Schedule at a Glance

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Sunday, April 22
8:00 a.m. – 2:00 p.m. Registration
8:00 a.m. – 5:00 p.m. Committee Meetings
8:00 a.m. – 5:00 p.m. Pre-Conference Workshops

Monday, April 23
7:00 a.m. – 5:00 p.m. Registration
8:00 a.m. – 9:05 a.m. Open Remarks Keynote Speaker
9:15 a.m. – 10:10 a.m. Concurrent Technical Sessions I
10:15 a.m. – 6:30 p.m. Exhibit Hours
10:15 a.m. – 10:55 a.m. Networking Break in Exhibit Hall
11:00 a.m. – 11:55 a.m. Concurrent Technical Sessions II
12:00 p.m. – 1:40 p.m. Lunch & Keynote Speaker
1:45 p.m. – 2:40 p.m. Concurrent Technical Sessions III
2:45 p.m. – 3:25 p.m. Networking Break with Exhibitors
3:30 p.m. – 4:50 p.m. Concurrent Technical Sessions IV
5:15 p.m. – 6:30 p.m. Reception with Exhibitors
6:45 p.m. – 8:30 p.m. Optional: Surprise On-Campus Event

Tuesday, April 24
7:00 a.m. – 10:00 a.m. Registration
7:30 a.m. – 8:30 a.m. Continental Breakfast
8:30 a.m. – 9:45 a.m. Concurrent Technical Sessions V
9:50 a.m. – 11:00 a.m. Exhibit Hours
9:50 a.m. – 10:35 a.m. Networking Break with Exhibitors
10:40 a.m. – 12:05 p.m. Concurrent Technical Sessions VI
12:10 p.m. – 1:40 p.m. Lunch & Keynote Speakers
1:40 p.m. – 2:30 p.m. ASCE Surveying and Mapping Award
2:35 p.m. – 3:25 p.m. Concurrent Technical Sessions VII
3:25 p.m. – 3:40 p.m. Afternoon Break
3:45 p.m. – 4:30 p.m. The Future of Surveying / Closing Session
Welcome from the Conference Chairs

It is with great pleasure that we welcome you to Cal Poly Pomona for the Utility Engineering and Surveying Institute 2018 Surveying and Geomatics Conference. In the spirit of the educational objectives of our geospatial engineering program, it is our goal to bring surveyors and engineers together. This conference will be a rich venue for discussions in a wide range of subjects linking surveying and engineering, specifically in applications to sustainable infrastructure development. The program offers two pre-conference workshops, and over 50 technical paper presentations split in three parallel sessions. Four keynote speaker sessions will address surveying in land development projects, licensing, natural disasters, and the future of surveying.

We expect that your active participation in the discussions for each presentation will contribute to shape and advance how surveying and engineering interact to solve infrastructure problems with impact to societal and economical problems.

The networking opportunities will extend to experts from all over the country and exhibitors, with a reception on Monday evening. This conference will surely be a great avenue to connect with old and new friends from very diverse professional backgrounds.

The ASCE Surveying and Mapping Award, established in 1969, has in the past been awarded annually in other venues. The 2018 Award will be bestowed on the second day of the conference.

Finally, we invite you to come enjoy spring in Southern California, along with all the prospects that the region has to offer. Cal Poly Pomona campus is an effervescent haven on the edge of Los Angeles, Orange and San Bernardino counties, with very close proximity to Riverside county. Participants will be able to engage in a bubbling and very diverse student body, as well as take advantage of the nearby tourist attractions.

We look forward to meeting you in April 2018!
**Ground Truth for the Future: Low Distortion Projections and the State Plane Coordinate System of 2022**

8:00 a.m. – 12:00 p.m., URSA Major A

Map projections are distorted — it is a Fact of Life. The crux of the problem is linear distortion: the difference between true horizontal “ground” distance and its projected representation. This difference often exceeds 1 foot per mile (20 cm/km) for State Plane and other existing published coordinate systems. Such linear distortion can be problematic for various geospatial products and services, including engineering plans, survey plats, construction staking, as-built surveys, and facilities management. Linear distortion cannot be eliminated, but it can be minimized using low distortion projections (LDPs) — although some situations can prove challenging for designing LDPs that perform satisfactorily. This workshop shows how LDPs can be designed to achieve optimal performance even over relatively large areas with variable topographic relief. Importantly, the design procedures are based on the same conformal map projection types used for the new State Plane Coordinate System of 2022 (SPCS2022): Lambert Conformal Conic, Transverse Mercator, and Oblique Mercator. The workshop also provides an overview of the history of State Plane and current plans for development of SPCS2022, including proposed options for states and territories to adopt LDPs as part of SPCS2022. Beyond consistency with SPCS2022, another benefit of using those existing map projection types is that they are compatible with engineering, surveying, and GIS data. Because they can be rigorously georeferenced, LDPs can be used directly to represent conditions “at ground” in GIS and CAD platforms. A resulting notable benefit is that LDP datasets can coexist with other geospatial data without resorting to approximate “best-fit” transformations or other “rubber-sheeting” acts of desperation.

**Primary Objectives**

- Explain map projection concepts to enable evaluation of projection types and characteristics that are most suitable for surveying and engineering applications
- Give overview of the State Plane Coordinate System of 2022 (SPCS2022), including the history State Plane, plans for SPCS2022, and the role of LDPs in SPCS2022
- Provide detailed methods for designing LDPs that optimally minimize linear distortion
- Describe characteristics of various existing methods for minimizing map projection distortion and how to evaluate their performance
- Show how to make use of existing LDPs in their software and workflows
- Discuss documenting LDPs to facilitate data transferability

**Workshop Lead & Speaker:**
Michael Dennis, RLS, PE, M.ASCE, NOAA/NOS/National Geodetic Survey

**Registration:** $100

**Sign Up for Both Workshops and Save**
Registration bundle rate for morning and afternoon workshops: $150 (listed as full day pricing in Event Brite).

Continental Breakfast and Lunch will be offered to workshop attendees.

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**Committee Meetings**

**Sunday, April 22**

**UESI Surveying and Geomatics Education Committee Meeting**
8:00 a.m. – 12:00 p.m., Lyra Room (lower level)

**UESI Surveying and Geomatics ExCom Meeting**
1:00 p.m. – 5:00 p.m., Lyra Room

**AAGS Member Meeting**
1:00 p.m. pm - 3:00 p.m., Perseus Room (upper level)

**Monday, April 23**

**IRWA 16th Annual Mapping Competition Judging Meeting**
9:00 a.m. – 12:00 p.m., Lyra Room

**UESI Surveying and Geomatics Liaison Committee Meeting**
2:00 p.m. – 4:00 p.m., Lyra Room
**Monday, April 23**

**Opening Remarks & Keynote Speaker**

8:00 a.m. – 9:05 a.m., Ursa Major

**OPENING REMARKS**

Mark Woodson, P.E., L.S., D.WRE, ENV SP, F.ASCE, ASCE 2016, President, Principal, Woodson Engineering and Surveying

**KEYNOTE SPEAKER**

*The Benefit of Surveying Knowledge in Land Development Projects*

This presentation will focus on how having a career in civil engineering can be self-rewarding and financially lucrative. However, given changes in conditions of the economy, the industry can be cyclical in nature. With our fast-changing world in science and technology, it is important to remain open, flexible, and willing to retool your skills in order to remain competitive in the future.

**Fabrizio Pachano, P.E., PLS, Senior Civil Engineer, LADWP**

Fabrizio Pachano, PE, LS, is a senior civil engineer with the Los Angeles County Department of Public Works. Pachano has over 30 years of civil engineering and land surveying experience in both the private and public sectors. Pachano is a registered civil engineer, a licensed land surveyor, and holds a general contractor’s license, all in the State of California. Pachano has a Bachelor of Science in Civil Engineering from Cal Poly Pomona and a Master’s in Business Administration from Cal State Los Angeles with an emphasis in finance.

**Lunch & Keynote Speaker**

12:00 p.m. – 1:40 p.m., Ursa Major

**OPENING REMARKS**

**Engineering the Future**

Norma Jean Mattei, Ph.D., P.E., F.SEI, F.ASCE, ASCE 2017 President

With an expanding global population, we must take care of aging infrastructure to meet current needs, and at the same time, move it into the future with new technologies and capabilities that will enable us to combat the problems of tomorrow. This presentation will share how we need to prepare future civil engineers to meet these challenges.

**KEYNOTE SPEAKER**

*Extreme Natural Event Research Applications of Terrestrial Laser Scanning (TLS) and Structure-From-Motion (SFM) Technologies*

Geosystems civil engineering is an empirically-driven field that relies heavily on observation to validate analytical models used to predict ground failure. Toward that objective, natural disaster rapid-response research has benefited greatly from the advent of terrestrial LIDAR scanning technology (TLS) and Structure-From-Motion (SFM) interpretation of imagery collected using unmanned aerial systems, both revolutionary tools for characterizing fine-scale changes in topography. For civil engineering research, TLS and SFM have been particularly useful for characterizing the dimensions of failures and for monitoring subtle deformations through time. This talk will present examples of the use of TLS and SFM in extreme event investigations of damage from earthquakes and hurricanes, and an evaluation of the accuracy, bias, and dispersion of TLS and SFM data under controlled experimental conditions. Field applications of TLS and SFM are presented for damage visualization and analysis of recent events including 2016 Kumamoto earthquakes, the 2016 central Italy Amatrice and Norcia earthquakes, and damage to Guajataca dam during the 2017 Hurricane Maria event. Detailed understanding of the ground surface morphology allows for better numerical modeling of potential failure modes, deformation patterns, and morphologies. Finally, TLS and SFM allow for the permanent archiving of 3-D terrain models.

**Robert Kayen, Ph.D., P.E., M. ASCE, Civil & Environmental Engineering, Industry Faculty, UCLA; Senior Scientist & Research Civil Engineer, USGS**

Robert Kayen is a civil engineer, geologist, and professor of civil engineering and environmental engineering at the University of California, Los Angeles, Industry Faculty, and a senior scientist at the United States Geological Survey. He is a leading international expert in the fields of earthquake engineering, soil liquefaction, and ground failure. Kayen’s research focuses on geotechnical engineering, engineering characterization of natural hazards and extreme events, and earth science aspects of civil engineering. His works have been applied in earthquake engineering design of building foundations, bridge abutments, and lifeline and environmental systems.

**Reception with Exhibitors**

5:15 p.m. – 6:30 p.m., Ursa Minor

This event will begin with a message to all attendees from the Conference Chairs:

**Francelina Neto, Ph.D, PLS, M.ASCE and Allan Ng, PLS, M.ASCE, Cal Poly Pomona**

Be among the first to see innovations in the industry by attending the reception with your exhibitors. Join colleagues and friends in the exhibit area for this opportunity to network and make valuable future contacts. Visit the exhibits and discuss solutions to the challenges facing you in your daily life.

**Tuesday, April 24**

**Continental Breakfast**

7:30 a.m. – 8:30 a.m., Ursa Major

**Message from CPP CE Department**

Xudong Jia, Ph.D., P.E., Chair and Professor, Civil Engineering Department, Cal Poly Pomona

Xudong Jia will address those present with a message from the CPP CE Department.

**Lunch & Keynote Speakers**

12:10 p.m. – 1:40 p.m., Ursa Major

**OPENING REMARKS**

**Collection and Depiction of Existing Subsurface Utility Data – Do I need a license for that?**

David Totman, A.M.ASCE, UESI President-elect, Director of Asset Management, Innovyze

**KEYNOTE SPEAKERS**

This presentation will explore national guidelines associated with people and firms performing the collection and depiction of existing subsurface utility data and will emphasize the ASCE C1 38-02, Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data and how that compares to the NCEES Model Law and Model Rules for engineering and surveying. Subsurface Utility Engineering (SUE) provides valuable information upon which important future engineering design
Lunch & Keynote Speakers (continued)

decisions are formulated. Highlights of the presentation include the requirements that practitioners of SUE should comply with at national, state and professional society levels. Paramount to all SUE services is protection of the public. We will discuss a professional’s standard of care, level of responsibility for each step of the work, and the challenges newly faced with anticipated deregulation of occupational licensing around the country.

Richard Moore, PLS, Executive Officer of California BPELSG

After working in the land surveying profession for more than 30 years, Ric Moore began working at BPELSG in 2007 when he contracted as the Land Surveyor Consultant to what was then BPELS. In 2009, he joined staff by assuming the newly formed Senior Registrar Land Surveyor position. After managing the licensing examination operations of the Board, Moore was appointed by the Board to be the BPELSG Executive Officer in July 2011.

Patrick Tami, PLS, President, NCEES; Principal and Office Survey Operations Manager, R.E.Y. Engineers, Inc.

Pat Tami, a Professional Land Surveyor for over 30 years, is the 2017-2018 President of the National Council of Examiners for Engineering and Surveying (NCEES). Tami is a nationally recognized expert in land surveying laws, regulations, and standards. He was appointed three times by California Governors to the California Board for Professional Engineers, Land Surveyors and Geologist, serving from 2006 to 2016.

2018 ASCE Surveying and Mapping Award

1:40 p.m. – 2:30 p.m., URSA Major

Message from UESI Surveying and Geomatics Division

Daniel Gillins, Ph.D., PLS, M.ASCE, UESI Surveying and Geomatics Division Committee Chair, Geodesist, NGS, NOAA

Daniel Gillins will address the audience with a message on behalf of the Surveying and Geomatics Division and will introduce our honoree.

Award Recipient:

Tomás Soler, Ph.D., M.ASCE, Chief Technical Officer, Spatial Reference System Division, NGS, NOAA

Tomás Soler is recognized for his lengthy service, contributions in writing and research, and his service in ASCE towards advancing surveying and mapping. He recently retired after 39 years of service as a geodesist in the United States’ National Geodetic Survey (NGS). During his tenure he served in several key offices from applied basic research to supervision. He witnessed and contributed to many technological advancements, and he published over 125 technical papers on a number of geodetic surveying topics. He was eager to document and convey the scientific message of NGS, and he became one of NGS’ most prolific technical writers. Soler has also been active in the Geomatics Division of ASCE. He served as the editor-in-chief of the ASCE Journal of Surveying Engineering from 2004 to 2013. Soler ensured papers were reviewed quickly, and he successfully raised a number of quality indicators for this journal. Due to his success, he was awarded the ASCE Torrens Awards—a prestigious award given to an editor of an ASCE journal who served with distinction. Soler earned a master’s degree in civil engineering from the University of Washington and a Ph.D. in geodetic science from The Ohio State University.

Closing Plenary Session

3:45 p.m. – 4:30 p.m., URSA Major

The Future of Surveying

The future of surveying is uncertain and with the rapid advances in technology, decrease in candidates eligible for professional licensure and threats to licensure, it is important that surveyors keep up with the latest methods and recruit new people into the profession. Surveyors must also be able to share what they do with the public and enforce the need for licensed professional surveyors well into the future. We will discuss the work of the NSPS Future of Surveying Task Force, a committee started in 2016 with representatives from 20 organizations concerned with surveying; the recent work of the International Federation of Surveyors (FIG) regarding the future of surveying around the world; NCEES speaker kits available to all surveyors for the purpose of promoting surveying; and where we should be with regard to utility mapping. We encourage audience participation to find out what is available and to help us formulate a unified approach to the future of surveying.

Speakers:

Patrick Tami, PLS, President, NCEES; Principal and Office Survey Operations Manager, R.E.Y. Engineers, Inc. (see photo and biography in column 1)

Carol Morman, P.E., PLS, M.ASCE, Program Chair, Civil Engineering Technology, Cincinnati State Technical and Community College

In addition to serving as program chair at Cincinnati State, Morman is also a professor of land surveying courses in the Land Surveying major in Civil Engineering Technologies and is owner and principal engineer and surveyor for CLM Surveying & Engineering. She is a registered land surveyor in Ohio and Indiana and a registered engineer in Ohio, Indiana, and Kentucky. Morman is currently serving as Chairman for the UESI Surveying and Geomatics Education Committee, Vice President of the Greenville Treaty Chapter of the Indiana Society of Professional Land Surveyors, and Faculty Advisor to the Cincinnati State ASCE Student Chapter. She earned an AAS in Civil Engineering Technologies – Surveying from Cincinnati State, a BS in Civil Engineering and a BS in Land Surveying from Purdue University, and a MS in Civil Engineering (Geomatics) from California State University – Fresno.
## MONDAY

### Session I

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#### Field Applications
- **Moderator:** Marlee Walton
- **San Bernardino County Public Works UAV Program**
  - **Tom Herrin**
- **Centering Error for Range Poles**
  - **Kevin Franklin and Thomas Meyer**
- **Salton Sea Watershed Restoration Alternatives:**
  - **Sediment Transport and Water Quality Analysis**
  - **Monica Palomo and Omar Mora**
- **The Intersection of Utility Surveying & Engineering**
  - **Jesse Cooper**
- **The Online Positioning User Service: An Overview and Update**
  - **William Stone**
- **Empirical Evaluation of the Accuracy of Static GPS Survey Campaigns Processed in OPUS-Projects**
  - **Anahita Shahbazi, Jihye Park, Dan Gillins and Sukyung Kim**

#### High Accuracy Positioning
- **Moderator:** Dana Caccamise
- **San Bernardino County Public Works UAV Program**
  - **Tom Herrin**
- **Centering Error for Range Poles**
  - **Kevin Franklin and Thomas Meyer**
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#### Remote Sensing Applications
- **Moderator:** Monica Palomo
- **Use of Various Surveying Technologies to 3D Digital Mapping and Modelling of Cultural Heritage Structures**
  - **John Hatzopoulos, Dimitrios Stefanakis, Andreas Georgopoulos, Sven Tapinski, Panos Valanakis and Ioannis Urgias**
- **Monitoring subsidence**
  - **John Hamilton**
- **Water Leakage Detection of Canal Systems through Artificial Neural Network-Based Satellite Image Analysis**
  - **Jiawei Chen, Pingbo Tang and Tadok Rokado**
- **The USGS 3D Elevation Program (3DEP) and National Business Needs for Lidar**
  - **Drew Decker and Carol Ostergren**
- **Dynamic California – Managing Survey Control in a Moving Environment**
  - **Scott P. Martin**
- **Implementing Dynamic Geodetic Datums in GIS**
  - **Kevin Kelly**

#### Dynamic Coordinates
- **Moderator:** Michael Dennis
- **Use of Various Surveying Technologies to 3D Digital Mapping and Modelling of Cultural Heritage Structures**
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#### Surveying Engineering Education
- **Moderator:** Omar Mora
- **Current State of Surveying Education in Civil Engineering Programs in the United States**
  - **Daniel Gillins and Michael Olsen**
- **Providing a Path to Dual Licensure for Civil Engineers**
  - **Carol Morman**
- **The Caltrans District 7 Geodetic Control System**
  - **Jay Satalic**
- **UAS Surveying of Crop Development over an Experimental Maize Field**
  - **Michael Starek, Truing Chu, Michael Brewer and Seth Murray**
- **Modernizing the National Spatial Reference System in 2022: Replacing NAD 83**
  - **Dru Smith**
- **The North American-Pacific Geopotential Datum of 2022 (NAPGD2022)**
  - **Daniel Roman**

#### Geodetic Control and Unmanned Aircraft Systems
- **Moderator:** Seema C. Shah-Fairbank
- **Current State of Surveying Education in Civil Engineering Programs in the United States**
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#### AAGS: Future Datums
- **Moderator:** Herbert Stoughton
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#### Licensure and Future of Surveying
- **Moderator:** Jay Satalich
- **California Surveying Licensing for Surveyors and Civil Engineers**
  - **Richard Moore and Dallas Sweeney**
- **Surveying Education, Training, and Professional Development**
  - **Herbert W. Stoughton**
- **The Time is Now – Surveyors Must Map Their Own Future!**
  - **Marlee Walton**
- **Evaluating the Precision of UAV Mapping Systems at Different Heights**
  - **Mark Lao, Jose Velasco, David Sanjines and Ahmed Elaksher**
- **Generating TIR and RGB 3D Point Clouds using Unmanned Aircraft System (UAS)-Based Photogrammetry**
  - **Ferid Javadnejad, Richard Slocum, Daniel Gillins and Christopher Parrish**
- **Physical Topographic Development Using Aerial Imagery for Remote Site Modeling**
  - **Seema Shah-Fairbank and Omar Mora**
- **2017 GPS Survey of Guam and CNMI**
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- **Leveling After 2022 When the New Datum is Accessed with GNSS and a Geoid Model**
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- **The State Plane Coordinate System: History, Policy, and Future Directions**
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### Session IV continues

#### Unmanned Aircraft Systems
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TUESDAY

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**Session V**

**Mobile Mapping**

Moderator: Jorge Chen

Embrace Land Mobile Mapping for Smarter Cities
Stefania Kadopoulou and Ruixi Wu

High Resolution Multi-Lane Road Surface Mapping Using 3D Laser Profilers
John Laurenzi and Benoit Petitclerc

Progress Monitoring of Horizontal Construction Projects Using Mobile LiDAR Point Clouds
Nisha Puri and Yelda Turkan

**Utility and Subsurface Surveying**

Moderator: Omar E. Mora

Subsurface Utility Infrastructure Data in the Survey Environment
Shawn Clark

Some Challenges in Delivering 3D Subsurface Utility Model
Alex Glikovic

Precision Inertial GNSS and Direct Georeferencing of Multichannel Ground Penetrating Radar for Highway Applications
William Owen, John Gilmore, Kin Yen, Mamoh Mallah and Mark Turner

**Emergency Response**

Moderator: Steven J. Martin

Hydrographic and Underwater Surveying after Natural Disasters
Terrence Browne, Raj Forsythe and Chris Hartzell

NOAA NGS Emergency Response Imagery for the 2017 Hurricane Season: Technologies, Capabilities, and Challenges
Presenting: Lieutenant Junior Grade Christopher Licira

Credit: Mike Aslaksen, Jon Sellars, and Jason Woolard

Surveying/Geomatics and GIS Response for the California Oroville Dam Emergency
Daniel K. Mandock

**Session VI**

**Terrestrial Laser Scanning**

Moderator: Daniel Gillins

Assessing Different Point Cloud Geo-Referencing Procedures
Luis Landaverde, Mohammed Alqasem, Ahmed Elaksher and Tang Ai

Geo-referencing 3D Indoor Maps Using Point Cloud Registration
Jorge Chen

Fast Segmentation of Terrestrial Laser Scans based on Normal Variation Analysis
Erzhuo Che and Michael Olsen

**Infrastructure, Utility and Subsurface Surveying**

Moderator: Omar E. Mora

Technological Advances in Pipeline Mapping
Neal McPherson, Matt Okubo, Doug Pluta, Rich Josenhans and Omar Mora

Integration of Advanced 3D Subsurface Utility Engineering Information, A Model for the Future
Matthew Wolf, Robert Vasquez, and Jorgen Bergstrom

Advanced Geophysics: Incorporating MCGPR and TDEMI into a Utility Investigation
Corey Biddle

**Boundary Surveying Topics**

Moderator: Dana Caccamise

Boundary Survey: How to Deal with Boundary Dispute Issues
Avinash Prasad and Purim Prasad

Deed: How to Deal with Ambiguous Legal Deed Descriptions
Avinash Prasad and Purim Prasad

The Torrens Land Boundary System: A Legal Revolution That Complements the Ongoing Geomatics Technological Revolution
William Bowie

2:35 – 3:25 p.m.

**Session VII**

**BIM**

Moderator: Jin Sung Cho

Quality Assessment for Concrete Work Using Laser Scanning Technology: “2 & U in Seattle” and “Portland State University of Business”
Greg Smith and Jinsung Cho

Laser Scanning for Above Ceiling MEP Systems and Mechanical Rooms: “Genentech, Hillsboro, OR and Hollywood Presbyterian Medical Center, LA, CA”
Greg Smith and Jinsung Cho

**Surveying Practice and Education**

Moderator: Humberto Gallegos

SUE – Is it an Engineering Practice, or a Survey Practice? When is it both?
Gregory Jeffries

From A Distance: Offering Introductory Surveying Courses Online
John Bean and Jeffery Hollingsworth

**Inspection Surveying**

Moderator: Terrence Browne

Automated Surveying of Pardee and Camanche Dams
Steven Martin

Using Web GIS Platform for Bridge Inspection Inventory Management
Fadi Javadnejad, Daniel Gillins, Christopher Higgins and Matthew Gillins

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Registration Hours
Sunday, April 22 8:00 a.m. – 2:00 p.m.
Monday, April 23 7:00 a.m. – 5:00 p.m.
Tuesday, April 24 7:00 a.m. – 10:00 a.m.

Registration Rates
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For further questions please contact:
Allan Y. Ng, P.L.S. – Conference Co-chair
Adjunct Professor, Civil Engineering Department,
California State Polytechnic University Pomona
ayng@cpp.edu

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On the Registration page, under “Order Now”. Click “Show other payment options” and “Pay Offline”. You can register as normal and send a check with the following information.

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Mail the check to:
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The dress code for the Conference is business casual (e.g. slacks, casual dresses). Meeting room temperatures will vary, so wear layered clothing to ensure your personal comfort. We also recommend attendees wear comfortable shoes. Please note that certain events may have specific details on attire, and you should refer to the description of that event for more information.

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Conference organizers will make every effort to schedule popular events in rooms large enough to accommodate anticipated attendance. Since many events are extremely popular, it is wise to select alternative events as you plan your conference schedule. ASCE and the university are required to follow local fire regulations and may ask participants in rooms filled to capacity to choose another event.

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KEY DATES
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Draft papers due: January 11, 2018
Registration opens: January 24, 2018
Final papers due: March 15, 2018

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- Bathymetry
- Big Data
- Business Geographics/Analytics
- Cadastral Mapping
- Cartography
- Climate Change
- Computing in the Cloud
- Crime Mapping/Modelling
- Data Capture/Collection
- DEM - Digital Elevation Model
- DGPS - Differential GPS
- Digital City Models
- Digital Mapping
- Digital Rights Management
- Disaster Management/Monitoring
- DSM - Digital Surface Model
- DTM - Digital Terrain Model
- Dynamic Mapping
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- Emergency Services
- ENC - Electronic Navigation Chart
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- GIS
- GIS in Agriculture & Forestry
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- Open GIS
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- Photogrammetry
- Point Clouds
- Property Information Systems
- Radio Navigation
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- Risk Management
- RTK (Real Time Kinematic) Surveying
- Satellite Imagery/Navigation
- Scanning Technology
- SDI - Spatial Data Infrastructures
- Smart Grids
- Software
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- Surveying Technology Sensor
- Telematics
- Topographic Mapping
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- VRS - Virtual Reference Station
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- Aerospace
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