

VALLEY ENGINEERING, SCIENCE & TECHNOLOGY CLUB

OCTOBER 2015 NEWSLETTER www.engineersaz.com

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 had close ties to the engineering or scientific fields. Meetings are held at 11:30am on the first Friday of each month, October through June, at Briarwood Country Club, 135th and Meeker in Sun City West, Arizona.

Visitors are always welcome - - just call Reservations at (623)546-9112 to let us know you are coming.

OCTOBER 2 PROGRAM

Palo Verde: Energizing The Southwest
Kory Raftery, Communications Department
APS Palo Verde Nuclear Generating Station



Palo Verde Nuclear Generating Station is not just the largest nuclear plant in the United States. Its three Combustion Engineering pressurized water reactors have made it the nation's largest energy plant of any kind since 1992. It can produce up to 4000 megawatts of electricity (about 35% of the electricity generated in Arizona each year), powering the homes of four million people across four states. Operated by APS, the facility employs about 2500 workers and is owned by seven public and private power companies.

As Communications Department Leader at the Palo Verde, Kory Raftery is in charge of all editorial content and community relations. Previously he managed public affairs for the Calvert Cliffs nuclear power plant in the Washington DC area and before that at the Diablo Canyon nuclear power plant in San Luis Obispo, California.

Kory is a former television news anchor and reporter, worked in communications for the U.S. Senate, and handled play-by-play duties for a semi-professional baseball team in California. He holds a BA degree in Mass Communications from the University of Nevada, Las Vegas, graduating with honors.

NOVEMBER 6 PROGRAM

Entrepreneurship at Arizona State University
Audrey Iffert-Saleem, Executive Director
Entrepreneurship and Innovation Initiatives
Arizona State University



ASU is known for its deep commitment to entrepreneurship and its unique and effective approach to growing entrepreneurial enterprises. The teaching and practice of entrepreneurship is not confined to a single college or class, or to one center or research institute within the university. It is a mindset that is woven into the fabric of the University, permeating every activity.

Dr Iffert-Saleem coordinates the university-wide effort to advance entrepreneurship education. She is uniquely positioned to describe the role that the university plays in developing and supporting entrepreneurial outlook and skills. She has led the creation, implementation and institutionalization of several university-wide initiatives focused on entrepreneurship education.

Audrey is co-founder and co-owner of a creative services firm that has served clients including Car2Go, Dollar-A-Day and Target. She holds a doctorate in higher education leadership and an MA in human communication, both from ASU. Her research has involved engaging college women in entrepreneurship experiences.

FUTURE MEETINGS

DECEMBER 4
Andrew Maynard, Director
ASU Risk Innovation Center

NOTES FROM ...

President Ralph Palmer



**A Quick Look Into A Possible Future
HYDROGEN Infrastructure**

After decades of research and development, hydrogen cars are finally rolling into view.

Hydrogen can be processed in a chemical reaction that takes place inside a fuel cell. Replacing the old membranes using platinum with nano-materials (as well as other innovations) has reduced the cost of fuel cells by as much as 95 percent. Rather than the hydrocarbon byproducts from gasoline, the by-product from hydrogen is water vapor, which should please the environmental community.

Several carmakers have developed their own hydrogen-powered cars. Last year, Hyundai started leasing the Tucson Fuel Cell SUV in California. Toyota launched a hydrogen car called the Mirai in Japan in December, soon to be sold in the USA. General Motors, Honda, Ford, BMW Chrysler, and others have also produced hydrogen cars. Unfortunately, the hydrogen they run on is mostly made from natural gas in a process that releases significant amounts of greenhouse gases into the atmosphere. However, at least one scientist (Steven Chu, former energy secretary) and a Canadian startup company called *Inventys*, are developing methods of capturing carbon emissions that would reduce costs to \$15 a ton.

Costs can also be reduced by using renewable sources of electricity to power an electrolyzer, splitting water into hydrogen and oxygen. Another possibility would be to engineer catalysts to absorb sunlight and use its energy to split water. Or using the 'waste' heat from nuclear power plants to produce the hydrogen.

An advantage of hydrogen cars over electric cars is that they can be recharged more quickly: 10 minutes for 265 more miles as opposed to the current 20 minutes for 130 more miles for electrics.

Another advantage of a hydrogen-fueled infrastructure would be the geo-political elimination of oil-dependence--almost every country could produce their own hydrogen.

WELCOME BACK!

2015 OFFICERS

President	Ralph Palmer	623-815-8143
Vice President	Jackie Rice	623-572-8089
Secretary	Lee Roach	623-810-7413
Treasurer	Marilyn Pettigrew	623-337-4163

COMMITTEE CHAIRPERSONS

Programs	Daryl Lund	608-250-0659
Membership	Philip Main	623-748-8222
Reservations	Dave Whitehouse	623-544-0942
Luncheons	Tod Hamilton	623-910-2042
Scholarship	Len Cohen	623-546-3741
Member at Large	Les Sherry	623-975-9081
Newsletter	Jim & Pat Ardis	602-363-2267
Event Support	Dick Stout	623-815-0985
Web Site	Dave Campbell	623-518-4871
Publicity	Lance Berglund	623-734-3737
Field Trips	Lanny Barness	623-546-3364
Hospitality	Doris Palmer	623-518-4871
Past President	Dave Campbell	623-815-8143

TREASURER'S REPORT SEPT 2015

General Fund Balance: \$ 5,241

Scholarship Fund Balance: \$ 3,635

JUNE 50/50 RESULTS: Winner \$66 / Scholarships \$66

LUNCHEON MENUS

October 2: #1 Chicken Marsala or #2 Battered Cod.

Both entrées come with Salad, Balsamic Rice, Green Beans Almandine, Apple Turnover and Ice Cream.

(Grilled Vegetable Plate or Fruit Plate also available)

November 6: #1 Turkey Medallions with Cranberry Sauce and Apple Walnut Stuffing or #2 Grilled Salmon.

Both Entrées come with Salad, Mashed Potatoes, Green Beans Almandine, Vanilla Ice Cream and a Cookie.

(Grilled Vegetable Plate or Fruit Plate also available)

RESERVATION POLICY

The cost of the monthly luncheon is \$18.00 cash or check.

The reservation deadline is 6PM Monday before the meeting.

Late reservations cannot be guaranteed the regular meal.

Call Dave Whitehouse if you cannot keep your reservation.

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

WELCOME NEW MEMBERS!

Leif Christensen Harold Thompson

Jack Sheehan

Current club membership is 131

MEMBER SPOTLIGHT

An occasional series of articles focusing on the background and careers of Club members.

Dave Whitehouse is a born and bred New Englander (Massachusetts). He spent 3 years in the regular army teaching Redstone Missile System to officers at Fort Sill OK, obtained a BSEE degree at the University of New Hampshire, and then joined RCA's Phototube Division in Lancaster PA.



He was 3 hours (one paper) short of earning a MS at Penn State when he transferred to the Memory Division of RCA in Newton, Massachusetts. He then relocated to Lewiston, Maine to RCA's Computer Division. After spending 2 billion dollars in that division, RCA closed the computer operations after 1 year, and Dave moved back to Massachusetts to CMI (ne Cambridge Memories, Inc.), which was still operating.

After a short stint with Digital Equipment Corporation (DEC), Dave joined Eaton Corporation Test Division as manager of engineering. He sort of helped to raise three great children while traveling back and forth to California for Eaton and later for Technology Marketing Inc., which bought out the Eaton Division. After his two older kids were on their way (Army and Art school), he moved to California with his wife, Susan, mother-in-law and youngest kid. When the job market died in the late 80's, he had a stint with Hercules Computer Technology as a Manufacturing Manager consultant, then a year as Director of Engineering for Systems Technology International.

Dave then retired to New Hampshire. Needing health insurance, he joined Vutek Corporation, maker of 15-meter vinyl billboard printers. He started as an employee, and ended as Manager of Test Engineering. When he needed to retire again after three years, the company sent him all over the world to update various machines he had helped build over the years. He was joined by Susan twice to Europe (was mugged in Madrid) and to China, Japan and Jakarta.

After six years of snow birding, Dave and Susan settled in Sun City West. He joined the Engineering Club at the behest of then-neighbor Bill Harrison and soon after took the Field Trips Chair. When Gene Comstock retired from the Reservations Chair in 2009, Dave volunteered to take over the position and has kept the system running smoothly ever since. His other interests are golf and the Woodworking Club, serving as treasurer for the past eight years.

Dave's daughter runs a horse farm in New Hampshire with her ex-cop, now contractor husband. Her two kids are out on their own, sort of. His older son retired from the Army after 20-odd years and lives in Kentucky with his wife of 24 years and three kids who are all now in college. His younger son works for Roche Medical and is now temporarily living in Switzerland with his wife and two kids.



Clint Hickman favored members at the June meeting with the story of poultry operations at Hickman's Family Farms.