President's Message

Serving as SHAP President provides many unique opportunities. Those include working with the board and extension personnel on the convention program, preparing for the farm show, and also helping to decide what research and extension projects to fund. Recently, myself and several members of the Research Committee had a chance to travel to State College and observe some of the research being conducted first hand. We were fortunate enough to meet with Dean Roush, Dr. Paul Heinemann, Dr. Long He, and Dr. Daeun Choi to hear about their work thus far, and tour the new Agricultural and Biological Engineering building on campus.

As many of you are aware, Dr. He is based out of FREC where the focus of his work has been on robotics and sensing. Dr. He discussed some of his work on robotic pollination, green fruit thinning, and pruning. No, I am not saying that robots will be in the orchards this winter to prune our trees, but it is fascinating to see how the work Dr. Schupp did several years ago to identify four "simple rules" to follow when pruning could be adapted for a computer program to use for the same task. This is a perfect example of cross specialty research where both engineering and pomological research is needed to obtain a desired goal. Dr. He also showed us the work he is doing on sprayer efficiencies. One aspect that I found very interesting was his work on "air inlet technology." With this work, Dr. He reduced the size of the air inlet on the sprayer and thus reduced the volume of air that was being discharged. While many times growers want the most air they can get to achieve thorough coverage, with new smaller canopies, high air volume may not be necessary. This could be especially important with the applications of thinners or plant growth regulators where blow-through to the next cultivar over could have negative consequences.

Dr. Choi, whom some may be less familiar with, is based on campus at University Park. Dr. Choi presented her work on yield estimation and fruit size detection. This is an area of research that seems to be generating interest from both growers and packers. Imagine being able to capture images of the fruit right before harvest, and knowing how many bins will be needed for that block. Or even to know the size distribution before packing or pre-sizing to better match that fruit with the orders that are coming. She is able to accomplish this by having a motorized stand with three cameras attached to it travel down the rows taking pictures of all the fruit. Side note; the cart with the cameras on it stands about 8 feet tall, and it is somewhat funny to watch as it bounces down the rows. These pictures are then uploaded to a computer to determine the size of the apples. To check the accuracy of the data that is being collected, Dr. Choi and her team, then go out and physically count and measure the apples. When the actual counts are compared with the image data, they found they are able to achieve a 92% accuracy rate. As we move forward and the technology gets even better, it is safe to assume that the accuracy rate will increase as well.

I would like to thank Dean Roush and Dr. Heinemann for taking the time out of their schedule to host us for this meeting. It was wonderful to receive updates on some of the research projects that SHAP has helped to fund. For more information on these and all of the other research projects, please keep an eye out for when the annual reports are published in the PA Fruit News.

Ben Keim
SHAP President