

VALLEY ENGINEERING, SCIENCE & TECHNOLOGY CLUB

January 2020 NEWSLETTER

www.engineersaz.com

The Engineers Club is a social organization which meets monthly for lunch with a speaker on a topic of interest. Spouses and guests are invited and many attend regularly. Short field trips are occasionally scheduled. Membership is open to anyone who has worked in or has an interest in Engineering, Science or Technology. 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

JANUARY 3 PROGRAM

Title: 20 years of Antarctic Ballooning

Speaker: Phil Mauskopf , PhD, ASU



Phil Mauskopf is a Professor at ASU in the School of Earth and Space Exploration and the Department of Physics. His work centers on designing telescopes and detector systems for long wavelength astronomy and cosmology. He first came to Antarctica in 1998 to launch the BOOMERANG telescope on a long duration balloon.

BOOMERANG was a US/Italy/UK collaboration and made international headlines with the release of the first high fidelity map of the cosmic microwave background and gave the first precise measurement of the curvature of the universe. Since then, Prof. Mauskopf has been involved with 4 other Antarctic balloon launches, a second BOOMERANG launch in 2003 and three BLAST launches. All of these experiments have produced significant science results.

Abstract: Just over twenty years ago, NASA launched the BOOMERanG balloon-borne telescope with a 1.5 meter primary mirror and a cryogenic receiver weighing just over 4000 lbs. BOOMERanG returned the first resolved images of the anisotropies in the cosmic microwave background (CMB) after a 10 day circumpolar flight at an altitude of just over 120,000 ft. Detector technology developed for BOOMERanG was tested in the balloon environment and subsequently used in the ESA/PLANCK satellite to map the CMB over the full sky. Since then, members of the ASU astronomical instrumentation group have been involved with the Balloon-borne Large Aperture Submillimeter Telescope (BLAST) project with three successful Antarctic flights and now the BLAST-TNG experiment which is scheduled to launch this austral summer (December, 2019) as well as the Italian-led OLIMPO experiment which had a northern hemisphere flight just over one year ago. Both of these payloads have ~2.5 meter telescopes with new detector technology called kinetic inductance detector arrays (KIDs). These detectors are a likely technology to be flown on the next large NASA far-infrared space mission, currently called the Origins Space Telescope. I will describe the discoveries made by the balloon missions so far and the prospects for the future.

V.E.S.T. SCHOLARSHIP UPDATE By Carol Mungas and Jim Schlenvogt

Each year V.E.S.T. awards a scholarship to an engineering, science or technology student completing their sophomore year and entering Arizona State University as a junior. We have worked primarily with Glendale Community College in this endeavor and have been ably assisted by Frances Mateo, who is Director of Development for GCC. The VEST Scholarship Committee includes the following members: **Carol Mungas, Karen Campbell, Barb Doyen, George Zieglgansberger, Gerald Weiss, and Jim Schlenvogt (Chairperson).**

Once the VEST Treasurer receives the Student ASU ID #, the V.E.S.T. scholarship payment is made directly to ASU in two installments – one in August and one in January. The ASU Financial Aid Office deposits the funds in the student's "MyASU Account." These funds are applied to ASU charges for tuition, fees, housing, and meal plans, but not books. If all ASU charges are paid, the balance, if any, is refunded to the student. The cost for university tuition and fees is \$12,400 per year and this does not include books, housing, food, or other related expenses.

For the academic year 2019-2020, we awarded four student scholarships, one \$3,000.00 scholarship and three \$1,000.00 scholarships. The first half payment has been made. In December the student must provide proof he/she has maintained a 3.0 grade point and are enrolled for the second semester before the second half payment is made.

If we are to continue as a club with one of our goals of awarding annual scholarships, we must plan to augment the Scholarship Fund, since only half of the dues (\$10.00 per person) and the 50/50 Raffle net revenue (average about \$70.00 /meeting) goes directly to scholarship. The VEST goal each year is to award at least one \$3,000 scholarship and if additional money is available, to award additional scholarships to worthy students. At the December Meeting we received **holiday donations of \$865** toward a second VEST Scholarship. This was a wonderful response and we will continue to accept additional scholarship donations. In addition, if anyone has any ideas for fundraising, please let us know. For additional information see the VEST web site at www.engineersaz.com within the Scholarship section or contact one of the VEST Scholarship Committee members. Your support of the VEST Scholarship Fund is greatly appreciated by the deserving students!

2020 VEST LUNCHEON DATES

February 7, March 6, April 3, May 1, June 5, October 2,
November 6, December 4

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2020 OFFICERS

President	Steve Sumner
Vice President	Open
Secretary	Marilyn Dumond
Treasurer	Carol Mungas
Asst. Treas.	Dave Campbell

COMMITTEE CHAIRPERSONS

Programs	Rick Cecil / Sarah Ruhlen
Membership	Philip Main
Reservations	Chuck Wasik
Luncheons	Jackie Wasik
Scholarship	Jim Schlenvogt
Member at Large	Peter Rauen
Member at Large	David&Susan Whitehouse
Newsletter / Website	Dave Campbell
Event Audio	Hal Lind
Event Computer	Paul Scherer
Publicity	Lance Berglund
Field Trips	Eric Muhly
Hospitality	Doris Palmer

Email the Board at: board@engineersaz.com

FEBRUARY 7 PROGRAM

Title: The Future of Energy is Bright

Speaker: Kerri Carnes, APS



Ms. Carnes is the Manager of Product Strategy and Development for Arizona Public Service's (APS) Customer Technology organization. Her team is focused on the technologies, products and programs APS's customers desire today and into the future - from smart thermostats to microgrids and Demand Side Management strategies to electric vehicles, and everything in between. During her 16 year career with APS, she has led numerous project teams. **Abstract:** The future of energy is certainly bright! 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 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.

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. This new frontier 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. The challenges and opportunities of today's energy landscape are many and often complex. We'll explore those challenges and opportunities and also the way we are all contributing to a bright energy future!

TREASURER'S REPORT DEC 2019

General Fund Balance:	\$ 11,150.30
Scholarship Fund:	\$ 601.00
Membership Total:	143

November 50/50 was \$ 64.00 - Congratulations to winner Doug Totel !
2020 Membership dues are now due.

LUNCHEON MENUS

January 3: #1 Beef Stroganoff, Tenderloin Tips in Red Wine Demi, Finished with Sour Cream over Egg Noodles or **#2 Poached Chilled Shrimp Remoulade Salad** with mixed greens. Both entrées include a Chocolate Glazed Brownie with Whipped Cream (**Grilled Vegetable Plate or Fruit Plate also available**)

February 7: #1 Meatloaf Express, Meat Loaf with Mushroom Sauce, Mashed Potatoes, Sautéed Green Beans or **#2 Fish & Chips**, Golden Fried Panko Crusted Cod, French Fries and Cole Slaw. Both entrées include a Fresh Baked Jumbo Cookie (**Grilled Vegetable Plate or Fruit Plate also available**)

RESERVATION POLICY

The cost of the monthly luncheon is \$24.00 cash or check. The reservation deadline is 6 PM Monday before the meeting. **Late reservations cannot be guaranteed the regular meal.** Call Chuck Wasik at 623-537-9196 to cancel your reservation. Note that the full cost of the luncheon will be charged for "no-shows" and cancellations after 5 PM on Monday before the meeting. Please have cash or make out your check in advance.

FUTURE MEETINGS

March 6

Title: Smart Sewers for Smart Cities: Informing on Public Health through Wastewater Analysis
Speaker: Adam J. Gushgari, PhD, PE ASU



Energizing the Southwest
December 3 speaker: Kory Rafferty, Palo Verde Nuclear Station, APS
For more information on our speakers, please visit our website at www.engineersaz.com