Project Atmosphere 2017

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In late May, I found out that I had been selected by the Canadian Meteorological and Oceanographic Society and Canadian Geographic Education as the Canadian participant at Project Atmosphere. Project Atmosphere is a Summer Teacher's Workshop offered by the American Meteorological Society at the National Weather Service Training Center in Kansas City, Missouri for K-to-12 teachers in the USA. For 2 weeks in JULY, 20 teachers from all over the US, one from Egypt, and I participated in a very intensive professional development course designed to teach atmospheric content.

The location for our workshop was the National Weather Service Training Center (NWSTC). The workshop location was primarily at the meteorological training facility as well as at a Weather Balloon launching station. Both locations provided all participants with tremendous access to working personnel at the office to learn and see the day-to-day operations of weather forecasting on a daily basis. There were computerized models displays on forecasting and question and answer sessions with the workers in the field. This access gave us all insight in the daily challenges weather forecasters face in predicting complex moving weather patterns around the US, Canada and around the world. Our primary focus was the US during our stay there with a few Canadian references thrown in.

During this intensive two weeks, we learned from various experts, including National Weather Service head Dr. Louis Uccellini (on left) who makes it a point every year in his busy schedule to spend time with all of the participant and talk to us about the National Oceanic and Atmospheric Administration (NOAA), how they are trying to make the US a Weather-Ready Nation, the importance of weather and the value of teachers in educating the next generation of forecasters. The workshop was essentially an 8-week grad course from Cal U Pennsylvania compressed into 2 weeks. It was a huge learning challenge for me and all participants but we persevered and completed it.

Once done the workshop, the expectation is to hold two workshops to other teachers to help provide them with some of the same learning materials we did in our two weeks in Kansas City, MO. The goal is to help educate more teachers in weather concepts and help teach our students to be weather aware and how challenging it is to forecast weather. As well, once we complete this task, we will receive a grad credit for a meteorology course. All for free! I can honestly say after having done this workshop, I have newfound respect for what weather forecasters do to help keep us safe and warn us of potential disasters so we can prepare for them to get out alive.

We also gained knowledge from across the USA, from meteorological experts in the field, such as Space weather, hurricanes, tornadoes, weather bombs, snow and ice storms and more. Instruction also came from professors at Cal U, and we were given modules with student activities to apply the weather knowledge in the classroom. One particularly hot and humid evening, we had a field trip to the National Weather Service (NWS) Topeka, Kansas weather station to launch a weather balloon and learn from the front line workers there how the balloons play an intricate role in daily forecasting. Everyday at 6:00 pm a balloon is launched to gather data that is used to make their forecasts. It was a tremendous learning experience, since I have never viewed a weather balloon launch before. The next day we used the raw data collected by the balloon and analyzed it with our professors to see what could be on the horizon.

Huge highlights for me were Bob Rutledge from Boulder, Colorado, session on Space Weather and Impacts on Critical Structures on Earth and in space and Barbara Mayes Boustead, Climate program manager at NWS

forecast office Nebraska, dissertation on the historical accuracy of the weather in Laura Ingalls Wilder's book "The Long Winter"; these showed me that we could do cross curricular tie ins with other subjects and not just learning about weather in science, as we demonstrated during the peer-led learning where our teams showcased a variety of take-home suggested activities for our classrooms.

Each day we had a weather briefing with Jerry Griffin, in the Forecast Operations Programs, at the NWSTC. Each afternoon began with "How's the Weather today Jerry?" and we would get into our 45-minute discussions on what took place that day and the night before. In these briefs, we observed radar and satellite imagery and learned to interpret surface station data and 500-millibar charts. We also followed storm systems, esp. hurricane tracking as they moved through the Pacific as it was the start of the season. He also gave us many useful and wonderful online resources on the NWS site that we could use to forecast weather with our students.

Although I am not a high school teacher, I was able to gain an understanding of some of the concepts my junior high students will be learning as they leave me and move on. It gave me an appreciation on how to prepare them for their journey to high school. The best was seeing the new GOES-16 Satellite that was not fully operational yet, but being slowly used in forecasting. The clarity of showing the different fronts and their temperatures was so stunningly clearer compared to current satellites being use, a real game changer for forecasters in being able to better predict weather phenomenon.

I loved being able to showcase the Canadian Education system and our practices and, as well, meeting so many fascinating educators. I gained new friends after the two-week stay and we continue to stay in touch and collaborate on our group Facebook page. I also enjoyed having the weekend off between the two weeks to explore Kansas City with some of the participants. I was able to see the Farmers Market and get great food to cook and share with other participants while I was there, see the National WWI Museum, and I went to a Kansas City Royals baseball game and now add that to my list of MLB fields I have watched games in (my goal is to say I have seen a game in all the stadiums in MLB. So far I am at 8!)

I am looking forward to using the new skills and resources obtained during this workshop to create new professional development opportunities for teachers as well as better integrate atmospheric content into class-room projects I develop with teachers. In the end, we learned how to be READY, RESPONSIVE & RESILIENT. The modules presented are engaging and meaningful activities that I will be able to share with teachers as well.

I would like to thank the workshop faculty for all their help over the two weeks. As well as, Wendy Abshire, Abby Stimach, Jerry Griffin, Bob Weinbeck and Chad Kauffman who did super job of taking care of us, sharing their knowledge with us, being light hearted, keeping us on task, organized and getting us prepared to share what we've learned with other teachers when we get home. Also, HUGE BIG HIGH 5 and THANK YOU to the Canadian Meteorological and Oceanographic Society and Canadian Geographic Education, the educational committee of The Royal Canadian Geographical Society, for continuing to support Canadian participation at these workshops.

Maria teaching about the Canadian education system, space learning and weather.

Jerry Griffin teaching about GOES 16.