

## **“Evolution of Aquaponics over a Long Career”**

The aquaponics world is often considered a “Small Club”. Only a handful of Ph.D. awards have been given to aquaponic researchers around the world. While the integration of fish farming and plant culture has been practiced throughout history, the commercialization of the industry is still in its infancy. Attempts at commercial production across the US have led to more failures than successes. Richard “Charlie” Shultz has specialized in aquaponics, the integration of fish culture and hydroponic plant production, for 30 years. His career has involved research, teaching and extension during that time at many schools including Virginia Tech, University of Georgia, University of the Virgin Islands, Kentucky State University, Lethbridge College (Alberta, Canada) and now Charlie serves as Lead Faculty of Controlled Environment Agriculture (CEA) at Santa Fe Community College. From 2015-2016 Charlie ran an aquaponics farm in San Marcos, TX with one of his former students. Throughout Charlie’s career, he has seen the industry evolve and research areas increase rapidly. Opportunities for students abound and publications are increasing in number each year. Students use closed-loop systems like hydroponics and aquaponics as an ideal testbed to study variables of interest. Meanwhile, more colleges want to set up programs in these areas. CEA facilities allow for safe food production, with the potential to grow food in urban environments, close to markets. Water conservative technologies, like aquaponics will be part of the landscape of food production into the future and this seminar will touch base on many of the positive attributes of Aquaponics, while we try to meet a growing demand for food globally. This seminar is not intended to be a “How to Do Aquaponics”. This seminar overviews a long career in aquaponics and will introduce those in attendance to some leading researchers and references to guide those interested in getting involved more in our “Small Club”.