First Report from Steve Feller on Sabbatical 2016

Greetings all from the Rutherford-Appleton Lab near Oxford in England. This is the first of a small series of reports from my spring 2016 sabbatical. This part of the sabbatical is a two month trip to Florida (to see friends), England (neutron scattering) with Dr. Alex Hannon), Innsbruck, Austria (learning to make borate single-phase crystals with Prof. Hubert Huppertz), and Athens, Greece (vibrational spectroscopy and visiting long term glass science collaborator Dr. Stratos Kamitsos).

In Florida I just had fun for the better part of a week. We went to Vero Beach, Singer Island near West Palm Beach, and Melbourne near Cape Canaveral. Here we are by the Atlantic Ocean on Singer Island:

Last Friday we flew to London and were met Saturday morning by my scientific host Alex Hannon of the Rutherford-Appleton lab. After a nice lunch at his house he drove Barbara and I to our apartment in Blewbury. Blewbury is located about 3 miles from the lab. It is a lovely Oxfordshire village. The first night we had a wonderful meal in a local pub—I had mushroom and pepper stroganoff over rice—delicious! Tonight we are going there for quiz night.

On Sunday we went to Reading (15 miles) to visit friends and do necessary shopping.

Monday Alex picked me up in Blewbury and we went to the lab where I've been each day since. This is a superior lab and it contains a number of useful large-scale instruments including a spallation neutron source with specialized detectors to study glasses and one of the world's best synchrotrons for the production of intense x-rays. The synchrotron is brand new and is known as diamond and has similar capabilities to the advanced photon source (APS) at Argonne national lab.

So far we have been reviewing neutron and other data from previous experiments on many glass systems: bismuth germanates, alkali borates, lithium silicates, and various tellurites (Brittney Hauke knows this since she is sending samples here in the near future). Planning for new experiments has started as well. New projects may include: bismuth silicates (surprisingly little is known and no neutron work has been done), carbon dioxide in glass, and others.

The picture shows me at the entrance to the neutron scattering area known as ISIS. The unfortunate coincidence of the name with the group in the Middle East is causing some difficulty for this lab in terms of mail service, for example! This lab has been known as ISIS for many decades. It is a world-wide collaboration for the peaceful use of science. I can tell you I have learned a lot already as I again see things through the prism of this great technique. After I come back to Iowa Coe students will continue to travel here for experiments with Alex and our collaborators Prof. Emma Cruddace and Prof. Diane Holland. This is what Brittney did last summer with Emma at Nottingham.

On Monday I will travel to Bambury to meet up with Diane and Emma to review our collaborations. This is in between the Rutherford Lab, Univ. of Warwick at Coventry where Diane is, and Univ. of Nottingham where Emma is. Bambury is where Emma's parents live. On Tuesday I travel to Oxford to visit St. Anne's College, one of the constituent Oxford University colleges. St. Anne's will be the site of the next borate meeting in July 2017. I am happy to report that I will be honored at this conference for my life's work with Mario and our students in this scientific area. See http://www.borate-phosphate.sgt.org/ I will send pictures of this Oxford College in my next report to the Coe group to excite our students about going to this meeting. It will be a great thing for Coe as well.

Barbara is enjoying the trip as well. She is writing children's stories, embroidering, and reconnecting with many friends from our past sabbaticals and trips to England.

It is my goal in this sabbatical to bring new research directions and opportunities to our students

I'll write again in a week or two.

Steve Feller