



alexnav@asu.edu

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Colleagues and Friends:

No one would disagree that this has been a year like no other, with COVID and politics, and all the more so for me with my move to Arizona. I am adapting and thriving- what choice is there? So here is a list of mostly good things.

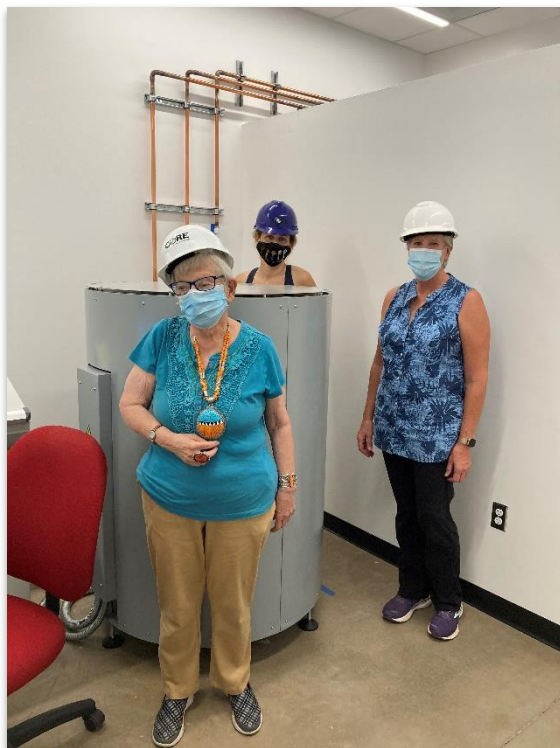
- I, my colleagues, research group and friends have mostly stayed healthy. ASU is doing an excellent job with free saliva testing with short turnaround, as well as strict masking and distancing. Though we had some in-person classes, campus is mostly empty. What happens next semester is not yet clear. I am disgusted with our current lack in the US of unified COVID policy and the factors that keep politicizing a public health issue. The American penchant for individual rights, good for the most part, shows its weaknesses in the pandemic. I will get the vaccine as soon as I can and I got my flu shot in October.
- The election is over. As a recent import, I helped turn Arizona blue.
- Honors continue. I was elected Distinguished Life Member of the American Ceramic Society. The meeting was online so in my short acceptance speech I said that I was sorry we could not celebrate in person but being a distinguished life member was better than being an extinguished one, which got good virtual laughs. We also got a best paper award. The former is for a life's work, the latter for present work, nice balance. An ex group member also got a best presentation award at an international meeting. I was ranked 25th (and probably the only woman in the top 50) in materials science in "Updated science-wide author database of standardized citation indicators," published in PLOS BIOLOGY in October 2020. I was elected a full member of Sigma Xi, the scientific honors society. Our work was featured on NSF Science Nation and is still on their website.
- I have been working mostly from home, which I and the dogs enjoy. I am privileged to have a nice house, my computer is set up with a view of the expansive back yard, and I work efficiently and peacefully. Paradoxically, COVID has given me time to think creatively and some very interesting new scientific ideas and directions are emerging. We are learning how to use Zoom and related platforms to advantage, and have several weekly "think tanks" that involve people from ASU and all over the world. It no longer matters if you are in the next office or on the next continent. I have been much more in contact with friends and acquaintances. *Remember physically distant does not mean socially or intellectually distant.* Though I miss the personal contact, as we all do, I am not lonely.
- Mostly I get groceries delivered, and I cook and eat well, lots of fruit and veggies and much less junk. With more attention to healthy eating, I have stabilized at about ten pounds less than in March. I continue long walks in my neighborhood, which is mostly empty. Once in a while I go to the desert and mountains on back dirt roads with a friend. No people there - no virus there. Though the urban areas in Arizona continue to grow, beautiful wilderness and semi-wilderness remains aplenty and near. Glad to be back in Arizona.
- The Materials of the Universe Center (MotU) is progressing well. I taught a seminar course in it last spring and plan to do another one this spring. Collaborations and proposals are emerging. Hongwu Xu from Los Alamos National Laboratory will be joining ASU as a professor in the School of Molecular Sciences (SMS) and MotU. He works in thermochemistry and crystallography of nuclear and geochemical materials. The two of us and our two research professors, Sergey Ushakov and Kristina Lilova, provide a major effort in thermodynamics. We hope to complement this with increased efforts in high pressure and other "extreme conditions" work relevant to both materials and planetary science. We were planning on additional MotU recruitments in SMS this year but have not yet been given the go-ahead due to budgetary caution. The

University actually saw a small increase in enrollment in the fall (with fewer international students, about the same number of domestic on-campus students, and a large increase in online degree program students), so ASU is better off than many universities, but worried about spring semester enrollments. My own research group has four new PhD students, two of whom have overcome visa challenges, the other two were already in the US. Their first semester is loaded with coursework but they will get started in serious research in January. I also have attracted several wonderful undergrads to the group.

- Our laboratories are slowly coming together. The renovations have been excruciatingly slow, way beyond any reasonable excuses. Can ASU really be world class in the face of such inefficiency and lack of control? *ASU shame on you !!!!* However, our two AlexSYS calorimeters are up and running and we are in the last throes of optimizing their operation. But other labs are still under construction, 18 months after I accepted the position. We do have some temporary space and are using common facilities for synthesis and characterization, but there is no doubt research is compromised. We have been writing papers on work completed before we left Davis. We have one PNAS paper on iron sulfides based on our first high pressure synthesis work at ASU. Speaking of leaving Davis, we were fortunate to have moved equipment from there in late February, just before the lockdowns. That move was not without its problems and the UC Davis administration made clear that they valued short term money from us more than they valued long term good will. Unfortunately moves often end up like divorces, seldom without some rancor. We also have bought a lot of new equipment, at ASU, much of which is still crated. The good news is that both ASU and Davis now have well equipped calorimetry labs and I continue to interact with selected friends and colleagues there. Still overall, comparing my moves from ASU to Princeton (1985), Princeton to Davis (1997), and Davis back to ASU (2019), the last was by far the least smooth. A sign of the times perhaps.
- I sold my house in Davis at a very good price last December. Real estate is going crazy in both Davis and Tempe. People are moving out of more crowded places, and I am glad to be out of CA. The realization that one does not have to live near work as a professional is a change that was coming, but COVID accelerated it. This change also alters the demographics and politics of initially conservative and overwhelmingly white small towns as a more diverse group of people move there, as has happened in the Phoenix area. This is good, but on the flip side, starter homes are getting more out of reach to more than half of society. COVID certainly underlines the disparity, in so many respects, of rich and poor (with concomitant racial, educational, medical, and social differences) in the US. I hope that we remain aware of these problems, and of related issues of law enforcement and police brutality, long enough to do something. The optimist in me says we are seeing social change of a magnitude not seen since the civil rights movement of my college days. The pessimist in me doubts real change will occur. The liberal in me rejoices; the conservative in me wants to protect my life style, neighborhood, stock portfolio, and tax advantages. The reality is – no pain no gain – but how things will evolve, who knows. I have been reading the Federalist Papers and Civil War history to better understand other times of change. The first order conclusion is that human nature remains the same; Homo Sapiens ain't that sapiens and the milk of human kindness sours easily.
- I have not traveled since February and am not ready to until I am vaccinated. I find virtual conferences with pre-recorded talks quite useless. Action at meetings is in the hallways, bars and restaurants - chat rooms do not work. To me the ideal “new normal” would be to travel 30-50 % of the amount I did before the pandemic, and to work from home 30-50 % of the time. The big conferences of 10-15 thousand people were too expensive and unpleasant anyhow and I doubt they will return. Again, times change.
- Just before New Year's 2020, I adopted a male lab mix pup about a year old, now about 70 lb and a dark yellow to brown. Tahoe is irreplaceable and it was time to move on. Sunny is a mischief maker, full of energy, or as we say, piss and vinegar, very loving and still very needy of love and reassurance. He was a stray picked up by animal control in a small town at the edge of an Indian reservation, probably did not have a good start in life but now is a happy boy. Redi, Winnie, and Luna are fine.

Happy holidays and may 2021 bring good changes. Stay in touch.

Alex



Setting up new Alexsys calorimeter



Winnie, Redi and Sunny going out to vote



**ASU campus near my building.
Empty because of COVID**



Wildflowers in mountains



Wildflowers in desert



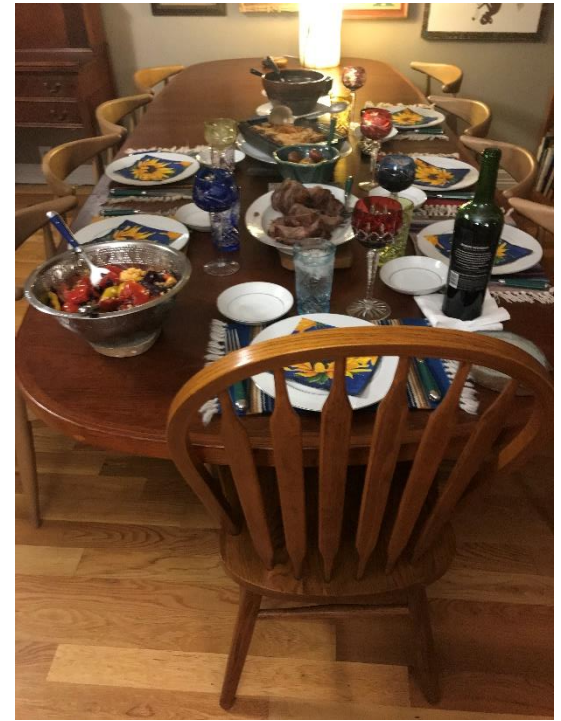
Continue undaunted in 2021



From my yard



Alexsys is running



Hope we can do this soon again



Desert last April



Luna poll watching