ENGINEERS CLUB OF THE WEST VALLEY

APRIL 2011 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 - - Reservations are required - - Just call (623)544-0942 to let us know you are coming.

APRIL 1 PROGRAM

Groundwater and Soil Contamination Assessment and Remediation Systems

Paul C. Johnson, PhD
Dean, Fulton School of Engineering, ASU

Dr. Johnson is a Professor in the School of Sustainable Engineering and the Built Environment and is also the Dean of the Ira A. Fulton Schools of Engineering. Before joining ASU in 1994, he was a Senior Research Engineer at the Shell Oil/Shell Chemical Westhollow Technology Center. His teaching, research, and professional activities focus on the application of contaminant fate and transport fundamentals to subsurface soil and groundwater remediation and risk assessment problems.

Groundwater contamination in the Phoenix area is substantial and reflects the local history of both industry and agriculture. Our local experiences are not unique and are mirrored at the national level. Billions of dollars have been spent nationally to cleanup and mitigate the impacts of past industrial waste disposal practices and accidental spills. Despite those efforts, there are still more than 100,000 sites remaining with estimated cumulative financial liabilities exceeding hundreds of billions of dollars.

This presentation will provide insight to the issues and technical challenges affecting these efforts at both the national and local level, as well as innovations being developed at ASU.

MAY 6 PROGRAM

Lightning Phenomena & Protection

George G. Karady, PhD
Power System Chair Professor
Arizona State University

Lightning strikes again! But what do we really know about it? Our speaker will review the physics of lightning generation and present statistical data on lightning occurrence, types of lightning-caused damage, and the distribution of lightning current. He will describe lightning protection for buildings and electrical transmission lines, and the impact of lightning on the operation of the electrical grid. He will discuss the danger of lightning strikes and how to avoid them, as well as the "miraculous lightning prevention techniques" that have periodically been promoted through history.

Dr Karady received his MSEE and Doctor of Engineering degree in electrical engineering from Technical University of Budapest and is currently the Power System Chair Professor at Arizona State University, where he teaches electrical power and performs research in Power Electronics, High Voltage Techniques and Electric Power Systems. Previously, he served as Chief Consulting Electrical Engineer at EBASCO Services. Earlier, he was Electrical Task Supervisor for the Tokomak Fusion Test reactor project at Princeton and worked for the Hydro Quebec Institute of Research and at the Technology University of Budapest.

Professor Karady is a registered professional engineer in New York, New Jersey and Quebec. Active in many professional organizations including IEEE. He is the author of more than 200 technical papers.

NOTES FROM . . .

President Don Block

Advances In Medical Technology

Several years ago we heard about the work on the human genome. Then a few years ago we heard about the research work being done by T-Gen and also the work being done by the Sun Health Research Institute. Now I am reading about the possibility of greatly reducing the cost of the genome sequencing to the point that it will no longer just be a Research tool. Today reading the sequence of DNA in a genome still costs between $10,000 - $20,000.

A small company, Ion Torrent, recently acquired by Life Technologies, appears to be ready to change the paradigm. It has developed a table top sequencer that costs about 1/10 the cost of other new technology sequencers. This machine does not sequence the whole DNA string but focuses on specific known trigger points in the DNA. Researchers at Massachusetts General Hospital for example are setting up a system to look for 200 "hot spots" (regions of the DNA that have been linked to cancer) in tumor samples.

The system uses a chip laid out like an imaging chip in a digital camera with millions of sensors that detect changes in chemical signals. One piece of the DNA of interest goes into each of these sensors which is equipped with its own independent sequencing machine. Basically using a parallel processing approach enables very fast processing of specific sections for the DNA.

If this technology is successful, it is still too soon to tell, Patients will be just as likely to have their genomes sequenced as they will be to get a CT Scan or MRI. The exciting thing is that sequencing doesn't just tell you where you are but it can tell you what the future holds. More importantly it will be able to help the medical team choose the proper treatment.

Again we see electronic technology advancing the medical field thereby helping us live a longer and healthier life.

RAM Disc is not an installation procedure

JUNE 3

Biologically-Coupled Robotics: Applications from Ball Catching to Stroke Recovery Therapy

Dr. Michael McBeath, ASU

2011 OFFICERS

President	Don Block	546-0557
Vice President		
Secretary	Jodie Lawrosky	238-5256
Treasurer	Bob Latvalla	546-7801

COMMITTEE CHAIRPERSONS

Programs	Daryl Lund	271-7337
Membership	Bob Kessler	910-7054
Reservations	Dave Whitehouse	544-0942
Luncheons	Tom Watkins	584-5811
Scholarship Chairman	Don Porter	556-1754
Scholarship	Bill Blackman	214-6550
Scholarship	Don Johnson	975-1657
Scholarship Advisor	Gerry Montag	546-7963
Member at Large	Les Sherry	975-9081
Newsletter	Bill Harrison	546-4943
Event Support	Ralph Palmer	815-8143
Web Site	Dave Campbell	518-4871
Publicity	Maurice Hoyt	533-4213
Field Trips	Fred Scheske	556-2892
Past President	Hal Clemett	546-4941

BOARD EMAIL ADDRESS: board@engineersaz.com

TREASURER'S REPORT 2-28-2011

General Fund Balance: $6,434.40
Scholarship Fund Balance: $2,921.61

LUNCHEON MENUS

April 1: Roasted Breast of Turkey with Mashed Potatoes and Gravy, Chef's Vegetable and Vanilla Ice Cream with a Rolled Cookie. (Entrée Option: Fruit Plate)

May 6: Yankee Pot Roast with Natural Gravy, Broiled Red Potatoes, Chef's Vegetable and Spumoni Ice Cream. (Entrée Option: Fruit Plate)

RESERVATION POLICY

The cost of the monthly luncheon is $17.00 per person.
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 luncheon cost is due for "no-shows" and cancellations after 6PM on the Wednesday before the meeting.

RESERVATIONS Dave Whitehouse (623)544-0942

RAFFLE RESULTS AND DONATIONS

The winner of the raffle at the March meeting was Lee Shinn. He donated his winnings of $93.00 to the Scholarship Fund. Thank you Lee for your generosity.

WELCOME NEW MEMBERS

Jerome Brown, Charles Earnshaw, Greg Heady, Richard Kesterke, Kenneth Linwick & James McIntosh

Club Membership is 137

Field Trip to the Palo Verde Power Generation Plant

The Engineers Club is in the process of arranging a guided tour of the Palo Verde Nuclear Power Generating Station. Since the policy of the Palo Verde facility requires that we all arrive on one bus, we plan to employ the services of a local bus company. It is anticipated the bus will accommodate approximately 47 people.

If more than 47 should sign up to attend, then a procedure will be set up to select people on possibly a lottery basis or merely a first-come, first served basis.

There will be a per person fee for the round-trip. The current plan is for the tour to take place in November of this year. . Stay tuned for further developments.

Ralph Palmer

Dr Stephen Helms Tillery *receives a certificate of appreciation from Don Block for his presentation on the computer control of artificial limbs.*