

VALLEY ENGINEERING, SCIENCE & TECHNOLOGY CLUB

www.engineersaz.com

May 2017 NEWSLETTER

Editor: Noelle Jobson

The Engineers Club is a social organization which meets regularly for lunch with a speaker on a technical topic. Spouses are invited and many attend regularly. Short field trips are occasionally scheduled. Membership is open to anyone who has worked in or related to the engineering or scientific fields. Meetings are held at 11:30am on the first Friday of each month (unless otherwise noted), October through June, at Briarwood Country Club, 135th and Meeker in Sun City West, AZ
Visitors are always welcome - - just call Reservations at (623)546-9112 to let us know you are coming.

May 5 PROGRAM

Good News in Alzheimer's Disease

Dr. Edward Zamrini



Ed Zamrini, MD, a neurologist with expertise in cognitive and geriatric neurology, joined Banner Research as director of the memory center at Banner Sun Health Research Institute in July 2015. Dr. Zamrini joins the team from University of Utah, where he served as a professor of neurology. He has 25 years of expertise in the study of the brain and memory, while also teaching at various universities and participating in review boards. He earned a doctor of medicine from American University of Beirut, located in Beirut, Lebanon.

Editor's Notes - Noelle Jobson

How Do We Fix Systems Engineering?

"How is it that we continue to encounter failure of important and complex systems where everything thought to be necessary in the way of process control was done, and yet despite these efforts the system failed? Each time this occurs, we as an engineering community vow to redouble our efforts to control the engineering process, and yet such events continue to occur. The answer cannot lie in continuing to do more of the same thing while expecting a different outcome. We need to rise above process, to examine the technical, cultural, and political mix that is "system engineering", and to examine the education and training we are providing to those who would practice this discipline." - Michael Griffin, Former NASA Administrator

This excerpt is from a talk given to the staff at Draper Laboratory in 2012. Like the proverbial elephant in the room, we as systems engineers, program managers, directors, etc., recognize that systems engineering processes are broken. As stated, this talk was from 2012—while many systems at that time were highly automated, tactical and functional safety critical RTOS based technology in the field rarely, if ever, employed the types of technology we've been discussing over the past year here at VEST, for example, AI applications. There seems to be an expectation from the general public that we will be able to jump over the technological challenge chasm "by 2020" and have seamlessly integrated self-driving vehicles on our highways.

I would love to hear from my fellow VEST members on this topic. I encourage you all to send comments and ideas to me at nojobson@gmail.com for publication in the upcoming newsletters. Looking forward to hearing from you all!

June 2 PROGRAM

The Challenge of AI Applications in Design and Validation of Self-Driving Vehicle Technology

Noelle Jobson, IGM Consultants



Noelle is recognized as a forward-focused, discovery-driven technology and innovation leader with more than 18 years' experience in commercial and defense sectors propelling corporate value through innovation, design and development of new product capabilities, primarily in the highly automated and autonomous vehicle control systems domain.

Noelle continues to leverage experience in predictive analytics, computer science, integrated modular systems, human centered technologies, autonomous systems, and systems engineering to define and transform technical solutions to business cases designed to improve ROI, decrease cost, risk, & time to market, while increasing reliability, availability, and safety.

Prior to her career in the aerospace, defense, and space sectors, Noelle was the co-founder of a start-up in 1999, designing Bayesian Neural Network based "big data" solutions for online bidding sites. Noelle also served with the State Department in Paris, France during the 1990s.

Noelle holds a M.Sc. in Engineering Management from the Tufts Gordon Institute, and a B.Sc. in Physics and Astronomy (with computer science and mathematics minors) from the University of Arizona.

She currently operates in both New England and the Greater Phoenix area in Arizona.

FUTURE MEETINGS

June 2, 2017

Title: The Challenge of AI Applications in Design and Validation of Self-Driving Vehicle Technology
Speaker: Noelle Jobson, CEO IGM Consultants

October 6, 2017

Title: Good News in Alzheimer's Disease
Speaker: Banner Sun Health Research Institute

2017 OFFICERS

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Vice President	Leif Christensen	TBD
Secretary	Doris Palmer	623-815-8143
Treasurer	Marilyn Pettigrew	623-337-4163
Asst. Treas.	Darlene Hester	TBD
Asst. Treas.	Don Block	TBD

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Hospitality	Doris Palmer	623-815-8143
Past President	Jackie Rice	TBD

TREASURER'S REPORT MAY 2017

General Fund Balance: \$5567.81
Scholarship Fund: \$1539.42
March Membership Total: 140
50/50 Lottery Winner: Bob Linville \$102

LUNCHEON MENUS

May 5: #1 Chicken Pot Pie or #2 Baked Cod. Both entrées come with Salad, Saffron Rice, Peas & Carrots, Peppermint Ice Cream w/cookie.

June 2: #1 Pork Cordon Bleu or #2 Grilled Salmon. Both entrées come with Salad, Au Gratin Potatoes, Green Beans Almondine, & Ice Cream w/rolled cookie.

RESERVATION POLICY

The cost of the monthly luncheon is \$20 cash or check. The reservation deadline is 6PM Monday before the meeting. **Late reservations cannot be guaranteed the regular meal.** Call Dave Whitehouse to cancel your reservation. Note that the full cost of the luncheon will be charged for "no-shows" and cancellations after 5PM on Wednesday before the meeting. Please have cash or make out your check in advance.
RESERVATIONS Dave Whitehouse (623) 544-0942

Abstract (Continued from Page 1)

In June 2016, I presented the three most compelling systems engineering challenges and market growth constraints to safe, robust, reliable and cost-effective deployment of autonomous systems vehicles; lack of operator trust, the "big data" problem, and lack of regulatory standards and guidelines defining "safe" and certifiable large-scale deployment of stochastic, non-deterministic decision making systems in a seemingly unbound operational environment.

During today's talk, I will be focusing on the most challenging aspect of truly self-driving technologies – artificial intelligence. We all imagine a sci-fi type world where vehicles are zipping along airways, seamlessly passing, yielding, merging, etc., while the passengers enjoy carefree conversations as their robotic drivers take away all the worries of driving. Remote piloted and self-driving vehicle technology has been very advanced for decades, however, employing this technology on a large scale, particularly in a mixed equipage environment, is rife with safety and operational issues. Add on the advances in distributed cloud computing, wireless technologies, and smart sensors, and the average person can't help but wonder why we have yet to achieve even marginal safety of self-driving vehicles on our surface streets and highways.

Today, I will focus on potential techniques that can be employed to determine which data are required for operational, tactical, functional, and hazard prevention operations. We will then discuss how that reduced, refined data set can be used not only to operate a system of intelligent vehicles, but also used to build mission and safety critical regulations, guidelines, and standards for self-driving vehicles incorporating artificial intelligence applications.

The Softer Side of Robots and their Human Wearable Applications (April 2017)

Panagiotis Polygerinos, PhD, ASU, Ira A. Fulton School of



Engineering (center).

For more information on our speakers, please visit our website at www.e2engineersaz.com