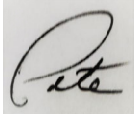
USGS RETIREES

NEWSLETTER No. 186
February 2020

An organization of retirees of the U.S. Geological Survey, whose purpose is to keep its members in touch with each other and their former agency.

PRESIDENT'S MESSAGE

I hope you and your family are enjoying the New Year and the enjoyment will continue throughout the year with good health. At the start of the year, I became your next President and humbly appreciate your confidence in electing me. I do welcome the challenge and pledge to give my best effort. Your input in the direction of the Organization is important. Please feel free to provide your concerns and suggestion either by email to:petejoycea@frontiernet.net; or telephone: (931) 248-7480. FYI, the election results included the approval of adopting the changes in our constitution and bylaws that were given in our last (November) Newsletter. **First:** I want to thank my predecessor, Jim Stark, for his leadership, vision, and accomplishments during the past 2 years. Jim has given our Organization a spark to motivate us in addressing the critical issue of maintaining the viability of our Organization. His energy is an inspiration to me to address ongoing and developing issues with the same vigor. ***Second:*** We are fortunate to have a superb team of officers that form our Board of Management (Board). Reelected officers are Treasurer, Cathy Hill; Secretary, Kate Flynn; Regional Directors, Norm Grannemann (Northeast), Ed Martin (Southeast), and Ken Lindskov (Central); and Newsletter Editor, Jeff Stoner. Newly elected Officers, besides myself are Phil Turnipseed, Vice President, and Herb Freiberger, Archivist. Phil with an impressive and diversified career with USGS will be a true asset to the leadership of the Organization. Being a relatively new retiree (2015) he can be especially effective in our viability efforts by personally knowing many prospective retirees from all Mission Areas of USGS. As president I am confident that Phil can carry out the duties of the President, should that be needed. Herb is an outstanding choice for Archivist. During the past year he has been working with former Archivist, Dick Engberg, and is now familiar with the amount and complexity of material and priorities. Since his retirement in 2002, Herb has been an active, dedicated, and capable volunteer for us. He is a past President (2010-2012), current State Representative for Maryland (several years), a continual leader on initiatives of the Organization's Board of Management (Board) and always one of the first to register for our Biennial Reunions. With the conclusion of the election, I am pleased to announce that Alex (Sandy) Williamson unanimously was appointed by the Board to replace me as Western Regional Representative. Sandy will provide the Board additional energy, enthusiasm, and creative ideas.**Third:** We thank and recognize our former Vice President, Al Condes, and Archivist, Dick Engberg, for their contributions and competent and dedicated service. Al, unprecedently, served as VP for 8 years. Dick has been our Archivist for the last 6 years and a past President (2008-2009). In addition to making significant progress on archive materials, he has been an active member of the Board, assisting on initiatives and providing relative and historical information. Dick has stated that he will remain active in the Organization and is on call for being a resource. We greatly appreciate and look forward to his further input and humor. **Fourth:** My top priority for the organization is to maintain our viability. Central to that priority is the enhancement of communication between us and USGS offices. The establishment of Affiliate Liaison Members in each Science Center and major State Office was a critical action. To date, we have 12 Liaison Members. We need to continue recruitment and retention with the goal of having a Liaison Member in every State. These volunteers through networking with their State Representative provide the link for our membership to be knowledgeable of happenings in USGS at the local level and to promote our activities to current USGS personnel. Another effort in viability is to increase our membership of retirees not classified as hydrologist or other scientist positions. We need greater diversity with more retired technicians, reports staff, clerks, administrative personnel, and IT personnel. We worked together with a feeling of being in a family and our Retirees Organization offers retirees the opportunity to belong to a large extended family with members having similar employment backgrounds and experiences. Our Newsletter is our major source of communication among our membership. Our Editor, Jeff Stoner, Regional Editors (Debbie McLean, NR, John Clark, SR, Jim Bennett, CR, and John Klein, WR) and Layout Editor, Merilee Bennett, are constantly evaluating and implementing new ideas for enhancing the Newsletter contents. One stable and vitally important section is "News of Retirees" We urge all of you to submit articles. We want to hear from you. **Fifth and Last:** Mark **March 18-20, 2021** on your calendar for attending the next Reunion to be held in Tucson, AZ. The Local Arrangement Committee, led by Mark Anderson, is making progress on planning a great event (see page 3).



OUTGOIING PRESIDENT'S MESSAGE

Dear Fellow USGS Retirees,

It has been an honor to serve as your president for the past two years. It has gone by quickly. "USGS Retirees" is a great organization that attempts to celebrate contributions you all have made to scientific advancements that continue to serve our Nation. I hope that you all are proud of your contributions. Over the past two years we have accomplished several things. We have hosted a successful reunion and have developed a strategic plan. That plan places emphasis on our scholarship program and on maintaining the viability of the organization. The officers will continue to work at recruiting active employees, to increase communication with USGS offices, and to reach out to newly retried employees.

I want to express my thanks to our officers and to all of our volunteers. They are a talented group and it has been my good fortune to have worked with each of them. I also want to thank Mark Anderson and Pete Anttila for coordinating our next reunion. Mark and Pete have a good committee to help them with this big task. I also want to express my gratitude to Al Condes (Vice President) and to Dick Engberg (Archivist), who are stepping down from serving the organization after many years of service.

That's a wrap for me! It really has been a good experience for me to re-connect with familiar friends and to meet others. Stay well, and warm, this winter. Most or you are in warmer place than me! I hope to talk with you, in Tucson, in about a year.

Respectively,
Jim Stark

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Skylar Smith, Hydrologic Technician
Central Midwest Water Science Center

The scholarship I received from the USGS Retirees meant a great deal to me. The scholarship money paid for university classes in math and physics, and the vote of confidence from the Retirees really assured me that my goal was achievable. The scholarship certainly went a long way towards my completion of the necessary coursework to move from Hydrologic Technician to Hydrologist. I still have the scholarship certificate hanging in my office. Because of your support, I am now qualified to apply for a position as a hydrologist.

As far as advancing my career, things have been slow going. I am still a technician in our networks section, focusing on stream gaging. My center, which was the Illinois Water Science Center (WSC), then the Illinois Iowa WSC, and now the Central Midwest WSC, has been going through a lot of changes. There have been changes in our managerial organization which have altered my planned path to become a hydrologist. However, I am still planning to apply for a hydrologist position when an appropriate one becomes available. If that opportunity comes along, I am very happy that I can put the scholarship on my resume.

Thank you for your financial and moral support.
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ANNUAL UPDATE REQUEST -- RETIREES' TELEPHONE DIRECTORY
REQUESTS SHOULD BE RECEIVED BY APRIL 17, 2020

The Retirees' organization publishes an updated Members' Directory every May. Please take a minute to review the 2019 Directory; if your information or that of others you may be aware of require change, please let us know. Send updated information to WRD Retirees, P.O. Box 280, Herndon, VA 20172-0280 or email it to wrdretirees2014@gmail.com. The directory is distributed in print or electronic format, if you want a format different from what you received last year, please let us know.

2021 – NEXT USGS RETIREES' REUNION – HOLD THE DATE

Ready for a 2021 Winter Break? Join your fellow retirees in the Sonoran Desert hosted by the Western Region.

Where: Tucson, Arizona
When: March 18-20, 2021

Facility: University Marriott (on U of A campus); Walking distance to USGS Center (See web site for a few photos) https://www.marriott.com/hotels/hotel-photos/tusmp-tucson-marriott-university-park/
Room rate: $135 per night; your choice of King bed or 2 queens; rate honored 3 days before and after the event for those who wish to extend your stay.

Potential Activities: In addition to icebreaker events and dinners together, the organizing committee is considering a number of offerings 1) Sonoran Desert exploration, 2) Tucson Water AVRA recharge facilities, 3) Seminars by current and former USGS scientists and technicians; 4) presentation on U of A—USGS collaboration on first academic hydrology program in US (do you know about the napkin?); others to be considered and announced in more detail in subsequent Retirees' Newsletters. *If you want to wander on your own or extend your stay, Tucson offers a wide variety of activities, and March is the perfect time to enjoy them. A few examples: take in a major league ball game during spring training, visit the Arizona-Sonora Desert Museum, Kartchner Caverns, the Pima Air Museum, the Tucson Botanical Gardens, or one of the many museums. Tucson has become a foodie mecca and is home to world-class restaurants – everything from food trucks featuring Sonoran hot dogs to 4-star elegant dining.)*

Weather: Average high temperature mid-March is 75 F. Precipitation unlikely.

Watch for more details in subsequent Newsletters. Contact Local Arrangements Committee Chair, Mark Anderson, for more information as needed: markandersonwater@gmail.com

NEWS OF RETIREES

Bill Alley writes: I continue to work part-time for the National Ground Water Association (haven't got them to make groundwater one word in their title) and enjoy continuing interactions with USGS folks through NGWA. Rosemarie and I also continue writing environmental science books for the general public (see alleyandalley.com). We tackled a fun topic in our third book just coming out: "The War on the EPA: America's Endangered Environmental Protections" (Rowman & Littlefield). It's available through Amazon and others.

Merilee Bennett writes: I would like to express my appreciation to Jim Stark the outgoing President for all his support in moving the retirees' organization forward. He has put in a lot of time working with not only the board members but taking the extra step of communicating with the state representatives and WSC staff.

Denny Cline writes: The last year has been rough. My wife Dorothy had to go into an assisted living facility the latter part of 2018. I moved in with her. She developed dementia in December and had to move in January 2019 into a mental health facility and I moved back into our house. She got worse and died in July 2019. I am having to learn a new way of life. I am making progress on that and have been going to the Puyallup WA Senior Activities Center among some other things.

Dick Engberg writes: As of tomorrow (January 1, 2020), I'm no longer an officer, but speaking as a 20-year member of WRD Retirees, I have to say that Jim was one of the best Presidents we had during that time.

Herb Freiberger says, Pat and I are doing well except for those aches and pains that seem to last longer every day and sometimes never go away. I looked back at several issues of the newsletters and found out that I haven't contributed to this section for a year or so. I have several personal things I could write about, but I am going to defer them as I think it is more important to use the time and space to briefly write about an individual who has had a huge positive impact over the last two years on something that is near and dear to all of us--- "The USGS Retirees Association." That individual is **Jim Stark**, our past president since 2018. During that same time period, while I was not an official officer of the organization, I volunteered some time to assist in any way I could; thus I had the opportunity to observe Jim in action, which it turns out was very impressive, to say the least. Jim, who is from Minnesota, brought with him outstanding management and leadership skills that seemed to entice buy-in among all the National, Regional and State-level Officers and Directors of the organization. Perhaps, Jim's greatest talents were his willingness to listen and his personal ability to build consensus among a fairly large group of people. There is no doubt in my mind that the organization is in a better place now than perhaps at any time during the last decade or so and is poised for continual success as we move toward the future. Thanks for a great job, Jim.

Marvin Fretwell shared this article with the Western Region senior staff. Both Pete Anttila and Jeff Stoner Thought all former DOI-USGS employees would appreciate this article. Pretty relevant to those still working. Thank You for Staying': https://medium.com/@kjsween/thank-you-for-staying-f10ec3a3194a?

Sharon & Rick Goss write: Hello fellow retirees. It has been awhile since we have submitted an update to the Newsletter. Since we will soon owe dues, it prompted us to also send some news. As some of you know, we moved from south-western Indiana to Lake Oswego, OR in June 2019. Sharon took an early retirement and we moved to Indiana in 2001 so we could help care for her family. Sadly, she lost her Mother, two brothers, and then her Dad in late 2017. At that time, our daughter Kyla convinced us that moving to Oregon would be best for all of us. Sharon had already made several trips to visit Kyla and we both attended a WRD Retirees reunion in Portland, so we were on board immediately. It took us a year and several offers, to finally find a new home. Lucky for us, we ended up in the perfect location and love our home. **Rick (Dick) Bow** visited us in Indiana during our last days there and helped us on the trip west with four small dogs, a U-Haul truck and our car. To help us relax after a long couple of years down-sizing and moving, Kyla took us on a day trip towards Mt. Hood with stops at a few wineries. About a month after arriving, **Pat Tucci & Zelda Bailey** stayed with us for a few fun days which of course included a winery visit. The summer months here were wonderful. We were able to spend a lot of time on our deck with no bugs or humidity. Our deck actually became our daily

lunch spot—something unthinkable in Indiana in July and August. Although it is more expensive to live here, Oregon has so much to offer. Sharon and Kyla like to hike and there are so many options. They recently did a long hike in Silver Falls State Park. Cooks Butte City Park with hiking trails is at the edge of our neighborhood and so many more within a short distance. For Rick's Birthday, we took a day trip to the Oregon coast (Depoe Bay) and to Yamhill Valley Vineyards in McMinnville, OR. We have also enjoyed some theatre and music in the short time we have been here: Rick & Kyla saw Wicked; Sharon & Kyla went to a Ray LaMontagne concert; and Sharon & Rick went to a free concert at the local library to hear Andrea Wild & The Bad Wolves (Oregon's only Welsh folk revival band. Songs from Wales, Cornwall, and Scotland.) Our neighbors are very friendly. We attended a "Welcome to the Neighborhood" cookout shortly after our arrival. Oregon also has a variety of birds not seen in the Midwest, so we are enjoying watching for them. Our yard backs up to a forested area, so it is nice and quiet. We have deer visiting the front yard periodically (probably daily, but we don't always see them). We love that the people in this area landscape their yards so there is very little grass and the noisy mowers that accompany lawns. Sharon is attempting to identify all the existing plants in the yard and eventually create a native-plant habitat for birds, bees, and butterflies, etc. Kyla was correct about Oregon being good for us! We are still trying to sell our home in Indiana. It is a large historical Victorian in a very poor county so finding a buyer is difficult. If anyone is interested in buying a B&B let us know! We recently contacted the Oregon USGS Retirees and plan to join them for lunch in December. We enjoy seeing the pictures of other gatherings around the country, especially Indiana, Pennsylvania, Texas, and Colorado where we worked. With family commitments and our move, we have not been able to attend recent reunions, but we are planning to attend the upcoming one in Arizona. Hope to see many of you there.

Cathy Hill writes: Jim (Stark) I'm sorry I missed your last conference call where I'm sure you were showered with many accolades. You really have done a stellar job of herding cats and moving the organization forward. Your calm demeanor and ability to ensure we got things done is exactly what we needed. And obviously the conference calls were a great idea that will be continued. I hope you continue to be active with the Retirees! All the best!

Pete Martin writes: Happy New Year! One of my New Year's resolutions is to pay my debts, so I have sent a check for my late dues. I enjoy reading the newsletters, so I guess I should pay my dues. Since retiring in 2012, I have been following my wife, Leslie, as her work moved her to Seattle, Los Angeles, and San Diego. In 2018, Leslie finally retired, and we moved into, hopefully, our final home in Point Loma, CA. We have been keeping busy watching our grandson, volunteering, and traveling. Last spring, I completed a trip of a lifetime, walking the Camino de Frances, a 500-mile pilgrimage from Saint Jean-Pied-de-Port, France to Santiago, Spain. Hope to see everyone at the reunion in Tucson.

Jim Nicholas writes: Voted on by-laws, and voted on officers, etc... Busy day. Figured I'd add something for the newsletter. A lot of people move south when they retire; places where there's too much water or too little. We recently moved from the Lansing area, where we lived for 27 years, to the north and west, just a few miles from Lake Michigan. We've always lived in pretty old houses that needed a lot of work. Now we live in a new one...in 22 acres of beech and sugar maple...with no yard or flower beds to care for. Oceana County has one stop light, and it isn't really needed. The fall was beautiful as have been the November snows (about 14 inches in 3 events...so far). We love the area and the long-term friends, plus new ones. We are about 10 miles from a family cottage I've been going to since 1955 and my father since 1930. I take care of the place and help with Airbnb rentals. Bonnie is still working full-time, mostly in Grand Rapids, for another year or so. I am still consulting part-time on Great Lakes issues and doing some volunteer work. Thanks to the editor and officers for all you do for WRD Retirees. Looking forward to the next get-together in AZ.

Karen Steele writes: It's been almost a year and I'm still trying to deal with the death of my precious husband, Gary Adair. We celebrated our 13th wedding anniversary on September 24th of 2018 and although we weren't married that long we were inseparable. After years of dealing with the VA on health issues and not getting anywhere, Gary decided to go to our regular doctor. At first, she thought he had pneumonia but when he didn't improve with treatment, she ordered a ctscan September 10th on his lungs which showed cancer. She then ordered a PETscan on the 17th and Gary was diagnosed with metastatic bone cancer. The VA finally decided that something was wrong and turned Gary's treatment over to an oncologist of his choice. Gary ended up in

the hospital in October and stayed almost a month before I bought him home November 12th under the care of hospice. He passed away November 15th surrounded by family. I'm so thankful for my church, family and neighbors who have helped me and continue to do so. I know I'll eventually downsize but for now I'm staying in the home we built. On a lighter note, I went on a mission trip in March to Roatan located off the north coast of Honduras. Our group worked on an orphanage. I'm also back subbing at the church for our office manager. I enjoy the newsletter and appreciate all the hard work that goes into publishing it.

Jerry Pascale writes: To all you hard working people doing the great volunteer work that you do to keep the Newsletter essential, my sincere appreciation.

Bill Roddy asks: Ever wonder how a "hundred-year flood is determined? The EOS tribute to Nick Matalas says: "In 1976, as senior research scientist in the Office of the Chief Hydrologist, Nick was allowed to pursue new research directions. In addressing the problem of deciding on appropriate distributions for regional flood characterization, Nick developed, along with J. M. Landwehr and J. R. Wallis, the parameter estimation method of probability weighted moments, a method now widely used in hydrology and many other fields. Nick, along with colleagues J. M. Landwehr and M. G. Wolman, conducted a 1982 special study for the National Academy of Sciences that probed the scientific basis of water resources management. This study provided the first explicit statement in the literature that human activity is inherently part of the hydrologic cycle and must be considered in making geophysical predictions. This concept is fundamental to the current perception of environmental and climatic variation." https://eos.org/articles/nicholas-constantinos-matalas-1930-2019

Susan Russell ***(widow of Gary M Russell)*** writes: Thank you for your timely newsletters. Although I not sure what my late husband paid had paid for your newsletter in the past, hopefully the enclosed check will cover your expenses. Thank you for your support during these trying years. ***Please discontinue the USGS Retirees' Newsletter to this address.*** Regards

Charles Tibbals (1997) -- Even if you haven't been wondering what I've been doing for the past 22 years, here it is anyway: I retired in December 1997, as Subdistrict Chief of the Orlando/Altamonte Springs office, had heart triple bypass surgery in August 1998, an emergency appendectomy a year later, and some more medical stuff. I decided to simplify my life by selling my 2 small citrus groves before freezes and diseases had another crack at them. Got rid of my rental properties also – tenants and toilets, you see. However, I did some consulting work for the St. Johns River Water Management District and even wrote a SW/GW report for their Special Publication Series. For about 10 years, I hunted pheasant in South Dakota. Nice place, even nicer folks. I would drive out over a period of 3 or so days, and see many interesting and oddball things (www.roadsideamerica.com). Sometimes I went on to Yellowstone by way of Cody, WY, where I have some TV series guns on loan to the Buffalo Bill Firearms Museum -- Bonanza, Gunsmoke, Have Gun Will Travel, Bat Masterson, The Rebel, and Annie Oakley. Now, there are always 2 or more of each star's firearm on any set, in case one malfunctions. However, I have provenance for mine that validates their use by stars on the shows. Prior to retirement, I made numerous dove- and duck-hunting trips to Central and South America – Honduras (2), Costa Rico (2), Colombia (1), and Argentina (5). Not much sight-seeing, though. Dove choose the scruffiest habitat in such otherwise beautiful countries. In 1999, Gail and I traveled to Nova Scotia and found that Prince Edward Island is a vastly overrated and boring flat, featureless, potato field whereas mostly overlooked causeway-connected Cape Breton Island is a gem of a place. Alexander Graham Bell thought the same – that's where he lived. Cape Breton features an inland sea (Bras D'Or), Cabot Trail, Alexander Graham Bell Museum in Baddeck, Fort Louisbourg, and an underground coal mine museum and tour in Glace Bay. We even saw some moose in the hillier, rockier areas. Beautiful place. In 2003, we flew to Anchorage, AK, and rented a motorhome – a very practical means of touring Alaska. Motels are few and far between, and the cruise lines have them booked solid. I liked the Alaska experience so much that, in 2004, I flew to Seattle and rented (one-way) a motor home and drove solo (just me and my GPS) to and through Alaska. British Columbia is huge. I lost cellphone service around Prince George, BC, and lost XM satellite radio service near Whitehorse, YT. I enjoyed that 2004 trip, so I did it again in 2008. Again, solo. In both cases, I took the very lonely Cassiar Hwy (#37) through BC. It's rather remote – like driving from Orlando to Atlanta and encountering only 3 gas stations and 1 (habitable) RV Park. On all 3 trips, I went to Valdez, and took the Stan Stevens day cruise on Prince William Sound. I saw lots of eagles, sea otters, walruses, whales, glaciers, but

no trace of the Exxon Valdez oil spill of March 1989. The actual cruise route may have been chosen to avoid seeing any damaged areas. Twice I put the motorhome on a ferry from Valdez to Whittier. Whittier has no dedicated roads in or out, so vehicles and trains take turns using a railroad tunnel. With the RV's tires lurching along the rails, the tunnel seemed pretty narrow for a wide motorhome. Those are the longest 2.5 miles I have ever driven. Then I was dumb enough to do it yet a second time. Since the Alaska excursions, I have, for the past 10 years, been putting myself and my SUV on AMTRAK's Auto Train from Sanford, FL, to Lorton, VA. Then I just meander about on back roads, up through PA, NY (to see Ray Turner, the "eel man" of TV's Filthy Jobs), Ohio's Amish country, gradually working my way south via Knockemstiff, OH, to Hiawassee, GA, where always I rent the same cabin for 6 weeks in early January to late February. I try to see oddball things along the way. It sure is cheap to rent a winter cabin – I'm usually the only fool in camp during that time of year. Audie Bradley (USGS/WRD-ret) lives in Hiawassee, so I usually go by and visit with him and his gracious wife, Frances.

Chester Thomas writes: Season's Greetings! I hope you've had a good year and that the new one will be wonderful. You do a great job with the newsletter. I look forward to each issue. It has been a difficult and uneasy year for me with the passing of my wife Marion and December 28, 2018 and my illness this year. Keep up the good work and keep the USGS alive. Best wishes to all.

Dues Received since last November's Newsletter:
Lois J. Douglas
Norm Grannemann
John Guswa
Pete Martin
Jim Nicholas
Susan Russell
Tim Steele
Dorlores Stoner
Roger White

Remembrance of Richard F. Hadley
By Marshall Moss

In 1995, I had the pleasure of serving with Dick Hadley and Ivan Johnson, both USGS-WRD retirees, on the Organizing Committee of the 21st General Assembly of the International Union of Geodesy and Geophysics that was held in Boulder, Colorado. The final meeting of the committee was held in April 1995 in Washington, DC at the headquarters of the American Geophysical Union, an organization with which I had been connected for many years. After two days and many long hours of intra-Union politicking and decision making, the committee held a celebratory dinner on the last evening. During the afternoon coffee break of that last day, I was ushered aside by Dick, who asked me if I knew of a quiet restaurant nearby where we could have a discussion over dinner, thereby skipping the last dinner of the committee. I agreed and made reservations for the two of us at a nearby restaurant in Adams Morgan.

I had known Dick for a couple of decades and had always found him to be a great companion, but I still wondered what might make him want to skip out on the free wine and good food that typically came as a reward for serving on such committees.

At around 7pm, we met in the lobby of our hotel and walked the few blocks to the restaurant. Dick seemed normal enough, but perhaps a bit quieter than usual. In the restaurant, we ordered aperitifs and settled in at our quiet table in the back of the restaurant. After a few sips, Dick offered an apology for asking me to miss the committee banquet and stated that this was a very special date in his life that could not spent in joyous celebration. He said that he had fought in World War II from D-Day through the end of the war in Germany, but on this date, he had experienced the worst day of the war. His unit, the US Army 69th Infantry Division, had liberated its first concentration camp exactly fifty years ago. Over a leisurely dinner, Dick gave me a sketch of ten months of hell.

In 2005, I happened upon a news item that mentioned the end of fighting in Europe in 1945, and it brought to mind my evening with Dick two decades earlier. It had haunted me occasionally over the years, but I had never dug into the information available to fill in the gaps in my fading memory. Surfing the web led me to the Newsletter of Fighting 69th Infantry Division Association, Inc., Fall 1993 issue, which listed Richard Hadley as a Member of the Board of Directors representing the 272nd Infantry Regiment. Further surfing led me to the Thekla-Leipzig concentration camp that was liberated by the Fighting 69th on 18 April 1945. Thekla-Leipzig was a sub-camp of the infamous Buchenwald, and it held approximately 1,400 prisoners, who slaved in support of the ERLA Ironworks for the Nazi war effort. There are some rather graphic descriptions on the web of what the 69th encountered at Thekla for those with the stomach to read them. Suffice it to say, that I now understand to a minor degree some of what Dick felt on that night.

The Fighting 69th only entered the war in February 1945, so Dick must have been attached to other units prior to being integrated into the 69th. I have been unable to find anyone who knows the details of Dick's early participation in WWII. That is the reason that this note was not submitted years ago. With the 25th anniversary of that night in DC approaching soon, I had the impetus to get this on record. Any additional information pertaining to Dick's wartime experiences would be greatly appreciated.

MEETINGS AND GATHERINGS

USGS RETIREES – CA

August 2019 Meeting of Southern California Retirees and Future Retirees

L to R: Roy Schroeder, Laurel Rogers, John Izbicki, Chris Stamos, Larry Schneider, Randy Hanson, Steve Predmore, Peter Martin, Claudia Faunt, Julia Huff, Charlie Kaehler, Kaycee Moreland, Joe Moreland

December 2019 Holiday Luncheon of Southern California Retirees and Friends

Counterclockwise around table: Chris McConaughy, John Izbicki, Kaycee Moreland, Gib Schroeder, Joe Moreland, Roy Schroeder, Peter Martin, Ron Fay John Vandenberg, Patricia Vandenberg

USGS RETIREES - GA
Annual Holiday Party
South Atlantic Water Science Center

Left to Right: Howard Perlman, John Clarke, Bonnie Turcott, Bob Pierce, Eve Kuniansky, Helaine Markewich, Brian Hughes, Michael Peck, Keith McFadden.

USGS RETIREES – ID
Boise, ID

First Row Seated (LtoR): Kay Lehmann, Dorene MacCoy, Steve Lipscomb, Steve Frenzel, Joe and Jean Spinazola.
Second Row Standing LtoR): Mary and Bob Luscombe, Gene and Bill Harenburg, Bruce Parks, Mark Hardy, Annette Campbell, Frank Youngkin, Alvin Sablan, Muffy and Gerald Lindholm, Dick Whitehead, Luther Kjelstrom, and Taylor Dudunake (Scholarship recipient)

USGS RETIREES – FALL LUNCHEON
RALEIGH, N.C. (Retirees and Spouses)
October 17, 2019

Front Row (LtoR): Charles Daniel, Myra Daniel, Charlotte Lloyd, Carol Winner, Nancy Garrett, Gary Garrett.
Second Row (LtoR): Doug Harned, Tim Spruill, Jeanne Robbins, Bruce Lloyd, Mike Winner, Nelson Williams

MD-DE-DC--USGS Retirees, Spouses and Guests, Luncheon
Carson's Creek, Riverside-Restaurant
Baltimore, MD
November 14, 2019

First Row (LtoR): Stewart Fisher (Grandson of Roselyn and Gary Fisher), Gary Fisher, Maryann Blough, Shirley Hartsoe.
Second Row (LtoR): Roselyn Fisher, Nancy Pentz, Steve Curtin, Theresa Rose, Bob Shedlock, Wendy McPherson, Dan Phelan
Third Row (LtoR): Helen Mann (Ries), Pat Freiberger, Jaye James, Jim Dine, Kernell Ries, Jim Gerhart
Fourth Row (LtoR): Bob Pentz, Herb Freiberger, Bob James, Rene DeLisle

NWQL RETIREES' LUNCHEON
Heaven's Dragon
Arvada, CO
January 6, 2020

Left to Right: Allison Brigham, Merilee Bennett, Dave Erdmann, Gladys Erdmann, Ann Mullins, Jeff Pritt, Donna Damrau, Paula Blakey, Jim Blakey, empty chair is Jim Bennett who took the picture.

RESTON-HERNDON RETIREES' LUNCHEON
January 6, 2020

Dave Russ gave a talk on *The Challenge of Chinese Science and Technology*

WRD RETRIEES' SCHOLARSHIP PROGRAM
Cathy Hill and Herb Freiberger

Background

Hydrologic Technicians enjoy a well-deserved reputation of delivering high-quality data products that meet local, state, and National water needs. Praise for these employees comes from groups internal and external to the USGS. These folks are often referred to as the "backbone" of the water program.

In 2006 the WRD Retirees created a scholarship program for Hydrologic Technicians to help students nationally to complete 2-year hydrologic technician programs at some colleges.

The 2006 – 2016 scholarship awardees were career interns. These are students that can be converted to full-time non-competitively. No awards were given in 2013 and in 2017.

Scholarship Analyses, 2006 - 2016

Twenty-one scholarships were awarded to Interns for a total of $53,000. Scholarship amounts vary each award period and are based on the number of qualifying candidates, the rankings of the candidates by the Retiree Regional Representatives and then the National Board Members, and available funds. As of 2016, 9 students are now full-time employees with 8 being Hydrologic Technicians and 1 being a Hydrologist. That is a 43 % success rate. In terms of funds spent, 48 % were spent on employees who are now permanent and 52 % were spent on students who subsequently left the USGS. What we have been told is no surprise: once these students graduate, they can get much better paying jobs in the private sector. However, we are still adding to the pool of hydrologic science professionals whether they continue working for USGS or not.

Following the analysis of this program, it was noted there are two lingering problems: 1) In the past, the retirees group treasury has always given a tuition check made out personally to each awardee, with no actual knowledge of how they used the funds; and, 2) the retiree's organization lacked any method with which to consistently follow-up with the awardee on the success or failure of the schooling.

Recent Changes

Several decisions were made following a presentation of this information at the 2018 Retirees' Reunion:

1. Applicants are asked to send their documents to their respective Retiree Regional Rep, based on the 4 Regions of 2006. The Regional Reps in turn put a panel of at least 3 retirees in place to review the applications. The top 2 applications from each region were forwarded to a Retiree Ranking Board put together at the headquarters level. Regional Reps were also asked to forward applications that requested funds for 1 or 2 courses.

2. The retiree's organization was recently informed by the USGS Human Resources Group, that we may pay awardee tuition bills directly to the college. We began doing so with the 2019 awardees.

3. A mentoring program was put in place to provide continued support and encouragement to each awardee. This should help us resolve any problems as they occur and give the awardee a sounding board should they need one. Currently the Retiree Regional Representative contacts the appropriate Retiree State Representative to set up the mentoring system (in consultation with the Center Director) when there is a new awardee in their Science Center. Ideally the Retiree State Representative will report to the Retiree Board at least twice a year.

We have a lot to be to be proud of! The WRD Retirees' Scholarship continues to be strong and is one of the flagships of the WRD Retirees.

RETIREMENTS

Steve Anthony, Director of the Pacific Islands Water Science Center, retired on December 31, 2019 after more than 34 years of USGS service. Steve began his career with the USGS in 1985 in the Hawaii District while a graduate student at the University of Hawaii at Manoa. Upon graduation in 1987 with a Masters' degree in Geology and Geophysics, Steve continued to work for the USGS as a hydrologist with a focus on groundwater-resource assessments of remote atoll islands in the Republic of the Marshall Islands and the Federated States of Micronesia. Steve completed pioneering studies in the exotic-sounding islands of Pingelap, Yap, Mokil, Lenger and Sapwauhfik in Micronesia, and Majuro Atoll in the Marshall Islands and authored numerous publications on atoll hydrogeology and water quality. From 1996 to 1999, Steve served as Project Chief of the NAWQA study of the Island of Oahu, where he led a team of scientists evaluating the water quality of Hawaii's most populous island. In 1999, Steve became the Associate Director of the Pacific Islands Water Science Center and in 2009, Steve became the Center Director. Through his vision, excellent communication skills, and deep understanding of the science needs of Pacific Island water managers, Steve built long-term partnerships that helped expand the Center's program in Hawaii and other Pacific Islands, diversify its funding sources, and increase its strength and vibrancy. In retirement, Steve plans to trade the warm sunny beaches of Hawaii for the powdery ski-slopes of Idaho. Steve's retirement party will be held at the Natsunoya Tea House in Honolulu on February 21, 2020.

Robin Brightbill, retired on November 22, 2019 after working over 30 years with the U.S. Geological Survey (USGS), in the Pennsylvania Water Science Center Surface Water and Ecology project section. Robin began her career with the USGS in August 1988 as a Hydrologic Technician working in the Pennsylvania Water Science Center (PA WSC) sediment laboratory. In November 1993, she was reassigned and became part of the Lower Susquehanna National Water Quality Assessment (NAWQA) project team. She became proficient with complex NAWQA protocols for sampling and analyzing aquatic biological data, including computing metrics and statistics for biological datasets. Upon completion of a Master of Science degree in Biology and commensurate with her growing experience, Robin was converted from a Hydrologic Technician to a Biologist in June of 1998. She played a key role in leading macroinvertebrate and ecological studies in the Pennsylvania Water Science Center and in 2009, took over as the lead biologist for the Potomac River Basin NAWQA, a position that she maintained for the past 10 years. In this role, Robin led field teams made up of Pennsylvania and West Virginia USGS staff in collecting ecological data (habitat, macroinvertebrates, fish, and algae) at 5 sites annually. Robin also participated on teams with other USGS biologists across the nation in ecological data collection for three NAWQA regional stream-quality assessments (Midwest, Pacific Northwest, and Northeast). In addition, Robin served as a team member on the EPA Region III and Delaware River Basin Commission nutrient groups. Robin will be missed by her friends and colleagues who all wish her well in her retirement. She plans to spend more time with her family and four-legged friends and in January will begin part-time work training dogs for PETCO.

Lonna Frans-Bachmann retired on January 3, 2020 after completing nearly 28 years with the USGS Washington Water Science Center. Lonna began her career in 1992 as a Hydrologic Aid and quickly advanced to Hydrologic Technician and while working on her Earth Sciences degree. After graduation in 1995, she was hired as a Hydrologist to expand her water-quality sampling work on the Central Columbia Plateau NAWQA Study Unit into data interpretation. Early in her career, Lonna was recognized as competent, highly productive and very easy to work with, and was always in high demand because of her skills and good team attitude. In 1996, Lonna left the Science Center briefly to complete a master's program in Hydrogeology at Washington State University, further strengthening her technical skills. After grad school, she continued as a key team member on the Central Columbia Plateau NAWQA and during that time collected water-quality samples, analyzed data, and documented study results in reports. She became proficient in sample-collection methods, statistical

analysis of data, and writing, all of which Lonna honed with great skill. During and following her work with NAWQA, Lonna also developed expertise in nutrients in groundwater and led investigations assessing the risk of nitrate contamination of groundwater throughout the entire state. Lonna consistently led and completed her investigations ahead of schedule – a practice that became one of her hallmarks. Following NAWQA, Lonna added groundwater modeling to her skill set and constructed and applied numerical flow models for Bainbridge Island and Kitsap County in Puget Sound, and Quincy Basin on the Columbia Plateau. She also continued her water-quality investigations including a comprehensive assessment of groundwater quality in the Columbia Plateau, Snake River Plain, and Oahu basaltic-rock and basin-fill aquifers. Lonna was an exemplary project chief and team member on countless Center investigations and is one of the few groundwater modelers who could consistently complete her projects on time! She was a prolific author and has an impressive bibliography that includes 23 USGS publications and 5 journal articles. Throughout her career, Lonna was an extremely capable and productive hydrologist who carried projects from the data collection stage to the final written product. Although her many skills (including being a cribbage ace) and comradery will be sorely missed, her friends at the USGS wish her a long and happy retirement.

Scott Gain, Director of the USGS Lower-Mississippi Gulf Water Science Center, and champion of science planning and leading without fear, retired at the end of December 2019, with 35 years of service! Scott started off in the hydrologic investigations section in Fort Worth, Texas, then moving on to Orlando, Florida where he served as project chief and Hydrologic Data Chief before moving to Nashville in 1997 to serve as the Director of the USGS Tennessee Water Science Center. He holds a MS degree in forest hydrology from the University of Florida, a BS in environmental science from Richard Stockton College of New Jersey and taught at Pampanga Agricultural College in the Philippines as a U.S. Peace Corps volunteer for two years before joining the USGS. Throughout his time with the USGS, Scott's personal scientific expertise has been varied, including the assessment of storm-water retention-pond efficiencies, quantification of nutrient loading to lakes, statistical modeling of saltwater mixing in estuaries, hydrologic modeling of Karst wetlands, and statistical characterization of ecological-flow requirements. After nearly 2 decades leading the Tennessee Water Science Center, Scott decided that 1 Center was not nearly enough of a challenge and in January of 2013, Scott assumed responsibility for both Tennessee and Mississippi Water Science Centers. Still up for more of a challenge, in October of 2014, he became the Director of the newly formed Lower Mississippi-Gulf Water Science Center, which combined all water resources programs of the USGS for the states of Alabama, Mississippi, Louisiana, Arkansas, and Tennessee. This was no small task by any means; however, Scott's positive leadership style, big picture visionary thinking, and strong collaboration skills were up for the challenge. The Lower Mississippi-Gulf Water Science Center, as a result of Scott's efforts, is providing science to a changing world at a scale and scope far beyond what could have been accomplished by each state individually. ***(NOTE: Picture is of Scott with his wife Catherine in the Great Smoky Mountains National Park. They met while both serving in the Peace Corp almost 40 years ago and have not stopped exploring since!)***

Jerry Garrett began his career by total luck in July 1978, when at age 19 he got a call from the co-op office at the technical school he was attending. He had never heard of the co-op program and had no idea what the USGS was all about. The USGS was on-site and the co-op office asked him to come in for an interview that day. He began his career a few months later in September of 1978 at age 20. Jerry learned the basics of surface water, groundwater and water quality and used that knowledge collecting basic data, working in projects, and helping with NASQAN sampling. In 1984 he became the lead technician on a suspended sediment study at Reelfoot Lake. The Reelfoot lake projects grew to include nutrient and pesticide loading to the lake, groundwater levels, sediment cores and an evapotranspiration study. During the late 80's Jerry oversaw other sediment projects in West Tennessee. In 1988 Jerry took the lead in overseeing the field activities in the Memphis office as well as overseeing data collection for the Beaver Creek study which involved comparing paired watersheds and best management practices. Data collected included suspended sediment, nutrients, and pesticides. In 1991 Jerry was nominated by Jim Cook, then Regional Hydrologist, to be the lead technician for the Apalachicola-Chattahoochee-Flint NAWQA project and moved to Atlanta, Ga., in January 1992. As the data collection effort was coming to an end in 1995, he and Howard Pearlman (Ga. district staff),

put together one of the best early web pages in the USGS. Among other things, the page allowed the user to pull formatted or downloadable water quality tables and project study maps. Jerry became the Georgia representative on the Southeast Region Technician Advisory Committee. In 1997 Jerry moved to Nashville, Tennessee, and became the lead tech on the Lower Tennessee NAWQA. Shortly after moving back to Tennessee he became the Technician Advisory Committee representative for Tennessee. Jerry moved back to Memphis in late 2001 and took over the lead technician role in the Memphis Field Office. For the next 12 years he oversaw the collection of basic data as well as data collected for projects in West Tennessee. During this time he was part of five surface-water reviews including visits to Michigan, Colorado, Wyoming, North Carolina and Mississippi. He joined the CHIDER committee in 2006 and was a member until the committee was dissolved in 2013. In 2014, the Lower Mississippi Gulf (LMG)WSC was formed and Jerry became the Field Operations Chief (FOC) for the three field offices in Tennessee. For the last 5 years of his career he has been one of seven FOCs for the LMG WSC. In 2014, the USGS began making routine discharge measurements and collecting suspended sediment samples on the Mississippi River at Memphis. Jerry was a regular part of this effort and he is among a handful of technicians that can claim to have measured 2 million ft^3/s. During his long career Jerry has had the honor to work with some of the brightest and hardest-working technicians and hydrologist in the Survey. As a technician he was able to author/co-author over 15 reports including OFR, WRIR, Fact Sheets, and two NAWQA summary reports. Forty-one years after the lucky 19-year-old was hired he has decided to call it quits. January 3 was his last day on the job. He has often said that you could not have designed a better career for his personality. Jerry plans to work on his farm, to hunt and fish as much as possible, and to enjoy more camping and traveling.

George Harlow entered a phased retirement on January 1, 2020 after almost 32 years of service to the USGS. As George would say, “Phase 1 I work, Phase 2 I retire.” George grew up just outside of Greenville in Augusta County, Virginia where he earned his keep on the family homestead fishing, trapping, skinning, and sending furs to Chicago. Ask George what possum, raccoon, squirrel, or beaver taste like and you might hear, “I was hungry!” He remains close to his family and friends in Augusta County, particularly his father George E Harlow, Sr. He left the comforts of his mountain home and ventured south to Virginia Tech where he received a B.S. in Geology in 1983, found the love of his life Susan, and started a friendship with David Nelms that carried him through a career with the USGS. George ventured further south to the University of Tennessee at Knoxville where he received his M.S. in Geology in 1987. In 1988 George began work as a hydrologist with the USGS’s Virginia District. George’s career started off with a bang with his work in the coalfields that resulted in his and Gary LeCain’s Water Supply Paper which remains a landmark among those working in Appalachian hydrology. The DODEC and APRASA days followed soon thereafter where George and David Nelms, aptly named “The Sunshine Boys” by Eve Kuniansky, created a culture where valuable relationships with scientists from NRP, Branch of Geophysics, and Regional Specialists contributed to tremendous advancement in the understanding of groundwater in Virginia. Harlow and Nelms even befriended New York Times Bestselling author Lisa Gardner who fictionalized Harlow and Nelms in “The Killing Hour” where their geologic knowledge was used to solve a crime. Given more time, pick up the sequel “Alone”, and read about the killing of George Harlow. George continued to work in other areas of Virginia, specifically the Coastal Plain with his long-time friend and colleague Scott Bruce. In 2006, George ventured into management as a Studies Chief. Even as his role in Center management grew, his attention to detail and personal interest in the well-being of colleagues, never changed. His ability to build lasting relationships contributed to the successful merger of the Virginia and West Virginia Water Science Centers. His fatherly instincts, mentoring skills, honesty, and integrity have influenced many in the USGS and beyond. In his over three decades with the USGS, George has been a Hydrologist, Supervisory Hydrologist, Associate Director, and most recently, Acting Director with the U.S. Geological Survey, Virginia-West Virginia Water Science Center in Richmond, Virginia. He plans to spend time with Susan at their family home on the river, hoisting up crab pots and entertaining Harlow style.

Richard Kane, Caribbean-Florida Water Science Center, Associate Director for Data, retired after 34 years of service to the USGS. Richard’s career was spent in Florida and Nevada and encompassed both interpretive and data science. The details of Richard’s career are given below but the essence of his career was one of dedication to the mission of the USGS. Richard graduated in 1982 from Pensacola Jr. College, AA,

General Sciences, and followed this in 1985 with a Bachelors' degree in Geology at the University of South Alabama. Between 1985 and1989, he began his career with USGS in Stuart, Fla. as a Hydrologic Technician. He served on several projects, including the last of the Regional Aquifer Studies (RASA) in south Florida, and several geophysical projects. He was also the project chief of the Potentiometric Map Study of the Upper East Coast of South Florida. During 1990 -95, Richard was a Hydrologist in the Ft. Myers, Fla. field office and team member on two projects (Bathymetry of Matlacha Pass and Hydro-geologic framework and salinity analysis of the Floridan aquifer system in southwest Florida). He also served as the office Database Program Coordinator. In 1995 Richard transferred to Las Vegas where he became Nevada Networks Unit Chief for the Data Program and managed a Flood ALERT project, the basic data program, and a Yucca Mountain Water Resources project. In 2002, back to Florida where he served as Tampa Data Chief and managed a program of 300 hydrologic stations and sensors, and 25 staff. He survived 6 hurricanes that passed over Florida in 2004-05 (2 of which passed directly over his home). From 2011until his retirement Richard served as Associate Center Director for Data, Central Florida WSC where he managed a data program with 6 offices in Florida and Puerto Rico and over 120 staff, and over 2000 hydrologic sites and sensors with 60 federal, state, and local customers. During this time, he was particularly busy establishing and operating the Center Storm-tide network. He published 33 professional papers during his career. His energy and professionalism will be missed by the Science Center.

Michael Langland, Hydrologist in the Pennsylvania Water Science Center and Ecology project section, will be retired on December 31, 2019 after working 34 years with the U.S. Geological Survey (USGS),Mike began his career as a Hydrologic Technician in the Pennsylvania Water Science Center in a temporary position in the sediment laboratory. Two years later he secured a permanent position in the Hydrologic Surveillance Section where he was tasked with making streamflow measurements, maintaining in-field electronic stream-gaging equipment, constructing stream gages, and working streamflow records. In 1988, he was converted to a Hydrologist and became a member of a multidisciplinary team studying agricultural nonpoint-source contamination with the responsibilities of collecting surface-water and groundwater-quality data, managing and analyzing water-quality data and writing sections of interpretive reports. Most notably, Mike has been a key player in research over the last 2 decades in monitoring sediment and nutrient concentrations in the Chesapeake Bay Watershed and assessing changes in loads and trends over time. He was the coeditor and coauthor of the first comprehensive report on sediment processes in the Chesapeake Bay and Watershed. Mike also worked with the Chesapeake Bay Program and served on various committees—the Nutrient Management Subcommittee, the Non-tidal Monitoring Workgroup, the trends team, and as the original chairman of the Sediment Workgroup. Mike's recent work was an analysis of sediment loading to the Conowingo reservoir with findings indicating the reservoir is at over 90% capacity for sediment storage. The report findings were used by the U.S. Army Corps of Engineers and other partners to develop options to mitigate sediment and associated nutrients from reservoirs on the lower Susquehanna River. Mike will be missed by his friends and colleagues who all wish him well in his retirement. Future plans include spending time with family, traveling, and volunteer work. A retirement party for Mike is being planned for some time in January 2020.

Emmet McGuire is retiring December 31, 2019. In Arizona he is known as the man of steel for a couple of reasons the first because he is the toughest man I know. The second reason is that he worked in a steel mill for 21 years before coming to the USGS. He is also one of the nicest people I know. His leadership in the Arizona Water Science Center will be sorely missed. His ability to make work fun while producing high-quality work is something very special. As Field Office Chief he has built many teams to tackle the installation of flood warning networks for communities that were down stream of burned watersheds. Emmet is a leader, teacher, and a good friend to all of us in the Arizona WSC. He will be very difficult to replace, so I am going with him in retirement (ha ha). Emmet plans to ride a lot of trains and his hogs (his two Harleys).

Brian Moore, hydrologic technician from the Ohio-Kentucky-Indiana (OKI) Water Science Center, Louisville Office plans to hang up his hip boots and retire on 12/31/2019 after 38 years. It's time to let someone else climb up and down the creek banks, run the field trips, build the gages, operate the truck booms, wading rods, tethered boats, the real boats, a QW Sonde and to turn the 3rd construction truck (the HOG) over to the new younger personnel at the USGS. Brian started his USGS career in November 1980 in Tuscaloosa, Alabama, working part-time in the sediment lab, while attending the University of Alabama. This led to surface water field trips on rivers and lakes during the summer months all over Alabama. Brian completed his degree at the University of Alabama and became a full-time hydrologic technician in January 1985. After a few years of running field trips and measuring the Tombigbee, Black Warrior and the Alabama River using a real boat and not a tethered boat such as are used today, Brian transferred in 1987 to the Kentucky District in Louisville, KY to be part of a new "pilot" National Assessment Water Quality (NAWQA) study. NAWQA sampling turned into numerous field trips and many years of operating the early QW mini-monitors and later new improved QW Sondes. Brian has led the installation of most gages for SW and QW sites all over KY. Around 1992, Brian converted to a Hydrologist and tried his hand at developing proposals and writing reports, he even co-authored a few. This was ABSOLUTELY the only part of the job that Brian has disliked. It did not take long for Brian to convert back to a Hydrologic Technician - to get back in the field collecting our important data. Brian has been a part of more than 15 details over his 38 years. Some of the states where he has collected data include: Minnesota, Pennsylvania, Maryland, South Carolina, Mississippi, Texas, Nebraska, South Dakota, New Mexico, Missouri, Ohio and California. Brian was part of a crew of five from the Kentucky District in October 2005 that traveled down to the HIF to assist their employees with disaster recovery from Hurricane Katrina. "We slept on air mattresses and showered at the HIF. We brought our own food, grill, and cooked out each day for lunch and dinner. We were so glad we could help our peers." Brian will always miss grilling out for lunch at many of our field sites with Master Chef Kyle and some other unnamed chefs who were not that good as a chef! In retirement, Brian plans to spend more time with his family and more time boating, fishing and relaxing on Smith Lake in Alabama!

Larry Myers retired on December 31, 2019, after nearly 28 years in the USGS. Larry was a U.S. Marine and after his service in the late 1980's, he ended up in Alaska and discovered the USGS where he spent several years operating gages in the wilderness and having an overall great time. During his time there Larry co-authored a report on river channel geometries affected by the Volcano Redoubt eruptions in 1989-90. After this, Larry transferred to the Pacific Islands Center where he spent time flying around making measurements and managing gages on remote islands. Seeking even more adventure, Larry transferred back to his hometown, Indianapolis, for the past 13 years. Larry brought all his field skills, experience, and positive attitude with him back to Indiana and proved to be an invaluable member of our team. Larry has excelled at running levels and surveying and took over the lead surveying role in Indianapolis. Larry has been a 'go to person' within the office to new as well as experienced staff for all sorts of questions and advice. He routinely went out with new staff to train and has always been a great source of knowledge for all of us. Larry has seemingly unlimited stories from all his life adventures and we've been very lucky to have heard quite a few of them over the years. Larry is also an avid photographer and has some pretty stunning photos. Larry really dislikes attention, but he reluctantly agreed to a get together for his retirement here in the Indianapolis Water Science Center on December 17, 2019.

Howard Perlman, Hydrologist, retired on January 30, 2020 after 42 years with the USGS, with the South Atlantic Water Science Center. Howard began his career with USGS in 1977 at the Eastern Water Quality Laboratory (yes, there was one in Atlanta) pouring acid into water samples, boiling them, and attempting not to breathe in the toxic fumes. He transferred to the Georgia District office in 1978, working on a West Point Reservoir water-quality project, which entailed many trips and hours in motorboats. Howard's career, from the early days, started to evolve and focus on scientific-data communication, as the use of computers began. The early years transformed from creating a whole lot of 80-column

punch cards to PRIME minicomputers, where Howard got involved in using Fortran to create Aggregate Water-Use Data System (AWUDS) for the National Water Use Program. When the World Wide Web arrived, Howard realized early on that it would become an essential tool for USGS in the communication of our mission, data, and information to the world. He developed some of USGS's first Web sites, such as the National Water Use pages and the Water Science School. In 1997, Howard received a USGS grant which allowed him to create the Water Science for Schools Website (later to be renamed The USGS Water Science School (WWS). The WWS teaches water concepts to a worldwide audience. The "adult" water-cycle diagram and accompanying summary texts has been translated into over 60 languages and a similar "school" version of the water-cycle diagram now appears in over 30 languages. WSS brings millions of users from all over to world to the USGS Web pages. In 2017, the WWS pages were viewed over 13 million times, sometimes up to 70,000 hits in one day. Howard's interest in ensuring that searches for Water would hit the WWS page was instrumental in this accomplishment. Howard will continue with USGS as a Volunteer for Science, helping out with the Water Science School Web site. Thank you, Howard, for your time, dedication, and commitment to ensuring the scientific data is easy to understand, and your work has helped simplify the Water Cycle into something the world can appreciate.

Steve Phillips is retiring after 39 years with the USGS, California Water Science Center as the lead Groundwater Specialist. Steve's USGS career started at age 19 in the National Mapping program in Menlo Park. Five years later, he joined the California WSC to work on texture-based groundwater modeling associated with the San Joaquin Valley Drainage Program and then became Project Chief for groundwater – surface water interactions (and associate nutrient loading) along the San Joaquin River. Steve continued to work on groundwater issues along the San Joaquin River throughout his career, but after his move to Sacramento in 1989 he broadened his research portfolio considerably. Over the years, Steve has worked on aquifer characterization and recharge estimation in the San Francisco Bay area; water resources and subsidence studies, including regional modeling and aquifer storage and recovery modeling; various NAWQA focus studies spanning from field work to advanced modeling; and integrated hydrologic modeling. Since 2009, Steve has done a superb job as the center's Groundwater Specialist, culminating in forming and leading a 4-person groundwater specialist team serving the center's Projects, Data, and Research Drilling Programs. As Groundwater Specialist, Steve has led many annual and triannual project reviews, reviewed countless proposals and reports, interacted with scientists and managers at all levels of the USGS and elsewhere, and advised, taught, and mentored just about everyone working on groundwater in the center. Starting in 2015, Steve has also served as the center's coordinator for activities associated with California's new groundwater law, the Sustainable Groundwater Management Act (SGMA) of 2014. This has included developing and leading a growing portfolio of SGMA work in cooperation with California's largest water agency, the California Department of Water Resources. In addition to his USGS leadership, Steve also helped lead the Groundwater Resources Association of California (GRA) for two decades. He served in various GRA officer and other roles and is currently GRA's statewide president. To start his retirement, Steve has a number of exciting travel plans (New Zealand!), but we hope that we'll continue to see him quite a bit as he serves out his GRA term and enters the USGS Scientist Emeritus Program.

Chris Smith retired on December 31, 2019 without a lot of fanfare but with great appreciation for the excellent and extended service that he has provided the Arizona Water Science Center and to the USGS. Chris requested brevity in this announcement so I will honor that, but I also know that Chris has touched the careers and lives of a great number of people in USGS and beyond. So I want to share the news of his retirement. I'd be remiss not to include a bit of detail. Chris started with USGS in the Arizona District in 1981 as a Hydrologic Technician (following an illustrious college football career at the University of Arizona that included a Fiesta Bowl appearance). In short order he converted to a Hydrologist and a bit later took a position at Tennessee Valley Authority before coming back to USGS in 1989. In 1995 Chris became the Data Chief for Arizona and has held that position ever since. Arizona experienced massive state-wide El Nino-based flooding in the late 80s and early 90s. Chris has always liked to say that since he became Data Chief, we haven't

experienced another huge flood, and it looks like he's going to get off this ride without that flood. Kind of makes me worried about what happens after he walks out the door.....We'll miss you Chris!

Randy Thomas retired on December 31, 2019, after more than 31 years of service. Randy graduated from Memphis State University (now University of Memphis) in 1983 and began his USGS career in October 1988 as a Civil Engineer. Randy's early career was spent working on a statewide bridge scour project, where he spent endless hours making a variety of geomorphological measurements. As the scour project came to an end, Randy continued to work as part of the studies group where he worked on a variety of projects, many of which were groundwater related. These studies included water quality sampling for the NAWQA program, groundwater levels data for multiple uses, and several seepage studies. Randy became the primary groundwater person in the Memphis office. He also is well-versed in surface water data collection and was a big part of the Memphis Field Office. A few years back, Randy was converted from Civil Engineer to Hydraulic Engineer, then about four years ago he was re-assigned to the data section, where he is still the primary groundwater person. He also ran a routine surface water field trip and participated on several surface-water studies including work at Reelfoot Lake and suspended-sediment sampling on the Mississippi River. Randy is one of a small handful of people that can claim to have measured over 1.5 million ft^3/s. Randy's 31 years of experience will be missed. Randy plans to return as a volunteer and assist a very young Memphis staff as needed. He also plans to travel and is considering a part time job with one of the local co-operators.
Please join me in wishing Randy Thomas farewell as he begins a new chapter in his life.

Tom Van Dreser retired in December 2019 from USGS after 30 years and 5 months of service.

Richard Yager, Research Hydrologist, retired December 31, 2019 from the with the U.S. Geological Survey Washington Water Science Center. Richard completed 39 years of exceptional service conducting hydrogeologic studies and developing simulation models of groundwater flow and transport around the nation in a variety of terranes and environments. Richard joined the USGS at the New York District in 1981 while completing his graduate studies at Cornell. Early in his career, he investigated stormwater contaminants in the Irondequoit Basin in Monroe County NY and spent several years conducting hydrogeological studies near a former reprocessing plant for nuclear fuels in West Valley NY. He moved on to study groundwater flow and river infiltration in a fractured dolostone aquifer near Niagara Falls that was overlain by more than 100 waste-disposal sites. In the 1990s, Richard assessed the effects of mine flooding on a regional aquifer system in Livingston County, NY that was a result of catastrophic roof collapses in one of the world's largest salt mines. In the 2000s, Richard studied groundwater flow and brine migration in the Onondaga Trough in NY, home to one of the Nation's most polluted lakes. Most recently--and to the great benefit of my Center--Richard completed his phased retirement assisting Washington Water Science Center with a quite complicated string of variable-density, tidally influenced groundwater-flow and contaminant-transport models that will be used by the Navy for risk assessments and potential remediation strategies. While completing this work, Richard mentored a few hydrologists in the Center who benefited from his vast expertise. Throughout his career, Richard has had an outstanding ability to identify new and innovative approaches, tools and technical skills in the area of groundwater systems and solute-transport modeling. But rather than my going on about his illustrious (notorious?) career in groundwater modeling, feel free to contact Richard about his recollections and acknowledgement of the many great friends and colleagues he was able to work with at USGS. Although his many skills will be sorely missed, we all wish Richard a long and happy retirement.

EDITOR NOTES – USGS SCIENCE

As was once was the practice for this Newsletter, we are encouraging submittals of interesting science stories or observations from members and active USGS employees. Please send such articles for consideration to me or any of the Regional Editors. Here are a couple of examples I recently received:

From Minnesota State Representative Mark Have:

James Fallon, Data Chief and liaison for Minnesota, reports that field work hasn't slowed much from the usually busier times in the spring. The flow duration and cumulative streamflow hydrographs from station 05311000 Minnesota R. at Montevideo in western Minnesota shows flows staying well above normal for the entire water year. James says that flow duration at Montevideo has barely been below the 75th percentile of flow for the last two years, setting seasonal daily high-flow records for many days. Several other gages in southern and northwest Minnesota are similar. Approximately 100 years of record and the cumulative hydrograph indicate CY2019 will be the wettest on record; not due to any peak of record flows, but just consistently high flows.

https://waterwatch.usgs.gov/?id=wwchart_sitedur&site_no=05311000&legend_show=1

https://waterwatch.usgs.gov/index.php?sno=05311000&yr=2019&xlgd=1&go=GO&ofmt=plot&atp=log&cfu=mcf&id=wwdur_cumflow&ct=wwdur_cumflow&lgd=1&ytp=yv

It appears that high flows are not just occurring in Minnesota. The following map of streamflow for December 2019 not affected by ice shows relatively high flows for most of the upper Midwest as well as various other regions in the country:

https://waterwatch.usgs.gov/.php?id=mv01d

Former Regional Program Officers honored a great colleague and friend at Bob Burchett's memorial (LtoR): Tim Hale, Herb Freiberger, and Pete Anttila and former Marion Field Office Chief, Eugene Hendricks, attended the celebration of Bob Burchett's life on October 26, 2019 at Hungry Mother State Park in Marion, VA.

MEMORIALS

Phillip R. Boucher, 86, passed away on November 6, 2019 surrounded by a steady stream of loved ones. An avid reader, Phil loved Don Quixote, and one of his favorite songs was The Impossible Dream from Man of La Mancha. The words sum up Phil's life as that of a man who used it all up in pursuit of his own quest: to live and love like Jesus; dream the impossible dream; fight the unbeatable foe; bear with unbearable sorrow; and run where the brave dare not go. He didn't have any delusional battles with windmills, but like many good stories, Phil's life still had a peculiar beginning: Phil always maintained that he was born a little dog on their 20,000-acre dairy farm and cattle ranch in Colorado Springs, Colorado on Oct 19, 1932. He woke up one morning in the doghouse and found he was a little boy. He would point to his one remaining dog tooth to prove it to all his kids. Phil grew up a true cowboy in Colorado, riding horses bareback, milking cows, and of course doing endless chores. His love of classical music came from his mother, Esther Boucher, as he would often fall asleep to the sound of her piano echoing through the farmhouse. Phil's lifelong hero was his father, "H.L." Boucher, whose dream was for all of his children and generations of grandchildren to follow Jesus and be reunited in heaven. Phil took this charge very seriously. After graduating fourth out of four in his high school class, he headed to Colorado A&M in Fort Collins to earn a degree in engineering. He was president of the campus ministry group, the Wesley Foundation. Several of his friends in that group eyed the five young ladies who happened to share a name and there was a bet made among them to see who could be the first to date all five Dorothys. After dating four of them, the brilliant and beautiful Dorothy Peterson was the last Phil needed to date in order to win the bet. The two were married in 1954. Of course, Grandma Dorothy jokes with a wink that she won the bet. Phil's career in hydrology gave him several nomadic years in the early days of their young marriage. After a few years working for an irrigation district in Worland, WY, they moved to Portland, OR for training in his new job with the U.S. Geological Survey. There they spent a month in a tent with four small children before finding a rental. After spending a year in Portland, he transferred to the Tri-Cities where Phil worked the rest of his career at the USGS Pasco field office. As a USGS hydrologist Phil ran the office in Pasco and spent hours chasing floods and taking river measurements throughout the northwest, following the sediment flow in many small and large rivers. Multiple Sclerosis hit him hard as a young man, affecting his day-to-day life from age 40 until he died. He also fought through multiple bouts of cancer and numerous complications from celiac disease. He continued to push through his challenges with grit, determination, and always with humor. At 75, when a doctor asked him what he'd done lately for exercise, he said, "Yesterday, I dug a two-foot-deep and hundred-foot-long trench." When he caught a large steel beam falling and wrenched his bicep, he joked, "It'll feel SO GOOD when it stops hurting!" Those close to him knew he struggled with depression for most of his life. In one of his journals, he wrote: "When I dig a man out of trouble, the hole which I leave behind is the grave where I bury my own sorrow." And so, despite his many struggles, and challenges, there was always time for others. There was

always more room at his table, a place in his house, and love in his heart for anyone in need. Phil is survived by his soulmate and wife of 65 years, Dorothy, his five children, as well as multiple grandchildren and great-grandchildren. He is an irreplaceable part of so many lives and will be greatly missed. A Memorial Service to honor Phil was held November 23, 2019 at Hillspring Church, Richland, WA.

Sara F. Boyd, 91, ***(wife of retiree Edward 'Bush' W. Boyd)*** passed away on August 2, 2016 in Ashland City, TN. She was born May 1, 1925 in Henderson County, TN. Sara attended public schools in Henderson and Davidson Counties. She graduated from West High School in Nashville, TN. She was preceded in death by her parents. She is survived by her husband of 66 years, Edward Bush Boyd, 4 children, two granddaughters and a brother. A memorial service was held on August 13, 2016.

Dorothy Cline ***(wife of retiree Denny Cline)*** passed in July 2019 – no obituary/memorial could be located.

Joan Dolnack, 71, ***(widow of retiree Donald Dolnack),*** passed away on February 25, 2018 in Belle Vernon, PA after a serious illness. She was born in North Charleroi, PA on December 12, 1946 to George and Lorraine Povich Jr. After the passing of her husband of 34 years in 2003 in Herndon, VA Joan relocated to Belle Vernon, PA. She is survived by a son, a sister and brother. She was preceded in death by her husband, two sons, and her parents. A prayer service was held on February 28, 2018, and interment follow at Belle Vernon Cemetery.

Daniel J. Gockel, 84, of Longmont, CO, passed away peacefully on October 14, 2019. Dan was born on April 30, 1935, in Dubuque, IA, to Celestine and Theresa (Adams) Gockel. He graduated from St. Columbkille High School at the age of sixteen and attended Loras College before enlisting in the U.S. Army where he served in the 101st Airborne. Dan was united in marriage to Elaine Ann Rohret on January 20, 1962, at St. Peter's Catholic Church in Cosgrove, IA, and they raised four children on a farm near Iowa City, IA. He also worked 35 years for the U.S. Geological Survey as a Computer Specialist, retiring in 1995. Dan enjoyed traveling and spending time with friends and family. He spent many hours in retirement volunteering for various organizations including Hospice, the Sera Club, Meals-on-Wheels and St. John the Baptist Food Bank. Those left to cherish his memory include his loving wife, Elaine Gockel, their children Lynn Hudachek, Daniel (Kelly) Gockel, Kathy Gockel, and Teri (Bruce) Motheral; seven grandchildren, two brothers, as well as many sister and brothers- in-laws, and nieces and nephews. There will be a visitation at Ahlberg Funeral Chapel on Wednesday, October 16th starting at 5:00 pm (rosary at 6:00), and a funeral mass on Thursday, October 17th at 10:30 am at St. Francis Catholic Church, Longmont, CO. There will be a memorial mass Wednesday, November 27th at St. Mary's Church in East Dubuque, IL, with burial following in the Mt. Olivet Cemetery in Dubuque, IA.

Alicia Hinds, 80, passed away on December 2, 2019 in an assisted living home in Tucson, AZ. Alicia worked in the Tucson, AZ office. She will be cremated and her ashes will be scatter somewhere in Oregon as she wished. As of now her brother indicated that there will be no memorial service for Alicia in Tucson, AZ.

Lawrence "Larry" A Martens, 89, of Pell City, AL, passed away Thursday, November 7, 2019 at Grandview Medical Center in Birmingham, AL. Larry was born September 14, 1930 in Coleman, WI to the late Harry A. Martens and Emma Laurent Martens. Larry graduated from Coleman High School in 1949 and then enlisted in the Air Force in 1951 as an aircraft engine mechanic. Before deploying overseas, he married Rita Huberty on December 29, 1951. During the Korean Conflict, Larry served in assignments in the Philippines and French Indo-China and completed his military service in 1955 while stationed in Greenville, SC. He graduated from the University of Wisconsin with a BS in Civil Engineering in 1959 and then began his career with the Water Resources Division of the U.S. Geological Survey (USGS) that involved work primarily in hydrology and hydraulic engineering. His earliest assignments were in Madison, WI, Raleigh, NC, Arlington, VA, and Baton Rouge, LA. In 1974, Larry was selected as District Chief in Champaign, Illinois. Four years later he was named District Chief in Albany, NY. He culminated his distinguished 41-year career in Reston, VA while serving as the Associate Regional Hydrologist for the Northeast Region. Following his

retirement from Federal Service in 1992, Larry and Rita moved to Pell City, AL. During the private life of his career, Larry was a Grand Knight of the Knights of Columbus while in Baton Rouge, LA and hence he was very active in the Catholic parishes in each community he and Rita lived in thereafter. Larry was also an avid gardener and expert woodworker who enjoyed bridge, bowling, golf, and volunteer work. He and Rita enjoyed travelling particularly following his retirement. Larry is survived by his 3 daughters and 1 son, 9 grandchildren and 8 great-grandchildren, and a brother and sister. He was preceded in death by his wife, Rita, his parents, 3 brothers and 5 sisters. Larry will be greatly missed, certainly by his family, but also by his many friends and co-workers in the USGS*.*

Herb Freiberger *writes: Anyone who got to know Larry knew that he was "No shrinking violet. "You always knew where you stood and you knew how he felt about any given issue, a good trait. Larry was a mentor to me, and he probably didn't even know it. I became the District Chief (DC) for MD-DE-DC in 1980. At that time, Larry had already been a DC in IL and was 2 years into the NY DC job. I had the opportunity to observe him and listen to him, which I did. He was the one who taught me that if I wanted to be a good and effective DC, your top priority, by a mile, had to be "program development".* ***Dave Click*** *writes: During the 1980's and early 1990's, Larry and I were both DC's in the Northeastern Region (NR), a time when leadership in the Region was fairly stable. It was also a time when our children were out of high school and therefore our spouses were able to join us at major meetings, conferences and later at WRD Retirees's reunions. Life-long friendships were fostered, which was certainly the case with Larry and Rita and Laurel and I****. Stan Sauer*** *writes: I first knew Larry when he was in Arlington, VA on a rotational assignment in the Surface-Water Branch office and I followed his career thereafter. There was no question that Larry gave his all in every job that he ever held in his career, whether technical or managerial. On a personal note, Virginia and I enjoyed our friendship with Larry and Rita, during the time that Larry and I worked together in Reston, VA, a friendship that lasted well into retirement. Lastly, I guess Larry and I could be called the cardiac twins as near the ends of our careers, we both wound up in Fairfax Hospital, VA at the same time with some pretty substantial heart problems.*

Delmer J. O'Connell, 83, passed away July 8, 2019 in Green Valley AZ. He was born in Ray, ND. Delmer became the Chief of the Wyoming, Riverton Subdistrict/Field Office: In 1967, In 1969 he moved to Cheyenne and returned in 1971 and moved to Green River in 1976. WRD History Vol. III (1979-1994) Wyoming: In 1979 Delmer was the Hydrologist-in-Charge of the Green River Field Headquarters. Delmer transferred from Wyoming to the Nashville Subdistrict office in 1982 and remained there until 1989 when he transferred to Iowa. From 1990 he was the Hydrologic Surveillance Section Chief until he retired in 1992. He is survived by his wife Judith of 48 years, a son and daughter in-law, a granddaughter and a grandson, two brother-in-laws and a sister-in-law, and several nieces and nephews. Delmer's funeral mass was held at Our Lady of the Valley on August 1, 2019.

Jean S. Rapp, 82, (*wife of retiree Don Rapp*) of Carriere, MS, passed away on May 2, 2019. Jean was a resident of Pearl River County for the past 19 years and was a member of First United Methodist Church. She was an instructor at Odyssey House. She is survived by her husband, Donald Rapp of Carriere, MS; her two sons; and a daughter, her two brothers and her three sisters, and ten grandchildren and sixteen great-grandchildren. She is preceded in death by her parents, Arthur Collings and Ella Mae Payne Collings; and three brothers. Visitation was held on May 4, 2019 at First United Methodist Church in Picayune, MS with the memorial services following.

Charles W. "Charlie" Smoot, 81, passed away on October 6, 2019 at his residence in Ball, LA surrounded by his loving family. Charlie proudly served our country in the National Guard as a medic. Charlie began working for the USGS as an Engineering Technician in the Alexandria Louisiana Field Headquarters Office in 1959. He soon became one of the "hands on and go to" experts in groundwater resources in North and Central Louisiana. Charlie worked his entire 35-year career in the Alexandria and the Ruston Louisiana offices. After retiring in 1994, Charlie started his own groundwater resources consulting business. During retirement Charlie had many hobbies including woodworking, gardening, rock collecting, and oil painting. He enjoyed tent camping, hunting, fishing,

and traveling with his family throughout the United States. Charlie was a loving and devoted husband, father, grandfather, great grandfather, uncle and friend. One of Charlie's grandsons, James Fountain, is following in his footsteps and is a key staff member of the USGS in the Baton Rouge, Louisiana office. He was preceded in death by his wife of 63 years, Carmen Brown Smoot and parents, Warren William and Daisy East Smoot. He is survived by his four daughters, six grandchildren, nine great- grandchildren; numerous nieces, nephews, other family members and friends. Funeral services were October 9, 2019 in Pineville, LA. Burial followed in Springhill Cemetery in Tioga, LA.

One of Charlie's' coworkers, ***Ed Martin****, writes about Charlie: "Charlie was the archetypical Senior Hydrotech that the field operations of WRD was based upon. He was dependable, conscientious, and possessed a lifetime of knowledge of the geohydrologic systems of North and Central Louisiana. He was instrumental in maintaining sound hydrologic data collection networks and in training and passing on his knowledge to new employees."*

Marion V. Thomas, 84, ***(wife of retiree Chester F. 'Chet' Thomas)*** of Manchester, CT passed away on December 28, 2018 after an extended illness. She was born in St. Louis, MO on August 31, 1934 to Irma Case W. Fulbright and Wilbur L. Fulbright. The family moved to nearby Webster Groves, MO when she was 11 years old where she spent next the 10 years. Marion graduated from Washington University in St. Louis, MO with a degree in journalism, where she was president of her sorority, Alpha Xi Delta. After marrying Chet., whom she met while attending the University, she worked in newspaper, radio, and television before raising her children. She liked to recount the journalism projects she worked on including writing headlines and promoting a campaign for NBC's Huntley-Brinkley anchor team. She lived in many places from Amarillo, TX to Albany, NY due to her husband's work as a geologist and hydrologist before settling in Manchester, CT. in 1965. Marion had several personal interests. Her passion for the St. Louis Cardinals and the UConn Women Huskies was evident to all who knew her. During the summer, she loved tending to her numerous gardens. She found joy in many forms of music including classical, choral, showtunes, and operettas; The Mormon Tabernacle Choir was near and dear to her heart. Researching family genealogy was a personal mission for her, and she met many people across the country while searching for family records. She was very active in her children's education and scouting years. She is survived by her husband of 62 years, two sons, and a daughter; and six much loved grandchildren. Her family wishes to express its deep gratitude to the doctors, nurses, and aids who assisted her and her family over the past 4 months. A celebration of Marion's life was planned for the Spring. She will be interred at East Cemetery in Manchester, CT.

Carol Ann Watterson, 78, passed away on December 18, 2019 from complications of a broken leg. During her time with the USGS, she used her middle name which most people were familiar with. Ann was born in Roanoke, VA on June 7, 1941, and grew up on a small family farm nearby. Her father, Charles Watterson, served in Europe during WW II and was killed in that conflict. Her mother, Louise Leonard Watterson, remained at the farm with Ann after the war. She and Ann were always devoted to each other. Ann attended William Byrd High School in Vinton, VA, where she played piano and was on the girls' basketball team. She graduated from William Byrd in 1959, and then went on to attend Mary Washington College in Fredericksburg, VA, graduating in 1963 with a major in chemistry. After college, Ann taught school for two years before going into federal government service as a chemist. She worked for the Bureau of Engraving before joining the United States Geological Survey, Department of the Interior where she remained until her retirement on June 2, 1999 from the Quality Management Program of the NWQL prior to its major move back to the Federal Center. During her career Ann was involved in water analyses and quality assurance procedures. Ann was a well-liked and respected colleague due to her down-to-earth and friendly nature, her good work ethic, and her expertise in the field of water analyses. She served in Washington, DC, Atlanta, GA and Denver, CO, where she ended her career. Ann loved her family, often returning home to Virginia to visit them. Also, she was very fond of her dogs: Banjo, Sweet Pea, and Pete. Ann took great pleasure in painting and growing African violets. She is survived by her close cousin Charlotte, and numerous other cousins. As a

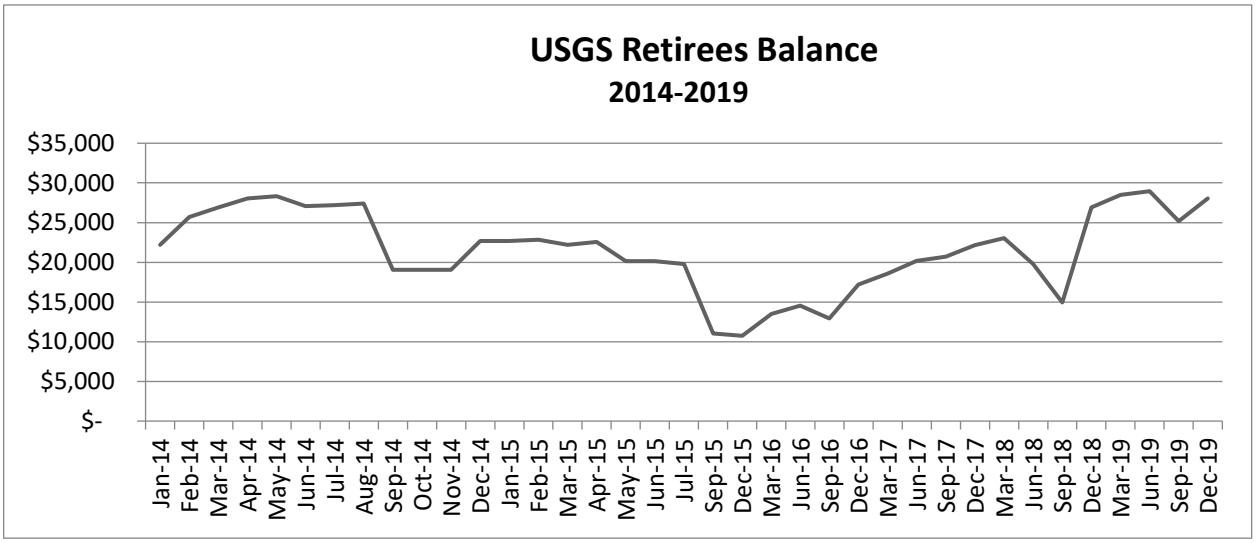
Christian, Ann grew up as a Baptist, and then she worshipped in Presbyterian churches in Atlanta and Denver. Services were held on January 5, 2020 at the Peace Lutheran Church in Arvada, CO. Although she loved Denver and Colorado and her friends and colleagues there, she requested that her ashes be returned to Virginia and scattered around her mother's grave in the family church cemetery on a hill across from the farm where she grew up.

Judith H. "Judy" Wilson, 85, ***(widow of retiree of James F. Wilson)*** passed away on October 9, 2019 at Life Care Center in Cheyenne, WY after living a full and eventful life. Judith was born on January 8, 1934 in Orlando, FL, the eldest daughter of Charles and Leora (Johnson) Holt. She graduated from Randolph-Macon Woman's College in Lynchburg, VA in 1955 with a degree in Art and was a member of Phi Beta Kappa Society. After college, she worked in advertising at Lord & Taylor, NYC. Judith married James F. Wilson, Jr., of Detroit, in Bradenton, FL on March 29, 1958, and moved to Carson City, NV in 1958. She worked in the Nevada State Library, and for the USGS, Dept. of Interior. After moving to Falls Church, VA in 1960, she worked as an office assistant for an employment agency and as a free-lance artist/illustrator. The Wilson's moved to Cheyenne in 1967. Mrs. Wilson worked as a substitute art teacher from 1970-1979. She also worked as an aide in the Special Education Department, at East High School from 1980-1983. She worked part-time at American National Bank before retiring in 1987. She was a member of First Presbyterian Church, the Cheyenne Genealogy & Historical Society, Artist Guild, and was active in traveling for a time. In 2010, she finished her travels by visiting Alaska! She spent many summers at her Ryan Park, WY cabin, and enjoyed researching the history of the area. She also enjoyed painting, photography, fishing, wildlife and birds. She was preceded in death by her husband, Jim, and a grandson, Christopher Hesson. She is survived by a son and a daughter; two grandchildren, and two great granddaughters. Cremation was completed by Wiederspahn-Radomsky Chapel.

TREASURER'S REPORT, FOURTH QUARTER 2019

Treasurer Cathy Hill reports the organization had $28,060 at the end of the fourth quarter, December 31, 2019. Happy New Year everyone! Expenses this quarter included printing of the November Newsletter.

Special thanks for contributions above dues to Lawrence McGreevy and Susan Russell. Many thanks for your generosity.



TREASURERS' YEAR-END EXPENSE REPORT (2018 and 2019)

Expenses	**2018**	**2019**
Qrtly Newsletter	1,790	1,260
Directory	1,502	1,295
Pizza incentive	47	0
PO Box	134	136
State Corp Comm. Renewal	25	25
Scholarships	8,700	4,001
Award plaques for reunion	264	0
Convert old VCR tapes to CDs	0	203
STEP lunch 'thank you'	0	116
Annual Adobe license	155	155
Total Expenses	**$ 12,617**	**$ 7,191**

The main reduction in expenses between 2018 and 2019 is the result of awarding $4,700 less in Scholarships in 2019.
Also, we printed fewer Directories and Newsletters in 2019, saving about $700.

NEW MEMBERS

Grannemann, Norman 'Norm' (16) (Susan) – 2628 Creekstone Trail, Okemos, MI 48864, (c) 517.819.8505, nggranne@gmail.com
Harlow Jr., George E. (19) (Susan P.) – 22318 Old Coach Lane, Henrico, VA 23238-2056, (c) 804.334.2631 (h) 804.740.7472, geharlow1@gmail.com

AFFILIATE

Duffy, Edward 'Ed' (A) (Debbie) – 903 Great Bend Road, Altamont Springs, FL 32714, (c) 407.937.8898, theguy95@gmail.com

AFFILIATE LIAISON

Leenhouts, James 'Jim' (AL) – 520 N. Park Ave., Tucson, AZ 85719, (w) 520.670.3305 (c) 520.668.6348, leenhout@usgs.gov **(Arizona Water Science Center)**
Lovelace, John K. (AL) – 3535 S. Sherwood Forest Blvd. Suite 120, Baton Rouge, LA 70816, (w) 225.298.5481 ext. 3210, jlovelace@usgs.gov **(LA Water Science Center)**

DIRECTORY CHANGES

Douglas, Lois J. (94) – 12377 W. La Grange, Boise, ID 93709-8127 addr
Goss, Richard L. 'Rick' (03) (Sharon) – ***correct middle initial from S. to L***
Goss, Sharon S. (99) (Rick) – 4 Essex Ct., Lake Oswego, OR 97034 addr
LeRoux, Mrs. Edmund F. 'Deannie' (S) – 1251 Arizona Ave SW Apt 216, Huron, SD 57350 addr
Malo, Mrs. Bernard 'Mary Lou' (S) – ***received request to cancel membership***
McCullough, Richard A. (88) (Ruth) – ***received request to cancels newsletter distribution***
Meade, Rober H. 'Bob' (96) – 19800 SW Touchmark Way #184, Bend, OR 97702, (h) 541.312.1714 (c) 303.2411401 potamundi@comcast.net
Rapp, Donald H. 'Don' (94) - remove old phone number 601.749.8406, and **add my new phone numbers** 601.590.1079 and 769.926.2064 – **remove wife's name (Jean), she passed on May 5, 2019**
VanLier, Kenneth E. (80) (Mary) – 1101 Plantation Island Drive South**,** Allegro Apt. 234, St. Augustine, FL, 904.471.7397 – addr phone
Winograd, Isaac J. 'Ike' (05) – 250 Pantops Mountain Road Apt 124, Charlottesville, VA 22911 – addr and ***remove wife's name (Linda) as she has passed.***

USGS/WRD RETIREES WHO HAVE PASSED – 2019*

This list includes the names by membership status: **YY** = retiree's year of retirement, **A** = affiliate, **S** = spouse/partner (includes widow or widower of retiree) and spouses of current retirees, **F** = friend (federal, state or local agency and/or a professional organization; and, **O** = deceased, would have qualified as a member, but was not a member. Some names reflected below were included because information about their passing was received in recently.

Anderson, Mary	S	Mar 16 2019
Anderson, Henry W. 'Bud'	90	Dec 29 2018
Banks, William P. 'Bill'	O	Jun 23 2019
Boning, Charles William 'Bill'	94	Jun 8 2019
Boucher, Phillip R.	O	Nov 6 2019
Boyd, Sara F.	S	Aug 2 2016
Bullen, Thomas D.	O	Sep 7 2018
Burchett, C. Robert 'Bob'	99	Jul 1 2019
Cline, Dorothy	S	Jul 2019
Dolnack, Joan	S	Feb 20 2018
Emerson, Debra L.	S	Oct 28 2018
Fahy, Mike	O	Oct 28 2018
Ford, Edward 'Ed'	O	Mar 1 2019
Geiselman, Joy Ann	O	May 16 2019
Gockel, Daniel J. 'Dan'	95	Oct 14 2019
Gozzi, Fred C.	05	Dec 16 2018
Higgins, Johnna Lee	O	Jul 29 2019
Higgins, Michael 'Mike'	98	Apr 4 2015
Hinds, Alicia	O	Dec 2 2019
Hudson, Rebecca 'Becky'	S	Mar 16 2019
Huffman, Gary C.	O	Jan 5 2019
Larson, Jerry D.	00	Nov 6 2108
Leifeste, Donald K. 'Don'	88	Jan 23 2019
LeGrand, Undine N.	S	May 5 2019
Leveen, Lenora 'Lenny'	S	Feb 4 2019
Long, Keith	O	May 17 2019
Manigold, Douglas B. 'Doug'	94	Jul 26 2019
Martens, Lawrence A. 'Larry'	92	Nov 7 2019
Martens, Rita Mae	S	Jan 12 2019
Matalas, Nicholas C. 'Nick'	95	Aug 16 2019
McElhone, Timothy J.	O	May 26 2019
McFate, Thomas J	O	Oct 5 2018
Meadows, Paul E.	01	Oct 1 2019
Morris, Evelee	S	Mar 9 2019
Morrisette, Patricia	O	Oct 6 2019
Mullen, James R. 'Jim'	97	May 6 2019
Nelson, Lorna K.	S	Dec 4 2018
Nuckels, Winifred	S	Apr 6 2017
OConnell, Delmar J.	92	Jul 8 2019
Paulson, Richard W. 'Dick'	93	Jul 29 2019
Perkins, Laree A.	S	Mar 26 2019
Pickering, Raynard Jackson 'Jack'	94	Oct 29 2018
Rapp, Jean S.	S	May 2 2019
Rice, Charles L.	O	Aug 19 2017
Robinson, Bill Paul	85	Jan 4 2018
Roeske, Rodney N.	O	Jan 9 2019
Rosenau, Jack C.	85	Apr 20 2019
Sauer, Virginia	S	Nov 8 2018
Scott, John C.	95	Oct 3 2018
Smoot, Charles W. 'Charlie'	95	Oct 6 2019
Spieker, Andrew M.	O	Mar 17 2018
Stewart, Anne	O	Jul 8 2019
Stratton, Greg	O	Aug 13 2019
Thomas, Marion V.	S	Dec 28 2018
Thompson, Craig C.	O	Sep 20 2019
Turner, James F. 'Jim'	95	Oct 27 2018
Turner, Raymond M. 'Ray'	O	Dec 9 2018
Wallace, Jane H.	O	Dec 3 2018
Walling, Faulkner B.	80	Mar 12 2006
Watterson, Carol A. 'Ann'	99	Dec 18 2019
Williams, Dian L.	02	Jul 28 2017
Williams, Rod	O	Jun 1 2019
Wilson, Judith H. 'Judy'	S	Oct 9 2019
Zappia, Humbert 'Zap'	O	Oct 9 2018

***Information reflected was gathered from below newsletters:**
2019 = NL182Feb, NL183May, NL184Aug, NL185Nov
2020 = NL186Feb

Geography Matters
Randy Olsen (Retired 2006)

This is the fourth article in this series – the first was mostly background and organization, the second one focused on topographic maps, and the third was hydrography. This article will focus on elevations.

Elevations have been a major feature on topographic maps since the beginning of quadrangle mapping, typically presented as contours, benchmarks, and spot elevations. The contouring on once-over coverage completed in the 1990's was made by photogrammetry using overlapping aerial photographs. Stereoscopic instruments were used by operators to contour the terrain with a "floating" 3-D spot while viewing a piece of real estate contained within the overlap area of two aerial photos. In a few cases, especially in flat terrain, contours were made using field measurements by plane-table surveys. Spot elevations were created by a combination of field surveys and photogrammetry.

In the early 1970's, the research program in what was the Topographic Division at USGS developed an improvised stereoplotter with a mechanism that could profile a stereo model and the operator tried to keep the "floating mark" on the surface as it moved along. Besides orthophoto imaging capability, it had a mechanism with encoders that captured the xyz locations as it moved along. The digital output could then be re-gridded into a new product – Digital Elevation Models (DEM's), accuracy about 15 meters and spacing of the elevation grid at 30 meters. Soon thereafter, what was the Eastern Mapping Center acquired a new instrument called a Gestalt PhotoMapper (GPM) that also produced orthophotos and raw data that could be re-gridded into DEM's. For both methods, the new National High-Altitude Aerial Photography (NHAP) program provided cyclical 5-year coverages of quad-centered photography with stereomodels that were one-half of a quadrangle.

This was an exciting time for those of us that saw the potential of this new DEM product. It didn't take too many years that we started getting complaints from DEM users about inaccuracies. For the profile data, since it went back and forth, the operator tended to overfly ridges and dig into the hillside crossing drainage. So, contour maps made from these data resulted in a herringbone artifact effect. The GPM data had the same issue with hexagons that didn't quite match up with their neighbor or failed to correlate because of monotone ground cover. This brought about the need for a better DEM with 7-meter accuracy that required more time-consuming data acquisition and editing.

I was at the Western Mapping Center in 1980 when Mt. St. Helens erupted. I was involved with a great challenge of not only creating a new post-eruption topo map in several months as opposed to the usual 4-5 years, but also creating before-and-after DEM's of the mountain. An early application of DEM data could do the subtraction math and determine the volume of landmass that left the mountain. It was about 1.5 cubic kilometers and the geologists loved it!

DEM production continued into the early 2000's and had substantial conterminous US coverage. These data sets were available to the public and had a USGS Circular data users guide that described the geographic schema and the data format.

The next evolution of the USGS elevation program was the National Elevation Dataset (NED). It became the flagship elevation product of USGS between 1999 and 2014 as part of the *National Map*. With help from cooperating agencies, the original DEMs were replaced by DEMs created from contours, interpolated into a 10-meter grid interval, thus providing much better accuracy depending on the original contour interval. Once there was national coverage, these data were no longer quad based and reformatted into a seamless data set. The elevation spacing became available in 2 choices – 1 arc-second of latitude/longitude, or 1/3rd of an arc-second. The NED included parts of Canada and Mexico. These data remain available for users through the USGS data distribution options – web-based or the USGS Store.

The most recent evolution of the USGS elevation production is the 3-dimensional elevation program (3DEP). The raw data comes from LIDAR (Light Detection and Ranging). LIDAR uses laser-based technology that is very accurate and dense enough in raw form to "see through the trees", so that a data set in an evergreen forest or leaf-on deciduous trees has a combination of bare earth and canopy elevations. These data can be edited and resampled to sense bare earth, and average distance between bare earth and canopy can yield tree height for forestry applications. In Alaska, the technology of choice is IFSAR (Interferometric Synthetic Aperture Radar) which can create raw data through clouds, a common weather condition that makes LIDAR prohibitively expensive. The disadvantage of IFSAR is that is doesn't see through the trees. Both technologies, however, are far superior than DEMs created from contours on old topo maps. A future conundrum facing the elevation program is sea level rise, affecting the "zero" elevation based on mean high tide.

Australia Wildfires (Received 1/11/2020)

The hot and dry summer with little rainfall has been connected to the occurrence of wildfires in Australia and other areas. A good summary of the conditions can be found here: https://en.wikipedia.org/wiki/Bushfires_in_Australia

"Bushfires in Australia impact extensive areas and cause property damage and have accounted for the deaths of 800 people in Australia since 1851, and billions of animals. In January 2020, it was estimated that over 1.25 billion animals have died in the 2019-2020 Australian bushfire season alone.

Major firestorms that result in severe loss of life are often named based on the day on which they occur, such as Ash Wednesday and Black Saturday. Some of the most intense, extensive and deadly bushfires commonly occur during droughts and heat waves, such as the 2009 southeastern Australia heat wave, which precipitated the conditions during the 2009 Black Saturday bushfires in which 180 people died. Other major conflagrations include the 1851 Black Thursday bushfires, the 2006 December bushfires and the ongoing 2019–20 bushfires.

Bushfires have always been a part of Australia's ecology and environment. Some of the country's native flora have evolved to rely on bushfires for reproduction and fire events have been an interwoven part of the ecology of the continent for thousands of years. Indigenous Australians used to use fire to clear grasslands for hunting and to clear tracks through dense vegetation; however this was only in periods of high rainfall and in very small grassland zones bordering desert."

USGS has been able to aid in the compilation of data about the location and nature of the fires, not only in Australia but also in other areas, such as Tasmania. See the following for more information. https://www.usgs.gov/centers/eros/landsat-captures-images-australian-blazes?qt-science_support_page_related_con=0#qt-science_support_page_related_con

More information on sustainable water resources can be found here:
https://sites.google.com/site/sustainablewaterresources/

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Biofuels (Received 1/4/2020)

https://en.wikipedia.org/wiki/Biofuel

"A **biofuel** is a fuel that is produced through contemporary processes from biomass, rather than a fuel produced by the very slow geological processes involved in the formation of fossil fuels, such as oil. Since biomass technically can be used as a fuel directly (e.g. wood logs), some people use the terms biomass and biofuel interchangeably. More often than not however, the word biomass simply denotes the biological raw material the fuel is made of, or some form of thermally/chemically altered *solid* end product, like torrefied pellets or briquettes. The word biofuel is usually reserved for liquid or gaseous fuels, used for transportation. The EIA (U.S. Energy Information Administration) follow this naming practice. If the biomass used in the production of biofuel can regrow quickly, the fuel is generally considered to be a form of renewable energy.

Biofuels can be produced from plants (i.e. energy crops), or from agricultural, commercial, domestic, and/or industrial wastes (if the waste has a biological origin). Renewable biofuels generally involve contemporary carbon fixation, such as those that occur in plants or microalgae through the process of photosynthesis.

Some argue that biofuel can be carbon-neutral because all biomass crops sequester carbon to a certain extent – basically all crops move CO_2 from above-ground circulation to below-ground storage in the roots and the surrounding soil. For instance, McCalmont et al. found below-ground carbon accumulation ranging from 0.42 to 3.8 tonnes per hectare per year for soils below Miscanthus x giganteus energy crops, with a mean accumulation rate of 1.84 tonne (0.74 tonnes per acre per year), or 20% of total harvested carbon per year."

Some of the work carried out by bureaus of the Interior Department can be found at:
https://eros.usgs.gov/doi-remote-sensing-activities/2016/usgs/remote-sensing-ecology-biofuels-biomass-carbon
"Biofuels derived from cellulosic grass, such as switchgrass, have the potential to provide domestic biofuels with minimal adverse effect on food production. USGS scientists are seeking to identify ecological conditions that may favor switchgrass production over conventional agriculture crops, particularly corn. The crop-grassland boundary in eastern

Nebraska has been identified as a potential area for effective and sustainable switchgrass production; switchgrass production under future climate conditions is predicted to be similar to or greater than current production. The researchers developed a model that predicted switchgrass productivity and grassland biomass, and used the results to quantify ecosystem services and cellulosic biomass benefits from converting small portions of sub-marginal, high relief crop areas to switchgrass, which can serve both as biofuel sources and waterway buffers."

A USGS technical paper on this subject can be found here:
https://sites.nationalacademies.org/cs/groups/pgasite/documents/webpage/pga_053930.pdf
However, more research has been carried out on how to identify land suitable for use in producing biofuel sources.
See https://www.usgs.gov/centers/eros/science/identifying-lands-suitable-biofuel-feedstock-crops-dynamic-modeling-ecosystem?qt-science_center_objects=0#qt-science_center_objects

"Demand for biofuel products is expected to increase as the world seeks alternatives to fossil fuels. Currently, ethanol produced from Midwest corn is the most common biofuel product in the United States. The negative environmental effects caused by corn-based biofuel development include soil erosion, water quality impairment from pesticides and fertilizer, and demand for water for irrigation. The feedbacks of these environmental effects may cause local ecosystem changes. Biofuels produced from cellulosic feedstocks such as grasses, forest woody biomass, and agricultural and municipal wastes have lagged behind corn-based ethanol because the biochemistry of conversion is more complex. As the technical challenges are anticipated/predicted to be met in the near future, demand is expected to increase for cellulosic feedstocks as inputs to the refineries that produce biofuels. Our goal is to identify grasslands and marginal croplands that are suitable for growing cellulosic feedstock crops such as switchgrass (Panicum virgatum) while minimizing impacts on food production."