

2018 FINAL PROGRAM		Session Title		Speaker	Location
7:00	7:45	Registration & Breakfast			Lobby and Lounge
7:45	7:50	Opening and Welcome by Event Sponsor		Representatives from Entellus and Stanley	
7:50	8:00	A Few Words from the ASHE National President		Richard Cochran, PE, ASHE National President	
8:00	8:35	Breakfast Keynote: Hyperloop and the Future of Transportation		Joshua Kosar, CTO, Helix Technologies L.L.C. Josh Bowen, President, AZLoop Fausto Burrueal, Town of Marana Deirdre Brosnihan, Pima County Regional Flood Control District	Cottonwood Ballroom
8:35	8:40	Session Close/Breakout Announcement			
BREAK		8:45-8:55	Coffee Break		
8:55	9:45	Drone Applications for Traffic Engineering	Drones have been a very useful tool in many industries and civil engineering is one of them! This presentation will cover how Psomas has used drones for parking studies, remote locations, and tracking construction progress. From flying the drone to preparing deliverables, you will learn about the entire process.	Luana Broshears, Ph.D., PE, Psomas Darlene Danehy, PE, TE, PTOE, ENV SP, LEED AP, Psomas Jose Aguilar, PE, ENV SP, Psomas	Fausto Burrueal Desert Star
		Using Integrated Delivery to Dream Big for our Profession	This presentation will present some big ideas on how we can improve and advance the effectiveness of the civil engineering profession using an integrated delivery approach and innovative technologies. Specific real world project examples will be used that include virtual design and lean project management principles.	Jason Simmers, PE, PMP, Kittelson & Associates Andrew Bailey, PE, Kittelson & Associates	Lindsey Willman Golden Poppy
		Identify Top-Erosive Subwatershed in Altar Valley	Altar Valley watershed is located at the Southwest Tucson. Preserving and improving watershed function is critical to water resources and habitat resilience in the Altar valley. The entrenchment of the main stream of the Altar Wash is a visible reminder of continuing degradation of the watershed. We performed a watershed-wide erosion research for the entire 776 square miles of the Altar valley (500,193 acres). The study area includes four subwatersheds: Arivaca Creek, Puertocito Wash, Altar Wash, Upper Brawley Wash.	Jennifer G Duan, Professor Jaeho him, Post-doc Research	Yung Koprowski Brittlebush
		Protected/Permissive vs. Protected Only Left-Turn Signal Phasing: Mobility vs. Safety	This presentation discusses a before and after study conducted by the University of Arizona (UA) to investigate the mobility and safety differences between protected-only and protected/permissive left-turn phasing. Findings of this study were based on a large amount of field data collected by smart sensors and U of A students.	Yao-Jan Wu, Ph.D., P.E., University of Arizona Paul Burton, TSOS, Town of Sahuarita	Jeff Swan Chia
		Ethics and Professional Liability for Engineers	Ethics is the cornerstone of professional engineering. Every day engineers make decisions that have critical impacts not just for clients and employers, but also for the public at large and for the needs of future generations. This session reviews the ethical principles that guide professional engineers, and provides a sampling of real-life case studies that illustrate the importance of honoring ethical principles in the practice of engineering.	Larry Magura, P.E., F. ASCE, Governor, ASCE Region 8	Alan Ferreira Larspur
BREAK		9:45-10:00	Coffee Break		
10:00	10:50	Valley Metro Rail Program Update	This presentation will provide a brief update on Valley Metro light rail operations and a status of projects currently in design and construction. This includes the Gilbert Road LRT Extension in Mesa, the Tempe Streetcar, the South Central LRT Extension in Phoenix, and the Northwest LRT Phase II Extension in Phoenix.	Wulf Grote, PE, Director, Valley Metro	Lindsey Willman Desert Star
		Evolving LIDAR Output - What can 3D Data for your next Project?	The start of the presentation will cover the basics of LIDAR and its Relative and Absolute Accuracies, then onto the most current LIDAR Collection Devices on the market. This will then lead into discussing a very large project that Cooper Aerial worked with Jacobs Engineering called Beaverhead Flat. This project was 23,000 +/- Acres in size and encompasses a small town area, large agriculture area, roadways, river area and a large natural wilderness area. The biggest challenges that were dealt with were data size constraints of over 100 Gigabytes Raw Data Set (we will describe what can be done to avoid falling into the large data trap for engineering use) and the cost efficiency of collecting the large site all at once, instead of piecemealing the project on multiple different phases over multiple years. Lastly, we will discuss how the roadway site will be selected and designed with use of this data.	Zachary Radel, Cooper Aerial Surveys Co.	Jose Aguilar Golden Poppy
		"Dreaming Big" while "Working for Fun": the adventures of an "Engineer Without Boarders"	Adventures and Challenges of working on projects in over 100 countries while resident in Lesotho, Egypt, Zimbabwe, Russia, Gaza and India and from US bases in Hawaii, Wash DC/VA and Tucson. This is about a career simply expressed as 50 years, 100 countries, 1000 projects and 1,000,000 miles. Get ideas to for your career to do what you like and where and when you want?	Fred A Zobrist, P.E., Fellow, Life Member, ASCE	Joel Amarillas Brittlebush
		Designing for Safety Beyond Construction	It is undisputed that safety is paramount in the construction industry. As engineers, we are held to protect the health, safety and welfare of the public, including those who construct and eventually work and operate in the facilities designed by us. This means engineers need to know how to design within the guidelines of 29 CFR 1910 Occupational Safety and Health Administration (OSHA), set forth by the Occupational Safety and Health Act of 1970. Accounting for safety applies to all stages in the life cycle commencing with the inception stage, through design and construction, through decommissioning. This presentation will discuss three specific components of the OSHA 29 CFR 1910 requirements, and will present examples from case studies of recent projects, where decisions made during design lacked the foresight of use beyond construction, which directly affected the ability to safely operate and maintain the facility.	Mackenzie A. Hagan, EIT, A ASCE, GHD Inc. Frederick H. Tack, P.E., ENV SP., M.ASCE., GHD Inc.,	Jeff Swan Chia
		Planning the Future: Applying Analytics to CIP Planning and Implementation	This presentation will focus on the development of the asset database for all Booster Pump Stations in City of Phoenix, review of field inspection and discuss the details of the CRV model. The presentation will also include key insights of the CRV model results and the analysis thereafter, for prioritizing the rehabilitation of the facilities and discuss an example of the priority list that has been implemented by the City as part of the CIP planning.	Kyle Kraft, Wilson Engineers Sreeram Rengaraj, Wilson Engineers	Alan Ferreira Larspur
BREAK		10:50-11:00			
11:00	11:50	Tempe's Path to Vision Zero	The City of Tempe is the first city in the State of Arizona to embrace Vision Zero. Vision Zero is a transportation safety strategy that has a goal of eliminating fatal and serious injury crashes. City staff will educate attendees about Vision Zero and explain Tempe's path to Vision Zero.	Julian Dresang, P.E., PTOE, City of Tempe	Lindsey Willman Desert Star
		Comparison of Lumped and 2-D Approaches to Hydrology Model for a Mine Overburden Stockpile	Several numerical approaches are now available for modeling of precipitation-runoff processes. These include traditional models that represent the watershed using lumped basin elements to more complex two-dimensional finite-difference or finite-element flow models that can mathematically simulate runoff and flow concentrations based on the watershed topography. Mine planning and reclamation work spanning over several years has provided opportunity to calibrate and compare different hydrology modeling approaches for the same watershed, a large mine overburden stockpile.	Nathan Haws, PhD, PE, Stantec	Joel Amarillas Golden Poppy
		Anthology of three prominent landslides impacting Arizona transportation facilities; Geologists' Daydreams or Engineers' Nightmares?	The US 89 Bitter Springs Landslide, the State Route 87 Sunflower Landslide, and the State Route 89A Town of Jerome Sliding Jail Landslide have all been geologically active in the last several years creating negative impacts and transportation delays while a variety of remedial action construction projects were implemented. The presentation will focus on these and other geologic hazards that geologists and geotechnical engineers first research and then develop cost effective remedies.	James J. Lemmon, RG, Geologist, Geotechnical Design Section, ADOT Bndge Group	Yung Koprowski Brittlebush
		Basin Scale HEC-RAS Model for Scour Analysis in the City of Tucson	HEC-RAS model was developed for the major rivers, including Santa Cruz, Rillito, Pantano, Canyon Del Oro, and Tanque Verde Rivers in Tucson, Arizona. The objective is to identify the bridges at highest risk of failure in a storm event.	Jennifer G Duan, Professor Ariana Canfield, Student Sam McCormick, Student Drew Jenkins, Student	Mark Lamer Chia
		Public Speaking for Engineers	This session will show you how to communicate effectively with clients, public agencies, and the Public. The session will also help you become a better public speaker and communicator – not only in your career, but also in many things that you'll do within your community	Mark Woodson, PE, LS, ENV SP, F.ASCE	Jose Aguilar Larspur
BREAK		1:25-1:35			
11:50	12:00	Welcome Back - Lunch Session Overview & Conference Committee Thank You		Fausto Burrueal, Town of Marana Deirdre Brosnihan, Pima County Regional Flood Control District Fausto Burrueal, Town of Marana Kristina Swallow, PE, ENV SP., F.ASCE, ASCE National President Brent Borchers, PE, Terracon and ASCE Region 8 Governor Mark Lamer, P.E., Department of Civil Engineering, Construction Management and Environmental Engineering Northern Arizona University Mark Woodson, Woodson Engineering, ASCE National Past-President	Cottonwood Ballroom
12:00	12:10	Presidents Memorable Moment & Lunch Sponsor Thank You			
12:10	12:40	Lunch Keynote: Engineering the Future			
12:40	12:50	ASCE Region 8			
12:50	1:05	ASCE Region 8 Awards			
1:05	1:15	ASCE Section Awards			
1:15	1:20	ASCE Presentation of Scholarships			
1:20	1:25	ASCE Officer Installation			
		Roadway Lighting - What's New in ANSI/IES Guides?	By the end of 2018, the Illuminating Engineering Society (IES) plans to publish a new ANSI/IES Roadway Lighting Handbook replacing its current Recommended Practice ANSI/IES RP-8. The new guide combines information and design recommendations from multiple IES and other international guides, including Dark Sky guidelines, into a single two-volume handbook. See what's new, what's out, and what is changing in the world of roadway lighting, especially with the rapid evolution of LED lighting.	Suzanne Lansford, PE, REDD Inc	Lindsey Willman Desert Star
		Community Outreach for Engineers	Do we really need to have another public meeting to listen to people tell us how bad we are? Not Learn when you need to engage the public and new techniques to keep you from the firing line. Tips will be provided on how to avoid community outrage and having your project killed by the public.	Theresa Gunn, President, GCI	Jose Aguilar Golden Poppy
		Public R/W Permit Administration	Management of our public R/W is a fulltime job. How are we doing?	AI Field, President, AI Field & Associates	Alan Ferreira Brittlebush

1:35	2:25	Seismic Isolation of the Giant Magellan Telescope	Located in the Atacama Desert at an elevation of 2,518 m on Las Campanas Peak in the northern region of Chile, the Giant Magellan Telescope (GMT) is an Extremely Large Telescope (ELT) class observatory set to make history as one of the largest telescopes ever built. Vast improvements in the fields of optics, control systems, and mirror fabrication technologies have facilitated correspondingly drastic increases in the size and presence of ground-based telescopes previously thought to be impossible. Size for these observatories has increased to the point where conventional approaches impart seismic demands on the telescope structure and optics that are unmanageable. With this, a refined approach involving base isolation is being designed to provide seismic protection of a sensitive, invaluable instrument that will revolutionize our understanding of the universe. This presentation examines the seismic isolation system from both an engineering and logistics perspective and peers into some of the intricacies and structural engineering challenges associated with such an endeavor.	Eric Manuel, PE, M3	Jeff Swan	Chia
		A Tale of Two Bridges: The Sabino Canyon Road Extension	The Sabino Canyon Extension project was approved as part of the Pima Association of Governments 5-year Regional Transportation Improvement Program. The approximately 1/2-mile roadway extension of Sabino Canyon Road to Kolb Road was a prominent, yet long time debated roadway improvement on Tucson's Eastside. The extension includes the 350' + long Airmen Memorial Bridge over the Pantano Wash and the 620' + long Mullins Landfill Bridge. The owner, design team, and contractor were faced with the involvement of an active and vocal nearby neighborhood, the location and environmental hazards of the landfill, tight geometric constraints, existing utility and drainage considerations, and economic limitations. The successful partnership resulted in a thoughtful and resourceful design. The City of Tucson realized a several hundred-thousand dollar value engineering savings, reduced construction disturbance to the local neighborhood, and an on-schedule completion date. Tucson residents have greatly benefitted with an increased level of service along Tanque Verde, once considered the worst performing stretch of roadway in Tucson.	Tony Gravagne, PE, Structural Concepts Kevin Thornton, PE, Psomas	Joel Amarillas	Larspur
BREAK 2:25-2:40						
2:40	3:30	Enhancing Transportation System Management and Operations (TSMO) with Mobility-as-a-Service&Tool (MaaS&T)	In this talk, we will summarize the lessons learned from Metropia's past 3 years of active demand management (ADM) deployments and highlight the areas where ADM has significantly benefited TSMO. The integration of TSMO and ADM leads to MaaS&T, which will be discussed in details.	Yi-Chang Chiu, Ph.D., Civil and Architectural Engineering and Mechanics (CAEM), The University of Arizona Founder, Metropia, Inc.	Lindsey Willman	Desert Star
		Green Stormwater Infrastructure Case Studies of the Southwest	An overview of successes and failures of Green Stormwater Infrastructure (GSI) work in the southwest.	Kieran Sikdar, CFM, Watershed Management Group	Jeff Swan	Golden Poppy
		Political Capital: Learn to Use Your Advocacy Resources Wisely	You're 8 votes short of the 218 votes needed to pass a bill when it comes up for a recorded vote on the House floor. Learn to engage in tactics that will help convince Members of Congress who are undecided to vote for your bill, and erode support for your opponents. Learn how choosing the right advocacy strategy can impact the outcome of your campaign.	Anna Denecke, ASCE's Senior Manager of Infrastructure Initiatives, Grassroots Programs and State Relations American Society of Civil Engineers	Jose Aguilar	Brittlebush
		Watch "Dream: Engineering Our World"	Narrated by Academy Award® winner Jeff Bridges, Dream Big: Engineering Our World is a first of its kind film for IMAX® and giant screen theatres that will transform how we think about engineering. From the Great Wall of China and the world's tallest buildings, to underwater robots, solar cars and smart, sustainable cities, Dream Big celebrates the human ingenuity behind engineering marvels big and small, and reveals the heart that drives engineers to create better lives for people around the world.	Jeff Bridges (Narrator)	Skye Gentile	Chia
		How are we going to pay for Transportation Investments in the Future?	The outlook for traditional revenue sources is dim and growing dimmer. Fossil fuel based taxes will continue to diminish as battery/alternative fuel technologies improve. There are several pilot studies to implement a tax based on miles driven. Is this the answer? If so, how do we get Arizona moving in the right direction?	Eric Anderson, Maricopa Association of Governments	Deirdre Brosnihan	Larspur
BREAK 3:30-3:40		Cookie Break		Students	Mark Lamer	Cottonwood Ballroom
3:40	4:30	Arizona Pure Water Brew Challenge	A high level overview of Arizona's first permitted facility for potable reuse. Winners of the 2016 Water Innovation Challenge, the Southwest Water Campus team designed and constructed a mobile advanced water treatment facility that toured the state producing ultra-pure water from treated municipal effluent and received the first DPR permit from ADEQ. This collaborative project involved key municipal and engineering partners consisting of Pima County RWRD, Marana Water, Tucson Water, City of Phoenix, City of Flagstaff, Jacobs Engineering Group (formerly CH2M) and Carollo Engineers. Craft brewers throughout the state partnered to help with message delivery and crowd participation.	Jeff Prevatt, Pima County RWRD, Deputy Director of Treatment, AZ Pure Water Brew Challenge Project Manager Barbara A. Escobar, Pima County RWRD, Compliance & Regulatory Affairs Office Manager, AZ Pure Water Brew Challenge Analytical Coordination Chair	Lindsey Willman	Desert Star
		Update from the Board of Technical Registration	Alejandro will provide an address various topics including how the recent rule changes (approved June 2018) affect engineers, discussion of recent and anticipated legislative de-regulation initiatives, changes in the FE and PE examinations, and some recent notable enforcement cases.	Alejandro Angel, PhD, PE, Chairman, Arizona Board of Technical Registration / Vice President, Psomas	Joel Amarillas	Golden Poppy
		Research and Best Practices from Both Sides of the Table: How Agency and Consultant Professionals Communicate, Network, and Manage Time	Successful engineering professionals practice good communication skills, value networking, and carefully manage time. This session includes original industry research that reveals best practices from both agency and consulting professionals, and ASCE/ASHE attendees will gain insights and practical tips that help navigate the path to success.	Barbara Shuck, FSMPs, CPSM, TankGirl Marketing Kathryn Ness, CPSM, Go! Strategies	Yung Koprowski	Brittlebush
		Drones for Survey Grade Mapping and Topography	Drones are rapidly disrupting and transforming the traditional methods used by surveyors to create topography. This innovative technology saves time and money while producing data rich with detail, but what are the risks? This presentation will describe the rewards and challenges of creating defensible survey grade topographic data from drone systems that use Structure from Motion (SfM) Photogrammetry.	Doug Andriuk, Synergy Geomatics LLC	Jose Aguilar	Chia
		Water and Roadway Projects	All the ways in which water and roadway projects interconnect - stormwater, culverts and storm drains, drinking water and reclaimed water piping, detention basins, permeable pavements and other ways to recycle water in roadways.	Patricia Eisenberg, P.E., City of Tucson Water Department	Skye Gentile	Larspur
4:30		6:30	NETWORKING RECEPTION	Students	Mark Lamer	Cottonwood Ballroom