broader sense. They really see how much impact we as surveyors and land professionals have on our society and the whole planet.

By way of recruiting new people to this great profession, and as a result of what I have been learning and having freshly obtained a “new perspective,” I plan to “frame” the surveying and mapping message in some different and creative ways which should attract more 16- to 30-year-olds. More to come!

If you want to know more about the 2023 FIG Working Week conference, its presenters and presentations, along with its mission and goals, scan the QR code. The conference has not yet been published but you can still learn and perhaps change your perspective.



<https://www.fig.net/fig2023/index.htm>

Let's remember, recruiting young people into this unique and amazing profession benefits the whole profession. ❖

What is a Land Surveyor?

BY ANDY HUBBARD, PLS
UCLS CHAIR

Over the years, I have heard many thoughts expressed about what a Land Surveyor is, from a person with a clipboard asking demographic questions used for compiling a statistical view anything, to the guy on the side of the road looking through the camera, to someone who knows and understands what a Land Surveyor does. The point is when people hear the title “Land Surveyor,” it varies depending on their background and experiences. Many people will never need the professional services of a Land Surveyor, but if you find yourself in need of one, this may help you.

The Merriam-Webster Dictionary defines surveying as “to determine and delineate the form, extent, and position of (such as a tract of land) by taking linear and angular measurements and by applying the principles of geometry and trigonometry.”

A Land Surveyor could then be defined as someone who performs the act of surveying. They could also be described as a professional who measures and maps the land and its natural and man-made features. Their primary function is to determine the features, location, size, and boundaries of tracts of land or properties, using mathematics, legal principals, together with specialized measuring equipment such as GPS, total stations, and laser

scanners to collect data and create precise measurements and maps.

Many people only encounter a Land Surveyor when they are uncertain as to the location of the boundaries of their property. This uncertainty usually arises from questions about fence lines or other forms of occupation like hedges, concrete pads, building setback requirements etc. The ability for a Land Surveyor to accurately determine a boundary location is one of the reasons Land Surveyors should hold a professional license.

Some may associate Land Surveyors with the construction industry, where they play a vital role in preparing and laying out building and infrastructure projects. Land Surveyors can provide precise measurements, and site maps that are essential for site planning, grading, alignment and foundation work.

Land Surveyors also play a crucial role in Geographic Information System (GIS): data collection and mapping. GIS systems are used to manage and analyze geographical data and Land Surveyors can provide accurate data and mapping for a range of industries such as agriculture, environmental management, and urban planning.

Land surveyors may work for or with government agencies to ensure compliance with regulations and

requirements related to land use and development as determined by local land use authorities.

Land surveyors must be skilled in using a range of tools, including hand tools, electronic surveying equipment, GPS, and computer-aided design software.

Those who have encountered a Land Surveyor hopefully have had a positive experience and will trust and recognize Land Surveying as a highly technical and specialized profession that requires advanced knowledge of mathematics, property and boundary law, science, and technology.

I am optimistic this will help you understand that a Land Surveyor is a highly skilled professional who provides essential services to a wide range of industries and individuals. They are regarded as experts in their field, and their work is crucial for property ownership, property rights, construction projects, GIS data collection and mapping, and government regulations.

If you would like more information about what a Land Surveyor is, you can contact me at andyh@greatbasineng.com or visit the Utah Council of Land Surveyors (UCLS) at www.ucls.org or talk to your local state surveyors organization, to find out more. ❖

A land surveyor wearing a yellow hard hat, safety glasses, and a high-visibility vest is operating a surveying instrument mounted on a tripod in a grassy field. The surveyor is looking through the instrument's eyepiece. The background is a clear blue sky. A large yellow circle is overlaid on the right side of the image, containing text. A blue circular line is also present, partially overlapping the yellow circle and the surveyor's head.

Land Surveyors can provide precise measurements, and site maps that are essential for site planning, grading, alignment and foundation work.

UCLS

Award Recipients

2022 SURVEYOR OF THE YEAR

Trent Williams (*Awarded 2023*)

LIFETIME ACHIEVEMENT

Brad Mortensen (*Awarded 2023*)

2023 PLAT COMPETITION

SUBDIVISION PLATS

First Place — **Kent Withers**, McNiel Engineering

TOPOGRAPHIC SURVEYS

First Place — **Dusty Bishop**, Ensign Engineering
Second Place — **Shaun Corey**, York Engineering

RECORD OF SURVEY MAPS

First Place — **Dale Robinson**, Sunrise Engineering
Second Place — **Kent Withers**, McNiel Engineering
Third Place — **David Hanrion**, U.S. Forest Service

ALTA/NSPS SURVEYS

First Place — **Andy Hubbard**, Great Basin Engineering
Second Place — **Dusty Bishop**, Ensign Engineering

MONUMENT RECORD

First Place — **Dusty Bishop**, Ensign Engineering





The Walter M. Cunningham EDUCATION FOUNDATION

The Walter M. Cunningham Education Foundation, a sister organization of the UCLS, is a nonprofit corporation that provides funding and grants to low-income students and provides academic opportunities and educational experiences to Surveying, Mapping, and Geomatics students.

Walter Cunningham was a beloved land surveyor who unfortunately passed away in January 2023. The foundation continues to carry on his legacy of educating and supporting students with academic opportunities and educational experiences.

Walter's surveying career started in 1966 while helping a local land surveyor find property-corner monuments for a construction project on Alaska's Kenai Peninsula. From then, he performed private and public-sector work on a wide variety of construction, boundary, public lands, mapping, and oil-field projects. Walter earned a Bachelor of Science in Mapping from Brigham Young University in 1988, followed by a Utah Professional Land Surveyor's (PLS) license in 1991.

While operating his full-time surveying business, he was hired by Salt Lake Community College (SLCC) in 1994

as an Adjunct surveying faculty member. In 2004, he accepted a full-time position at SLCC, where he coordinated the Surveying & Geomatics Program and taught in it as an Associate Professor. He was a member of the Advisory Board for Utah Valley University's (UVU) four-year Geomatics degree program and served two years on the National Society of Professional Surveyors (NSPS) Certified Surveying Technician (CST) Board. He similarly served three years on the SLCC Faculty Senate. He was an avid supporter of the UCLS, serving at the Chapter and State levels in various positions and assignments, including Chair of the Education Committee. Walter was honored by the UCLS as the 2006 Utah Surveyor of the Year and by the Utah Engineers Council as a 2013 Engineering Educator of the Year. He was also a recipient of the 2015 SLCC Foundation's Teaching Excellence Award. He retired from SLCC in 2017.

Since its inception in 2018, the foundation has continuously participated in UCLS fundraisers and events to not only raise money for the scholarships but also to promote land surveying as a career to the next generation. ❖

Please Consider Donating

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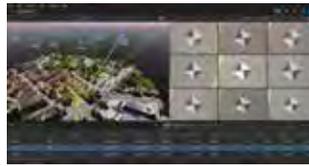
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