

FORE SIGHT! MAGAZINE

A GEOMATICS STUDENT-RUN MAGAZINE DEDICATED TO
INDUSTRY PARTNERS & ORGANIZATIONS ACROSS THE GLOBE

Spring 2017



INSIDE: **The Leica P20**

56th Annual Geomatics Conference

FRESNO
STATE

Lyles College of
Engineering

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GEOMATICS ENGINEERING

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Letter from the Editor:



Hello everyone! This is your editor Stephen Castillo! I decided to try a different format this time around for the magazine. I think it looks young and fresh! First off, I'd like to say the program is doing great! With a successful 56th annual GME conference, the only direction the Geomatics Engineering Department at Fresno State can go is forward! I hope you all like the new technology section! Thank you for taking the time to support the program, whether it be a quick read of the magazine, or support in any other form! Until next edition!

Publication Statement:

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EVENTS

56th Annual Geomatics Engineering Conference!

The 2017 GME Conference took place January 27th and 28th in Downtown Fresno at The Double Tree Hotel.

For future information regarding future conferences, please visit fresnostategeomatics.com to find out how you can participate!

Don't miss out on one of the best geospatial community gatherings on the West Coast!



INNOVATE. DESIGN. LEAD. SERVE.

READ ALL ABOUT IT!

Stories from the interns

MY INTERNSHIP EXPERIENCE

BY: ASHLEY AGUIRRE

In 2016 I completed an internship with Pacific Gas & Electric company working on settlement surveys of dams that the company monitors. I went in to my internship hoping to get a lot of field work knowledge, and I believe I was able to accomplish that. I learned how to get my legs setup in one minute and 22 seconds which a lot faster than when I started out this summer's time with. Not only did I accomplish that but I learned how to approach a survey when having to do a LIDAR scan while out in the field. I also had the chance to learn how leveling was an important aspect of the settlement surveys for the dams. I also got the chance to see how planning an effective field work approach before even going out in the field makes executing a job more time efficient. While being out in the field I learned how to be prepared for anything because there are times you could be far away from civilization. I also learned the most important thing to have with you is water because you can never have enough! Along with everything I learned I was surrounded by beautiful sceneries which one part of this field that I love. I have the opportunity in this career to see places I have never been to which was a great experience. I had the ability to complete field notes on all the field projects we worked on which gave me an excellent understanding of how notes are important and should be organized.

INTERNSHIP WITH LEA AND BRAZE ENGINEERING BY: KYLE STREETER

This summer I had the opportunity to work for Lea and Braze Engineering in the Bay Area as my first surveying internship. It was a great experience and I learned a lot of valuable information about land surveying. I had the opportunity to work with a party chief who had over 30 years of experience and I was able to pick up some tricks of the trade from him. I honed my skills working with total stations, data collectors, levels, GPS, and all the little tools that come along with the survey trade. I also learned the connection between office workers and survey crews that go out in the field every day. I got to do a lot of different types of survey jobs such as construction staking, boundary control, monitoring, and topographic maps. My favorite type was the monitoring jobs where we measured for subsidence or up lift on buildings. It required a bit of conceptual thinking and strategic placement of targets to make it work well. Our job sites were all over the Bay Area from San Francisco to San Jose. We mostly worked on higher end projects so I got to work on a lot of big houses with fancy yards. One of my favorite parts of the job was being outside all day long working under the sun with great views. The best thing I got out of my internship was that it really secured the fact that I want to be a land surveyor for the rest of my life. The ability to work outside, whether it be in the city or out in the country is very appealing to me. The hard work, challenging problems and lots of hiking around are all things I'm looking forward to in my future of land surveying.

INTERNSHIP WITH CAL TRANS SURVEYS BY: JAKOB LOPEZ

My summer internship was with Caltrans surveys. It was a very rewarding experience because I was able to work with a great crew and use the latest equipment and completed a lot of surveyor work. From regular topo to establishing property right of way and a little construction staking, it was a great experience. One of the more spectacular pieces of equipment we got to use is the vanguard van, which is a van that's been modified specifically for Cal Trans to allow for protection while working on the highways and roadways. The van has been modified to have a turret like dome near the back of the van that uses hydraulics to rotate to be able to pick up any shot necessary. The van includes four jacks to allow for stability. Inside the turret area there is a tripod that can be raised so that it no longer touches the van so as to reduce the errors through the vibration of the van. The vanguard allows us to set up using a resection where we are to site two or more back sights two accurately know where the total station is located. This is done so as to not have to worry about setting control on the highway in areas that aren't safe or easily accessible. The method we use is to shoot reflector less on the road except when needed to use a prism. The vanguard allows for a good range for measuring. It is accurate up to 125 feet behind and ahead of the van. Using the van, you have to set up every three hundred feet. While this means the possibility of more set ups, one is definitely more safe inside this van. This was just one of the interesting pieces of equipment I got to use this past summer and I cannot wait to learn more from the different surveyors at Cal Trans.

READ ALL ABOUT IT!



Ashley Aguirre, PG&E



Jakob Lopez, CalTrans



Kyle Streeter, Lea and Braze Engineering

READ ALL ABOUT IT!

INTERNSHIP WITH KPFF BY: CRISTINA RUBIO

This summer I had the pleasure to work for KPFF Consulting Engineers located in Portland, Oregon. And yes it was absolutely astonishing and an experience I cannot put a price on. As a sophomore, I applied to my first internship, underwent my first Skype interview, and got hired at my first job out of state. The saying "It is not what you know but who you know" is incredibly true. If it weren't for volunteering at the 2016 California Land Surveyors Association conference I would have never ran into PLS, Survey Manager, and Principal at KPFF Troy Tetsuka, who informed me about the company and potential internship. As their survey intern, I had an incredible time being out on the field as well as working in the office. I commenced with little expertise in AutoCAD, and terminated with a significantly improved set of skills. Unlike school where we utilize Leica instruments and software, I had the opportunity to familiarize myself with Trimble products. I worked on A.L.T.A/N.S.P.S. L and title surveys, topographic surveys, legal descriptions, LIDAR data, sewage scoping, locating property corners, just to name a few. KPFF offered about 10 intern training sessions where three civil interns and I were taught about different aspects of the company: due diligence, liabilities, construction, right of way acquisition, public involvement, permitting, bidding and the list goes on. I was part of the survey crew for jobs out in the University of Portland, Salem, and several locations in the downtown area. I've always been a visual and hands on individual, so it was great to apply the theory we learn in class into real life practice. I thank all my coworkers who helped teach and enrich my knowledge. I specifically thank Kellie Leblond and my Project Manager John Davis for interviewing and making the decision to hire me. KPFF's core values: Excellence, Trust, Relationships, Stability, and Passion were values that were always maintained and the main reason I chose this company. I believed KPFF was my perfect fit.



Laser scan of Lyles College of Engineering sign by Leica P20

READ ALL ABOUT IT!

INTERNSHIP WITH BKF BY: RYAN JACKSON

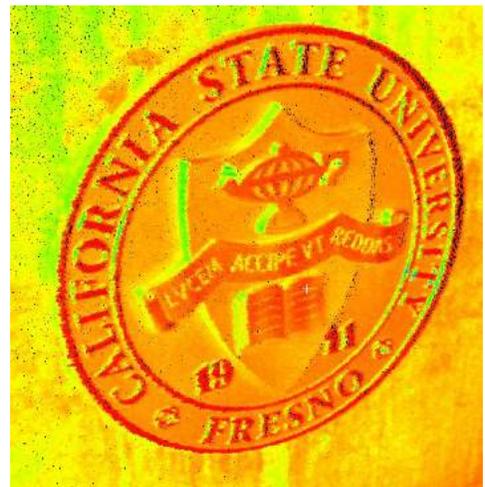
As I write this article of reflection on the summer of 2016, I find myself sitting in a bit of nostalgia as this will be the final article that I write for ForeSight! Magazine due to my spring 2017 graduation date that is fast approaching. There are countless experiences that have given birth to so many memories that I shall not forget, and I am grateful to have had the privilege of building the friendships that I have during my time here in the Geomatics Engineering program at Fresno State. Interestingly enough, when I first began my college career, I was not registered as a Geomatics Engineering major, but rather that of a Civil. However, I harbor no regret for having switched my major; it's actually one of the best decisions I've ever made.

I spent this summer with BKF Engineers for a second go around and I'm glad I took advantage of this opportunity because I learned far more than the last two summers with PG&E and BKF combined. From working on multiple topographic surveys with short deadlines, to record boundaries, to ALTA/NSPS Land Title Surveys, the knowledge and experience I gained has only made me more prepared for the professional industry of land surveying than I could have anticipated. Just in my first week back this summer I was tasked with a topographic survey to be completed for an area in Berkeley, CA, and without any guidance, I jumped right in and quickly produced a map that earned the compliments of more than one of my superiors, stating that I far exceeded their expectations. I even had the opportunity to work on a project that I thought we had completed last summer (2015), but then a year later ended up becoming a full-scale ALTA/NSPS Land Title Survey; you never know how long you'll be involved in a project, so always be diligent about keeping accurate and copious documentation.

Although I didn't spend much time in the field, I was able to spend a day gathering aerial-photos for a couple different project sites; no mapping was performed from the photos; they were used for the sole purpose of reference for drafting.

All in all, I am grateful for my time spent with BKF and PG&E over the last three years and wouldn't change a thing because the lessons I've learned and the experiences I've had have only helped to shape me into the man and future surveyor I am today. I look forward to working in more photogrammetric applications and even legal consulting in the future in addition to project management.

Two very important lessons that I learned are: 1) After driving in Bay Area traffic all summer long where there are at least 4-5 accidents every working day of the week, I have a whole new appreciation for valley traffic i.e. patience, and 2) Being three hours away from my family during the weeks really showed me how important it is for me to find a position with a firm that's located in and around the Fresno/Clovis area because my family is one of the most special parts of my life. I am so appreciative to have had the opportunity to learn from so many wonderfully intelligent people in PG&E and BKF Engineers, and both companies I would highly recommend to anyone who's willing to relocate out of the valley and begin a new chapter in their lives on a different page of California. Lastly, I will just say that as I begin a new chapter in my own life, I only hope that I will have adequately passed on a wealth of knowledge, excitement, and experience to those entering and/or still working in and through the Geomatics Engineering program at Fresno State. Go Dogs!



Laser scan of insignia

IN THE NEWS!

STUDENTS AND FACULTY DEMONSTRATE THE LATEST TECHNOLOGY



In April, Fresno State engineering students and faculty demonstrated the latest technologies in mechanical and geomatics engineering.

Lyles College of Engineering at Fresno State purchased the Leica ScanStation P20 3D scanner to expand its laboratory infrastructure and support advanced research in 3D mapping.

“With strong University and philanthropic support, we are making strategic investments in expanding our laboratory infrastructure for teaching and research,” said Dr. Ram Nunna, dean of the Lyles College.

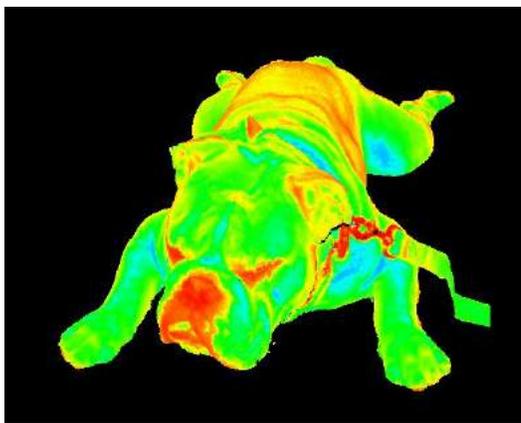
The Leica P20 allows geomatics engineers and land surveyors to scan and collect data at ultra-high speeds while measuring space, angles and distance. What took surveyors about an hour to scan just a few years ago will now take about two and a half minutes.

Fresno State’s live mascot, Victor E. Bulldog III, joined in on the demonstration and got a quick scan from the Leica P20.

“The new scanner collects large amounts of data at much higher rates than our previous scanner,” said Scott Peterson, a geomatics engineering professor. “It can be interfaced with smart phones, tablets, computers, as well as controlled from on-board controls. By utilizing this advanced technology before they enter the workforce, students are better prepared.”

A special interactive project called the Augmented Reality Sandbox was also on hand for guests to create models by shaping sand. Made up of a shovel, sand and simulated rain, the sandbox utilizes virtual topography and water.

“Our students will gain highly desired research and analysis skills which will make them very successful in industry and advanced graduate studies,” Nunna said.



Fresno State's Mascott
Victor E. Bulldog III
Enjoyed barking at his own
image during the event.

Acknowledgements

Thank you to Rebecca Wass for her suggestions and support throughout the editing process of Fore Sight! Magazine.

To all who support the Geomatics Engineering program at Fresno State, thank you.

In closing, a special thanks to our professors for their continued support throughout the semester, and for giving us the gift of their wisdom in the field of Geomatics!

Keep up to date with the happenings of the Lyles College of Engineering using the links below!

-Stephan Castillo, Editor & All Geomatics Engineering Students



Pictured: Dr. Berber and GME students having a good time

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