

# VALLEY ENGINEERING, SCIENCE & TECHNOLOGY CLUB

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

JANUARY 2016 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 8 PROGRAM

### Leading Innovation Through Immersive Technologies

Anuraag Kochhar, VP of Technology, PerfOpt3D



We exist in a 3D world — it is now time that we compute in 3 dimensions as well. And the new Immersive Technologies, like Virtual Reality, 3D printing, 3D Scanning, 3D Modeling, Robotics, Cybernetics etc., are making that possible.

With more than 19 years of experience in technology and executive management, Anuraag Kochhar is VP, Technology at PerfOpt Technologies Inc. Based in India, Anuraag oversees technology operations for PerfOpt in US, Europe and India, helping develop software for the 21st century. 3D scanning and modeling are being used in health care, engineering, architecture and many more fields. New devices perform 360 degree video recording, which may then become the basis for immersive experiences using virtual reality, the next platform for gaming, education, media and travel. Together, these immersive technologies lay the foundation of the maker movement.

## NOTES FROM ...

### President Jackie Rice



#### Final "Notes" for 2016

The subject of "Note from your president" will change for next year as I know nothing of engineering and only a little about physics. Hope this is not to disconcerting for all of you engineers.

#### Could Stem Cells be the next Penicillin?

Chances are that you have heard about stem cells. But did you know that stem cells are being used right now in the United States to treat debilitating lung diseases? With advancements in the study of stem cells, the question is posed: are stem cells the next penicillin? Just like penicillin, stem cell biologists have won Nobel Prizes for their discoveries.

Over time, stem cells have crept into the national dialogue as a buzzword, particularly the stem cells found in fetuses. However, the stem cells that are used to treat diseases in the United States are adult stem cells, which are found fully developed in all people.

Today, a clinic called the Lung Institute is using adult stem cells from the patient's own fat, blood or bone marrow. The physician gives the patient a growth factor that multiplies the stem cells, then reintroduces them into the patient. The result, healthy cells replace the damaged ones found in the lungs.

Just as penicillin was recognized by the medical community, so have stem cell developments. If the number of people who have already been successfully treated with stem cells is any indication of the future, then it will undoubtedly be heralded as one of the ground-breaking medical technologies of its time.

## February 12 PROGRAM

### Gamification in Education and the Workplace

Ben Reichert, Associate Professor  
University of Advanced Technology, Tempe, AZ



We all play games. As companies and schools seek to further motivate and engage their employees, customers and students, game design has become an increasingly popular tool. Whether through using actual games or gamification, institutions are betting big that game psychology taps into universal truths about human behavior and can improve education and bottom lines.

Professor Reichert is a Professor at the University of Advancing Technology and Co-Founder and CEO at the Game CoLab and Abeona Games. He is an internationally published and award-winning entrepreneur with experience in video games, transportation, and conflict management. Previously, Professor Reichert worked on advocacy and fundraising for the international peace building efforts of Nonviolent Peaceforce, developing and managing the European communications strategy for the International Road Transport Union, and served as the first Assistant Director for the ASU Center for Games and Impact.

## FUTURE MEETINGS

March 11

Local Motors (speaker TBA)

Topic: Latest in Advance Manufacturing,  
Additive Manufacturing, 3D Printed cars and microfactories

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Club dues must be paid before the end of February for 2016. Soon after paying, you will receive a club directory.  
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**[Need Scholarship Committee Volunteer for 2016!](#)**

**Luncheon Meeting Dates 2016: January 8, February 12, March 11, April 1, May 6, June 3, October 7, November 4, and December 2**

## 2016 OFFICERS

President	Dr. Jackie Rice	623-572-8089
Vice President	Tod Hamilton	623-910-2042
Secretary	Doris Palmer	623-815-8143
Treasurer	Marilyn Pettigrew	623-337-4163

## 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	623-734-3737
Publicity	Lance Berglund	623-546-3364
Field Trips	Lanny Barness	623-815-8143
Hospitality	Doris Palmer	623-518-4871

## TREASURER'S REPORT OCTOBER 2015

**General Fund Balance: \$5545.32**  
**Scholarship Fund Balance: \$4590.42**

**Lottery Proceeds to Scholarship Fund: \$144**

## LUNCHEON MENUS

**January 8: #1 Roast Breast of Tom Turkey with Gravy or #2 Grilled Salmon.** Both served with Salad, Creamy Mashed Potatoes, Steamed Broccoli, Ice Cream and a Rolled Cookie. (*Grilled Vegetable Plate or Fruit Plate also available*)

**February 12: #1 Grilled Chicken Cordon Bleu or #2 Baked Cod.** Both Entrées come with Salad, Balsamic Rice, Corn O'Brien, Fudge Nut Brownie w/whipped cream. (*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 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**

## WELCOME NEW MEMBERS!

**Current club membership is 141**

- ◆ Bill Butler
- ◆ Lee Holferth
- ◆ Joseph Butterweck
- ◆ Frank Reichert
- ◆ Noelle Jobson

## Phillip Main Bio



Phil began his long, innovative career in engineering at Union Carbide in NY. From a very young age, Phil's parents fostered his devotion to engineering and natural ability in math by enrolling him in courses at Boston's Museum of Science. His early academic success landed him several panelist positions on local science and math radio quiz shows and eventually, early acceptance at the University of Massachusetts, where he majored in Mechanical Engineering. During his last semester, he and his wife Carol were married.

Although trained in mechanical engineering, Phil would spend 33 years as an electrical engineer with Union Carbide. During his first position with the company, he worked on an induction pressure vessel that impregnated stock with pitch to increase the carbon content. Parts were graphitized in an induction furnace at 3000°C. When the original induction furnace burned up, Phil designed a new one using large blocks of graphite to make 60" rings which stacked together. The stock had been buried on the property and his furnace lasted 20 years.

After his first six years, Union Carbide transferred Phil and his family to Greenville, SC for advanced training, where he spent the next 27 years. His area produced graphite yarn and felt. The yarn was made by pulling a poly-acrylic-nitrile yarn through a tube furnace at 3000°C in a chlorine atmosphere at a prescribed ratio, which required synchronous motors and drive systems to control speeds exactly. Eventually, the source of the motors dried up and Phil found 18 motors with belt drives and gear reducers abandoned in a warehouse. He stripped the belts and drives off and reworked the heads. His team met their deadline – at no additional component cost to the company.

Phil retired in 2005 to Arizona, where he resides with his wife Carol. He continues to be active in their church, running the sound and audio, as well as serving on the session. Together, Phil and Carol are also co-presidents of The New England Club.



Andrew Maynard from ASU's Risk Innovation Lab is thanked by Pres Ralph Palmer and Program Chair Daryl Lund.