

ENGINEERS CLUB OF THE WEST VALLEY

MARCH 2013 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.

MARCH 1 PROGRAM

PaleoBio Origins of Multicellular Life

*Mark Zamoyski, CEO
NexGen Biomedical, Inc.*



Mark Zamoyski received both his BS and MBA from Cornell University. By profession, Mark explores new technologies and methods of treating diseases. He has been awarded 15 US patents that include new and different approaches to the treatment of cancer and certain migraines and seizures.

Mark has also had a scientific curiosity in the history of life on earth that started several decades ago from fossils prevalent on some of the family properties in Arizona. His presentation will cover the origins of multicellular life that are brought to life by 33 never before seen fossils from 250 million years ago. From that beginning, the reassortment of cells went on to become and include the forerunners of worms, fish, reptiles, dinosaurs and mammals.

NOTES FROM...

President Don Block



I was looking at the latest issue of the MIT Technology Review and was intrigued by a new technology which, in a way seems a step backward at first glance. Touch screens have become ubiquitous: in 2012, 1.2 billion were made for smart phones and 130 million for tablets. Typing on them can be difficult however and a venture-backed company, Tactus Technology, has been addressing the problem. They are prototyping touch-screen hardware with buttons that emerge when you need the feel of a physical keyboard and then disappear when not needed.

They have created a multi-layered panel that contains micro-channels filled with a proprietary oil. When signaled by say, a person launching a text-messaging application, an actuator pumps additional fluid into the channels and buttons rise up from an elastomeric cover. When typing is done, the panel reverts to a flat screen for finger-swiping within one second. Although Tactus is not the only company working to address this problem, their approach is the only one that allows users to orient their finger on the screen before actually depressing the key, or to rest their fingers on buttons without triggering them.

Interesting – we develop a technology to get away from buttons and go to a touch screen and now find it necessary to figure out a way to make the touch screen look and act like the button it is replacing.

APRIL 5 PROGRAM

Neural Control of the Human Hand

*Marco Santello, PhD
Arizona State University*



Dr. Santello is Professor and Harrington Endowed Chair in the School of Biological and Health Systems Engineering at Arizona State University. He conducts research on neural control of the hand using complementary approaches, ranging from intramuscular electromyography and transcranial magnetic stimulation to hand kinematics and dynamics. This research has applications to rehabilitation of hand function, neuroprosthetics, and biologically-inspired robotics.

How the central nervous system controls movement has intrigued scientists, engineers, and artists for centuries. The hand sensorimotor system is a fascinating model for studying neural control of movement due to its complex mechanical architecture, intricate networks of sensory receptors, and large number of muscles. The hand also plays a crucial role in activities of daily living but its functionality can be impaired by a wide range of musculoskeletal and neurological disorders. Therefore, understanding hand control mechanisms is important also because of its potential to improve medical intervention to restore hand function. In the laboratory, we have been studying how the brain controls the hand at different scales, ranging from single cells (motor units of hand muscles) to system level (kinematics and kinetics).

Marco will present a review of his work in the context of basic science of motor control (mechanisms) as well as clinical applications including brain-machine interfaces, prosthetics, and robotics.

PING FACTORY TOUR

A tour of the Ping factory will be held on April 10, 2013. The tour starts at 9:00 AM and will last 1.5 to 2 hours.

Ping golf clubs are manufactured at Karsten Manufacturing located at 2201 Desert Cove Ave. Phoenix, AZ

The tour includes both indoor and outdoor demonstrations and a visit to the manufacturing test facilities. If scheduled before the tour starts, individuals can be scientifically fitted for golf clubs after the tour. This service is free.

Ping does not sell clubs at this facility.

RAFFLE RESULTS AND DONATIONS

The winner of the February raffle was Bill Black who received \$113 with an equal amount added to the Scholarship Fund.

2013 OFFICERS

President	Don Block	623-546-0557
Vice President	Dave Campbell	623-518-4871
Secretary	Lee Roach	623-810-7413
Treasurer	Bob Latvalla	623-546-7801

COMMITTEE CHAIRPERSONS

Programs	Daryl Lund	608-250-0659
Programs	Bob Farrell	623-810-5095
Membership	Bob Kessler	623-910-7054
Reservations	Dave Whitehouse	623-544-0942
Luncheons	Doug Keeler	541-480-8476
Luncheons	Tom Watkins	623-584-5811
Scholarship	Len Cohen	623-546-3741
Scholarship	Don Johnson	623-975-1657
Scholarship	Gerry Montag	623-546-7963
Member at Large	Fred Scheske	623-556-2892
Newsletter	Bill Harrison	623-546-4943
Event Support	Dick Stout	623-815-0985
Web Site	Dave Campbell	623-518-4871
Publicity	Maurice Hoyt	623-533-4213
Field Trips	Keith Morrow	623-546-3080
Past President	Les Sherry	623-975-9081

BOARD EMAIL ADDRESS: board@engineersaz.com

TREASURER'S REPORT 1/21/2013

General Fund Balance:	\$4,822.20
Scholarship Fund Balance:	\$2,367.10

LUNCHEON MENUS

March 1 Entrée #1: Salisbury Steak.

Entrée #2: Orange Roughy. Both include Salad, Lyonnaise Potatoes, Green Beans Almandine and an Apple Turnover with Ice Cream.

(Entrée Option: Fruit Plate or Grilled Vegetable Plate)

April 5 Entrée #1: Yankee Pot Roast w/Natural Gravy.

Entrée #2: Pan Fried Trout Almandine. Both will include Salad, Creamy Mashed Potatoes, Chef's Vegetable and Ice Cream with a cookie.

(Entrée Option: Fruit Plate or Grilled Vegetable Plate)

RESERVATION POLICY

The cost of the monthly luncheon is \$18.00 per person.

The reservation deadline is 5 PM 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 5PM on the Wednesday before the meeting.

RESERVATIONS Dave Whitehouse (623)544-0942

WELCOME NEW MEMBERS

Bob Cooper and Raylin Olson

Club Membership is 163

Do Lipton Tea employees take 'coffee breaks'?

Gravity

(Extracted from: *The Science Behind Alien Encounters*)

By Robert E. Farrell

For decades scientists around the world have been working to alter or produce gravitational fields. One of the more notable efforts has been by Dr. Evgeny (Eugene) Podkletnov and his team at the Tampere Institute of Technology (Finland) and Dr. Giovanni Modanese in Italy. Dr. Podkletnov is an experimentalist with a background in material science but he became interested in gravitational effects during an experiment with a high temperature superconductor. As a superconductor was being levitated and rotated at high speeds (40,000 rpm) in the lab, a passerby inquired as to what Podkletnov and several technicians were doing. Through serendipity, the passerby was smoking a pipe and the smoke from his pipe formed a column over the superconductor. This intrigued Podkletnov who began some experiments to study the effect. He found that any material placed above the superconductor had a measurable loss in weight. In other words, the gravitational property of mass was altered. He has discovered there are several ways to achieve this effect. One can use high voltages, high magnetic fields, and extremely high rotational speeds, or a combination of these. Also, as his experiments demonstrated, the topological effects of superconductors can also be used. He believes that his discoveries do not violate Einstein's General Theory of Relativity because relativity does not apply to rotating fields. However, rotation implies acceleration, and Einstein's field equations do prove that any accelerated substance or energy quanta is a source of gravity.

An offshoot of his work has led to the development of a "Gravity Impulse Generator." In a later article, I will discuss some of the amazing results he has achieved with this device.



Dr. Bruce Rittmann receives a certificate of appreciation from Bob Farrell for his presentation at the January luncheon on Engineers, Microorganisms and Global Climate Change.