

YOUNG PROFESSIONALS 2022: Part 2

The Next Generation in Cryogenics and Superconductivity

This feature introduces outstanding young professionals (under 40 years of age) who are doing interesting things in cryogenics and superconductivity and who show promise of making a difference in their fields. Debuted in the Summer 2006 issue, the feature has presented many young persons whom we are proud to see have indeed lived up to that promise.



Eric O'Connell, 31

My educational and professional background: I earned my BS in Mechanical Engineering in 2012

from the University of Massachusetts Dartmouth.

How I got into cryogenics: My introduction to cryogenics was somewhat of a coincidence. For my senior capstone project in college, my team and I designed a high temperature, magnetic thermal annealing oven used for processing silicon wafers for semiconductors. This experience with high vacuum environments and heat transfer led me to Vacuum Barrier Corporation. During a facility tour, I was exposed to the everyday uses of cryogenics in the food and beverage industry – from utilizing the expansion of liquid nitrogen when vaporized to pressurize water bottles, to purging food containers, and to increased shelf life. My interest was sparked. I joined the Vacuum Barrier engineering team in 2012, just a few weeks after graduation.

My mentor(s) and my experience with them: Jack Ross, vice president of engineering, and Erik Showers, product development manager, have both been excellent mentors over my almost ten years at Vacuum Barrier Corporation. With over 50 years of cryogenic experience, they have been great professional resources every step of the way.

My current company/position: I am a mechanical engineer at Vacuum Barrier Corporation.

Awards/honors I received: I placed first in my Senior Capstone Project.

Some of my contributions to the cryogenic field: At Vacuum Barrier Corporation, we strive to provide the highest quality products and constantly aim to improve our liquid nitrogen transfer and injection equipment. Recently, I led the effort to design and implement a high pressure cryogenic static seal on our main line cryogenic piping connections. The cryogenic seal significantly decreases the heat loss at these connections and improves the efficiency of the entire piping system.

What are the most important developments in cryogenics? The COVID-19 pandemic has proved that liquid nitrogen can benefit various industry sectors more than ever. Cryogenic preservation using low pressure liquid nitrogen is vital to preserving many medical materials including vaccines, blood and biological tissues.

What advances do you hope to see in the future? Everyone has experienced how vulnerable supply chains are, currently and over the past few years. Inerting fresh food and drink packages extends the product shelf life significantly, allowing products to survive transit through today's delayed supply chains. Expanding liquid nitrogen applications throughout the food and beverage,

biotech and pharmaceutical industries benefits end customers greatly.

Where can readers find out more about your projects? www.vacuumbARRIER.com