



May 26, 2015

### What might Kearney look like in 2065?

Fifty years from now, I believe you will be growing more drought-tolerant plants in the San Joaquin Valley, since you are probably facing the same water issues that are plaguing us today. We are at the forefront of genomics today and I envision that you will understand gene x environment interaction and how to tailor plants to better adapt to the environmental conditions that you will be facing in 50 years. You will understand how genes interact with each other and you'll be able to create adaptable plants to grow food for human consumption. You will understand human nutrition better and how important eating of a diverse diet will be to overall health.

Science in 2065 will move faster than it does today. It takes anywhere from 8-12 years to produce a plant hybrid that can get to a farmer's field with good yield and biotic and abiotic stress resistance. I can see the day when new hybrids, adapted to various environments, will be available every year based upon our understanding of genomics and our ability to rapidly construct plants to meet our needs. Plant systems will be more regional in scope, since now we tend to produce hybrids that can fit across the whole of the United States. You'll tailor plants to meet regional differences in climate, producing high yielding, efficient plants that will feed people with less inputs, especially less water.

Your use of insecticides and herbicides will be less toxic and more targeted to weeds and specific insects. As tools for genomics become more powerful, you'll use them to help create less toxic and more efficient tools for protecting the plants to ensure greater yields to feed the growing world population.

Your textbooks will all be electronic and updated real-time to reflect the rapid advances in science. You'll be able to see, in 3-D, how plant systems function, how genes work, and what happens when you turn a gene off or on and the cascading effects of those actions. Plant breeding will be a whole new science with tools that we, in 2015, can only dream about. You will be able to respond to climates and situations quickly and efficiently and will be better able to cope with our food and nutrition needs.

In 2065, Kearney will still be providing farmers with new technologies and science, albeit through delivery mechanisms that will be different than today. Gone will be the smart phone and computers of today, replaced with real-time, holographic communications demonstrating new plants and agronomic practices. Using the same communication technologies, farmers will ask in real-time for plant diagnostics and they will be able to quickly address those issues with real-time delivery of nutrients, insecticides, and pesticides through irrigation systems tailored to each farm operation.

I'm excited about the future and hope that my son and grandchildren will benefit from these new and exciting technologies to create a better world to live in.

A handwritten signature in blue ink that reads 'Jeff Dahlberg'. The signature is written in a cursive, flowing style.

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Current Director of KARE