



Arizona Geological Society Newsletter

ARIZONA GEOLOGICAL SOCIETY, INC., TUCSON, AZ

DECEMBER 2010

December 7, 2010 DINNER MEETING

Susan Cummins Miller will be our featured speaker. See abstract below.

Where: Sheraton Four Points Hotel, Wild Cat Room, 1900 E. Speedway Blvd. in Tucson

When: Cash Bar at 6 pm, Dinner at 7 pm, Talk at 8 pm.

Cost: With reservation, members \$24, guests \$27, Students \$10.

Without a reservation a \$3 surcharge will be added (if the hotel is able to accommodate you).

RESERVATIONS: CALL 520.663.5295 by 5 p.m. on December 3, 2010. Indicate low-salt, vegetarian, or vegan meal preferences. A coffee/salad/roll/dessert option is also available for \$18. Please cancel if you are unable to attend. The hotel cannot guarantee that meals will be available without a timely reservation.

ABSTRACT

Tuff Love and Tigers-Eye: Earth Science and Place in the Frankie MacFarlane Mysteries

The Frankie MacFarlane mysteries are not unique in incorporating geology into crime fiction. The first published use of forensic geology occurred in the Sherlock Holmes stories by Sir Arthur Conan Doyle. Dr. Watson, describing Homes in *A Study in Scarlet*, says: "Knowledge of Geology--Practical but limited. Tells at a glance different soils from each other. After walks, has shown me splashes upon his trousers, and told me by their colour and consistence in what part of London he had received them."

Science in fiction appeals to a sophisticated audience, readers who also watch television shows such as *CSI*, *Forensic Files*, *Bones*, and *Nova*. The challenge of a mystery series featuring a geosleuth protagonist is to give the audience enough scientific detail to create verisimilitude and a textured depiction of place, but not too much--recognizing that each reader's tolerance of science will be different. The process is like navigating a knife-edged ridge in a gale.

Using short excerpts from the Frankie MacFarlane novels, and slides of the locales in which the books are set, I'll demonstrate how I introduce readers to aspects of earth science through book titles, plot elements, settings, and character descriptions.

***Susan Miller will be happy to autograph your copies of her books at the December dinner meeting.
Copies will be available for purchase at the meeting.***

Award-winning writer, geologist, and poet **Susan Cummins Miller** was born and raised in southern California. She attended the University of California, Riverside, earning bachelor's degrees in history, anthropology, and geology, and an M.S. in geology.

In a previous incarnation, Susan did fieldwork throughout the western U.S. as a geologist with the Geologic and Conservation Divisions of the USGS, with the Minerals Management Service, and with the BLM. She authored and co-authored geologic maps and articles on the phosphate resources of southeastern Idaho and northeastern Nevada, on the geology of Arizona, and on mammalian fossils, biostratigraphy, and regional geology of the Mojave Desert. Upon leaving the USGS, she taught introductory geology and oceanography at the College of San Mateo, California. She is currently a research affiliate of the University of Arizona's Southwest Institute for Research on Women and teaches the occasional writing workshop at Pima Community College.

Miller's first non-scientific book was *A Sweet, Separate Intimacy: Women Writers of the American Frontier, 1800-1922*, which showcased the work of women writers who published during the settlement years of the American frontier. She contributed chapters to *The Southwest Inside Out: an Illustrated Guide to the Land and its History*. Her novels, *Death Assemblage*, *Detachment Fault*, *Quarry*, *Hoodoo*, and *Fracture*, published by Texas Tech University Press, feature a female field geologist and college professor who, like the author, lives and works in the West. Her poems have been published in regional journals and anthologies, including *What Wildness Is This: Women Write about the Southwest*, and *ROUNDUP! Western Writers of America Present Great Stories of the West from Today's Leading Western Writers*.

Miller's novels have been recognized by the WILLA Awards, the New Mexico Book Awards, the Southwest Books of the Year, *ForeWord Magazine* Books of the Year, and the Mountains and Plains Book Award.

December Member Spotlight—Spencer R. Titley

Spencer R. Titley (Spence) was born in Denver, Colorado in 1928. He received a degree in Geological Engineering (Mining Geology) in 1951 from the Colorado School of Mines and a Ph.D. in Geology with a minor in Chemistry from the University of Arizona in 1958.

Spence's varied career has included time in industry, governmental agencies, and academia (not to mention riding the range as a cowboy—more on that later). He worked at New Jersey Zinc in Gilman, Colorado in 1951 before getting called into the Army along with his entire Colorado School of Mines graduating class. He was a combat engineer in Korea from 1952 to 1953, serving as a platoon leader and then company commander of an engineer company that was situated near Chorwon. His company back-stopped and supported division engineers of various infantry divisions that moved in and out of that area. Back in the U.S., Spence returned to Gilman as a geologist and mine geologist before going to University of Arizona for his graduate studies. After receiving his Ph.D. he worked as an exploration geologist for New Jersey Zinc in Arizona and New Mexico from 1958 to 1960. In 1960, he began a distinguished career at the University of Arizona where he continues to maintain an active teaching schedule. He has mentored many students who have had their own successful careers. And somehow, along the way, Spence managed to work part time for the USGS Branch of Astrogeology from 1963 to 1972.

Spence was AGS President in 1974-75 and has served on the Executive Committee in various capacities through the years. He served as co-editor of AGS Digest 22 in 2008 with Jon Spencer. In 2006, Spence became an Honorary Life Member of AGS.

Spence and his wife, Helen, raised three children and will celebrate their 60th wedding anniversary in 2011.

How did you first become interested in geology? I don't recall, exactly, but I worked as a miner in summers '47, '48, and '49 to put myself through school. I enjoyed the work and environment and started looking forward to a degree in Mining Engineering. But I came to realize that knowledge of geology and the rocks was more challenging to the curse of my curiosity than was concern about what strength of dynamite to use in mining different rocks.

What was your first job? The young cowhands had all gone to war and during the summers, and partial falls of 1942-1945, I worked on a ranch near Eagle, Colorado. The work was hard, sunup to sundown, irrigating, mowing, and stacking hay, harvesting grain, digging potatoes, tending sheep on the ranch and working cattle by horseback in the high parts of the Sawatch Range. It was a dollar a day and keep, going wages in those times. I learned what hard work was and I learned about animals and the land. Many events of those times remain unforgettable.

What was your first job as a geologist? I was hired out of school in 1951 by the New Jersey Zinc Company as an assistant geologist at Gilman, Colorado. Their program for new geologists was, first, an internship with senior geologists. I was extremely fortunate to have been seconded to Norman Snively who taught me how to see rocks, not only look at them. His (and my) role was mapping the geology in square set stopes (there were thirty of them) twice a week. He always had time to take me to some strange exposure and have me discuss it with him. My education had been in the veins of central Colorado and I had no sense whatsoever about the nature of the massive ores of the Gilman type. He was patient with me beyond normal expectations, and I have benefited my entire career from those few months of work under his tutelage.



Spencer R. Titley at San Manuel on the Kalamazoo Project, 1999



Spence and Helen, 2009

Member Spotlight—Spencer R. Titley (continued from page 2)

What is your most memorable field experience? Although it doesn't come under the category of strict geology, the experience remains etched in my memory and deals with time spent on the ranch. We moved cattle into the high ranges and worked them during the summer and fall months. One of our stops was at a ghost mining camp, Fulford, where a leaser often had a fire and pot of coffee going. On the day of interest we had stopped for a brief time and I picked up a rock, for no reason that I remember, and asked the leaser about it. He replied, as I best recall, "Spince, that's pawfree; where you find the ore, you always find the pawfree, but where you find the pawfree, you don't always find the ore." I had no idea at all what he was talking about – but the kid on the black horse received his first lecture in geology. It took decades for it to get meaning.

What do you consider your greatest professional achievement? My professional interests narrowed through the years to the nature and origin of metal provinces. Field work in the Andes, in island arcs, in the Basin and Range Province and in the ores of mid-continent, together with mineral-chemical work and various isotope studies have identified and constrained many relevant aspects of the problem, solutions to which contribute to exploration criteria and ore search.

How about your greatest achievement EVER? Through 50 years, I have taught more than 2800 students about the geology of ore deposits and have mentored and graduated 131 post graduate students with M.S. or Ph.D degrees. It has never been a job, it has been a way of life.

What are your hobbies? Helen and I love dogs, and we have been active for many years in the Old Pueblo Dog Training Club, which has been in existence since 1948. We have worked with obedience classes at most levels for dogs of all sizes. We also work with "Handi Dogs", a group that works with people with different disabilities, training them to train their dogs to do different things of assistance to the individual, i.e. picking up things, notifying if the telephone rings and that sort of stuff. My job through the years has been in evaluation of training progress. I also enjoy trout fishing when I can, reading, classical and country-western music. And rocks of all kinds.

Water, Whiskey or Wine? Depends on where and with whom. On my own, probably wine or water.

Thanks, Spence!

Do you know an AGS member who would be an interesting subject for the Member Spotlight column? Please contact Alison Jones at ajones@clearcreekassociates.com with your suggestion.

2010 Courtright Scholarship Recipient

The recipient of the 2010 J. Harold Courtright Scholarship is **Bryan J. MacFarlane**, a graduate student in the Department of Geological Sciences, Arizona State University. The Courtright Scholarship is awarded each year by the Arizona Geological Society to a deserving graduate student in geology. The study proposed by this year's recipient embraces Harold Courtright's passion for field-oriented economic geology in the North and South American Cordillera.

J. Harold Courtright, former chief geologist with ASARCO, had a life-long interest in mining and geology and during his career worked in the Cordillera in North and South America. As an exploration geologist who combined field mapping with other techniques, he was instrumental in the discovery and early development of well-known porphyry copper deposits at Silver Bell, Arizona and Toquepala, Peru. Following Harold's death in 1986, the Arizona Geological Society established the Courtright Scholarship to encourage and support geologic field studies conducted in graduate programs at the State's three universities.

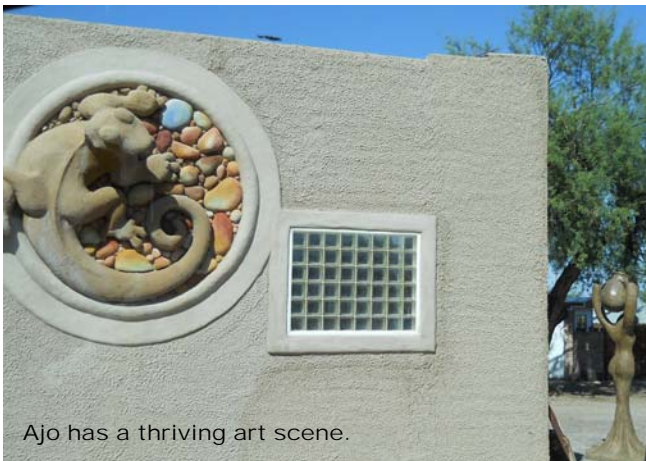
Bryan is studying structural control of gold mineralization in Sonora, Mexico and will use the \$2,000 Courtright award for preparing petrographic thin sections and running U-Pb zircon ages at the Arizona LaserChron Center in the Department of Geosciences at the University of Arizona. His study, "Structural Geology, Age Dating, and Petrography of the Santa Gertrudis Mining District, Sonora, Mexico" will be submitted in partial fulfillment for a M.S. degree in Geological Sciences at Arizona State University.

Some more photos from the Ajo Field Trip in October. . .

The pit at the New Cornelia Mine is a spectacular sight.



An enthusiastic group of geologists in Ajo.



Ajo has a thriving art scene.

Does anyone know why there is a "Snow Dog" street in Ajo?



Announcements

Thanks to AGS member **Kevin Horstman** for a recent donation to the **J. Harold Courtright Scholarship Fund**. Don't forget this educational scholarship fund as the year comes to a close. Your tax-deductible donations help defray field-based research by graduate students at the three Arizona universities. For a list of previous recipients, refer to page 24 in your 2010 member directory or visit the Courtright Scholarship link on the AGS website. You can send a check to AGS or add a contribution in with your 2011 dues renewal. A receipt will be promptly issued by the AGS Treasurer.

Welcome New Members!!

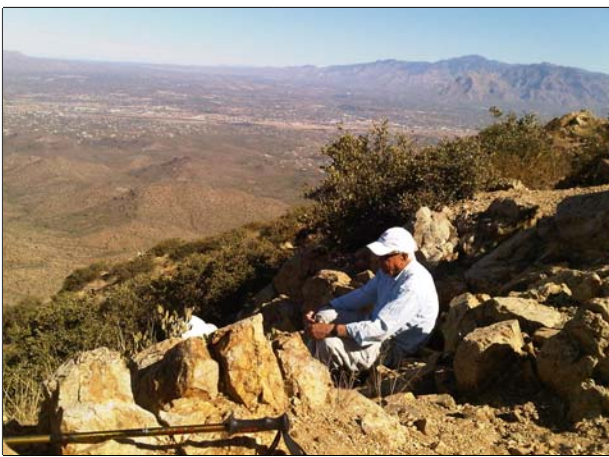
- Stephanie Anderson, Consulting Geologist, ASARCO
- Nicholas Dize, Exploration Geologist, ASARCO - Ray
- Anthony Henager, Geologist, Resolution Copper Company
- Dr. Ihor Kunasz, Tucson
- Jim Lombard, Senior Geologist, ASARCO
- Jon Matti, U.S. Geological Survey
- Wolfram Schuh, Vice President -Exploration, Freeport McMoRan

AGS Mt. Wasson Hike

Dawn Garcia reports:

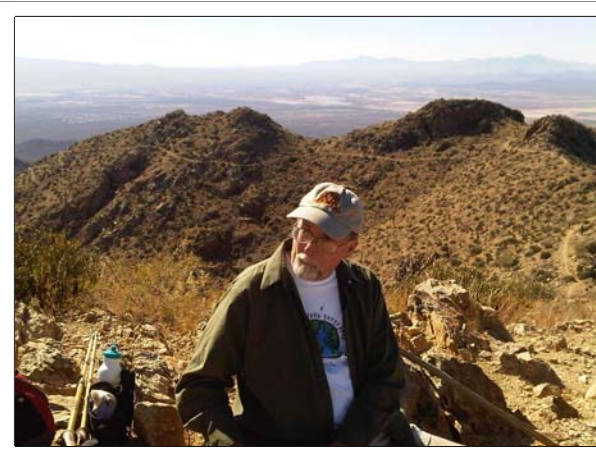
Our group of five AGS geologists followed a Cub Scout pack up to the top of Mt. Wasson on November 13, 2010. Our fingers are crossed that there were some junior geologists in the making in that group. We were impressed by their energy and enthusiasm. It was gorgeous weather for hiking, and certainly the right time of the year for this trail, which is in full sun. The view from the top of the peak is 360 degrees, with lots of interesting geologic and anthropogenic features visible such as Avra Valley recharge basins, Silverbell Mine, CAP canal, and Kitt Peak. There were several fenced off mine openings along the trail, plus remnants of foundations and buildings associated with the Gould Mine. This was a small underground Cu-Ag-Pb mine that operated intermittently from 1907 to 1912 and in 1940.

(L to R): Hal Bohmer, Frank Royse, Terry Britt, Dawn Garcia, Mike Block.



Above: Frank Royse enjoying the view.

Below: Mike Block takes a breather.



Above: Dawn's self portrait from the top.

