

# VALLEY ENGINEERING, SCIENCE & TECHNOLOGY CLUB

[www.engineersaz.com](http://www.engineersaz.com)

January 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.

## January 6 PROGRAM

### The Future of Energy Is Bright

Patrick McDermott, CEM APS Community Affairs Manager



Patrick has been employed at APS since 1987. In his current role as a community affairs manager, he is responsible for direct community interface with non-profits, business organizations and citizen groups. These regions include; Tolleson, Avondale, El Mirage, Gila Bend, Glendale, Goodyear, Litchfield Park, Peoria, Surprise, the Sun Cities, Tonopah and as well as into the communities including and surrounding Wickenburg and Youngtown. He is a Certified Energy Manager (CEM) with the Association of Energy Engineers.

The future of energy is certainly bright! From our beginning in 1886, as the first awarded franchise in the city of Phoenix to the present, APS remains at the forefront of the ever-changing electric utility future. For over 130 years APS has been an integral partner in a long and prosperous relationship with the cities, towns and counties that we serve in Arizona. That successful partnership continues in a time of unprecedented change in how customers use energy and interact with their utility companies. A very exciting time indeed!

The advances in technologies, "two-way" interactions with customers who generate a portion of their own electricity and the "Smart Grid" are changing the way customers use energy and are shaping a new energy frontier. That new frontier includes expanding choices and control customers have in managing their energy use with a focus on a sustainable energy future for all Arizonan's. That future includes a growing portfolio of renewable energy production, smart and economical use of existing conventional resources, and the challenges of meeting the needs of a growing population.

## February 3 PROGRAM

### To Catch A Cancer: Using Biotechnology to Improve Detection of Cancer

Karen S. Anderson, MD, PhD. ASU Biodesign Institute



Karen's laboratory is focused on understanding how the immune response can be used to detect and alter cancer development. The development of effective cancer immunotherapy requires identification of target antigens, and also an understanding of the mechanisms of immune regulation that limit effective immunotherapy. One challenge in tumor immunology is how to measure immune responses across the proteome.

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## NOTES FROM the Board:

Due to increased costs, **beginning in January, the price for the lunch at the VEST general meeting will be increased to \$20.00 per person.** This will be in effect throughout 2017.

Remember to donate **MONEY** to the Scholarship Fund. One of the main objectives of VEST is to provide scholarships to deserving engineering students."

General (luncheon) meetings: Friday at 11:30 A.M.

First Friday of each month--unless changed by the Board.

No Meetings July-September

- January 6
- February 3
- March 3
- April 7
- May 5
- June 2
- October 6
- November 3
- December 1

## FUTURE MEETINGS

February 3, 2017

Title: To Catch A Cancer: Using Biotechnology to Improve Detection of Cancer

Speaker: Karen S. Anderson, MD, PhD. ASU Biodesign Institute

March 3, 2017

Title: Robotics in Healthcare

Speaker: Panagiotis Polygerinos, PhD, ASU, Ira A. Fulton School of Engineering

## 2017 OFFICERS

President	Tod Hamilton	623-910-2042
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

## COMMITTEE CHAIRPERSONS

Programs	Rick Cecil	360-402-1695
Membership	Philip Main	623-748-8222
<b>Reservations</b>	<b>Dave Whitehouse</b>	<b>623-544-0942</b>
Luncheons	Tod Hamilton	623-910-2042
Scholarship	Len Cohen	623-546-3741
Member at Large	Les Sherry	623-975-9081
Newsletter	Noelle Jobson	623-810-8717
Event Support	Hal Lind	623-546-6385
Event Audio	Richard Stout	623-815-0985
Event Computer	Richard Sarut	480-300-7251
Web Site	Dave Campbell	623-518-4871
Publicity	Lance Berglund	623-734-3737
Field Trips	Lanny Barnes	623-546-3364
Hospitality	Doris Palmer	623-815-8143
Past President	Jackie Rice	TBD

## TREASURER'S REPORT January 2017

**General Fund Balance: \$8,882.53**  
**December Membership Total: 138**

## LUNCHEON MENUS

**January 6: #1 Roasted Breast of Tom Turkey, or #2 Grilled Salmon.** Both entrées come with Salad, Creamy mashed potatoes, steamed broccoli, & Ice cream with rolled cookie.

**February 3: #1 Grilled Chicken Cordon Bleu or #2 Baked Cod.** Both entrées come with Salad, Balsamic Rice, Corn O'Brien, & Fudge Nut Brownie with whipped cream.

## 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**

VEST President & Program Organizer with speaker Noelle Jobson, CEO & Founder of IGM Consultants.



## Driverless Cars

### Note from Newsletter Editor, Noelle Jobson

Greetings fellow VEST members! 2017 promises to be an exciting new year, both politically and technologically. We've seen and heard a lot of talk over the past year in the media regarding driverless cars. After reading an article in [Industry Week](#) divulging Elon Musk's opinion on the future of driverless roads, I decided to share my opinion on the state of the technology. After nearly two decades in the mission & safety critical RT autonomous and highly automated vehicle industry, I feel he is being short sighted and frankly arrogant about the technology capabilities today versus in 2019. While individual vehicles and command-monitor systems have been in place and understood for at least two decades, the capability is not a question. The cost of the sensors required to enable smart sensing and command response systems has made driverless vehicles economically feasible. Regardless, what is missing is the ability to fully determine the required integrity, reliability, and safety of these vehicles because the methodology for verifying and validating these key characteristics of successfully deployed or "roadworthy" vehicles does not yet exist. And the regulations and certification requirements that will need to be satisfied are still far from being determined. Cash heavy companies can throw as much money as they want at designing new vehicles and working backroom deals with politicians to roll them out, but they cannot let arrogance get in the way of the ultimate success of these vehicles. Human safety is the key consideration for successful, long term roll out of large scale mission and safety critical autonomy.

I welcome feedback, commentary and general discussion on this topic, and would be happy to provide an ongoing forum for discussion as part of the newsletter.

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#### To Catch A Cancer: Using Biotechnology to Improve Detection of Cancer

Karen S. Anderson, MD, PhD. ASU Biodesign Institute

Antibodies to tumor antigens can be detected in the blood of cancer patients, and can be used as biomarkers for early cancer detection. We use custom protein microarrays and bead-array assays to detect these antibodies, and have identified novel biomarkers for the detection of breast, ovarian, pancreatic, and human papillomavirus (HPV)-associated cancers. We have adapted custom protein microarrays for high-throughput multiplex ELISA assay for tumor antigen-specific antibodies and have developed secondary confirmatory assays for rapid antibody detection using plate-based, bead-

For more information on our speakers, please visit our website at [www.e2engineersaz.com](http://www.e2engineersaz.com)

VEST President & Program Organizer with speaker Jim Cook, Director of Cyber Security Business at ASU

