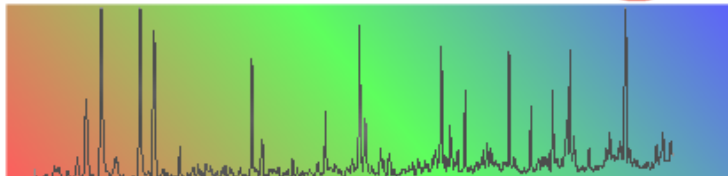




SAS-Chicago



October Meeting

Tuesday, October 11, 2011

The October 2011 meeting will be held at the Holiday Inn, located at 1000 Busse Road, Elk Grove Village, IL 60007. See the map on the last page.

Social Hour: 5:30 PM

Dinner: 6:30 PM

Speaker: 7:30 PM

Living on a Dusty Moon

Kenneth W. Street, Ph.D.

*National Aeronautics and Space Administration
John H. Glenn Research Center, Cleveland, OH*

The Moon could serve as the launch pad for human exploration of Mars and the rest of our solar system because of reduced gravity and abundant resources. In 2004, President George W. Bush set forth a Vision for Space Exploration in which we return to the moon for a sustainable presence. As background information, the first Apollo missions including a lunar roving vehicle (LRV) to transport the astronauts (Apollo 15 in 1971 and Apollo 17 in 1972) had specifications for operation in an environment of +120°C for as much as 2 years. The goal for lunar equipment in our eventual return to the moon includes an extended lifetime (say for five years) to accommodate multiple visits of on the order of a month or more duration. This equipment must operate and survive in lunar regolith having particle sizes ranging from 30 nanometers to centimeters. The majority of equipment damage in the Apollo missions was caused by dust. In order to return to the moon, the interaction of equipment and humans with lunar dust must be better understood and all equipment must be tested in a relevant environment which makes not only an understanding of these properties important but it will be necessary to duplicate these properties in terrestrial simulants for testing purposes.

“I think dust is probably one of our greatest inhibitors to a nominal operation on the Moon. I think we can overcome other physiological or physical or mechanical problems except dust.” - Gene Cernan, Apollo 17 (technical crew debriefing)

The lecture will include a review of known conditions in the lunar environment, why these and other physical properties of dust are important, and how we are evaluating them. The lecture will conclude with the current status of NASA efforts to duplicate the lunar dust environment on earth for testing purposes.

Please make your dinner reservations for the upcoming meeting by email at sas.chicago1@gmail.com, using our online form <<http://www.sas-chicago.org/Online%20Registration%20at%20Elk%20Grove%20Holiday%20Inn%20.htm>> or by calling Slav Stepanovich at 847-421-2056. Leave **your name, company affiliation, a telephone number, the number of reservations and your choice of entree**. Please call by **noon Friday, October 7th**, so that proper arrangements can be made with the restaurant. Credit card payments must be made online at <sas-chicago.bbnow.org> prior to the meeting. Only payment by cash and check will be accepted at the meeting. Contact us if you can't attend; the SAS is charged for no-shows.

Entree choices: Rib Eye Steak, Roasted Chicken, Pasta Primavera, or Caribbean Tilapia

Dinner Cost Members: \$30

Students and Unemployed Members: \$10

Non-members: \$30

Dr. Kenneth W. Street, a Materials Research Engineer, joined the staff of the National Aeronautics and Space Administration's John H. Glenn Research Center in February 1991.

He began his career with GRC in the Environmental Programs office where he ran a chemistry laboratory analyzing a variety of samples such as water, paint, fuels, etc mainly looking for hazardous components. During that time, he did research on materials to remove toxic metals from water and was awarded a patent for invention of a novel ion exchange material. Presently, he is involved in research on friction and lubrication using optical spectroscopy to analyze space lubricants, diamond like coatings and wear materials. He has participated in many programs throughout the center and has analyzed a wide variety of materials including Teflon from the Hubble space telescope and Egyptian antiquities from the Cleveland Museum of Art.

A native of Waterford, Connecticut, Dr. Street earned his Bachelor's degree in chemistry from the University of Connecticut in 1970; and a Master's degree in chemistry from Cleveland State University in 1973. He received his Doctorate in 1977 from Wayne State University specializing in analytical chemistry.

Dr. Street is the author of approximately 90 papers and several book chapters in the area of chemical analysis, pharmaceutical analysis, tribology and instrumentation evaluation. He is a member of several professional societies: American Chemical Society, Society for Applied Spectroscopy, and Sigma Xi The Scientific Research Society. In 1996 and 1997, he was nominated for NASA Inventor of the Year Award, and in 2011 he was elected Fellow of the American Chemical Society.

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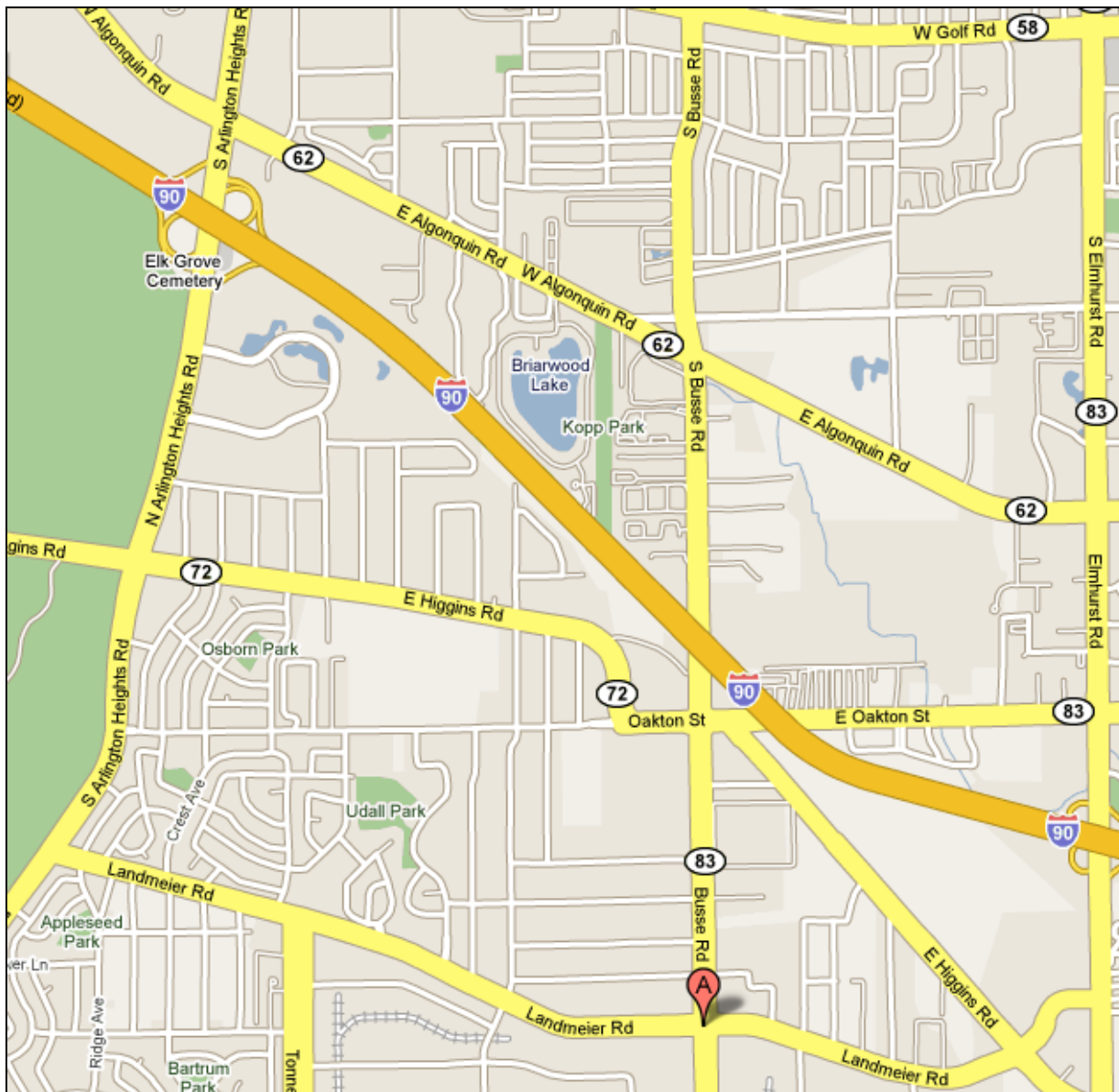


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