Former Navy SEAL Sets Sights on Ag Career

by Phil Smith

California State University–Fresno (Fresno State) student Sean Day, a former U.S. Navy SEAL, was selected for a Pathways Internship with the USDA-NRCS' Soil Science Division earlier this year. The USDA’s Pathways Program provides students with opportunities to explore federal careers while being paid for the work performed. Day is a highly motivated senior pursuing a B.S. in Plant Health. After serving nearly 11 years in the Navy, Day set his sights on getting a degree in agriculture and starting a career in an agricultural related field. He has aspirations of working as a USDA-NRCS soil scientist in Tucson, AZ and even at NASA, as he always has had a great curiosity with space exploration. Should we ever colonize Mars and start farming it, Day wants to be there with his boots on the ground.

Day, having limited experience in agriculture, moved to California’s San Joaquin Valley in June 2015 and enrolled at Fresno State University to study in one of the nation’s most productive agricultural regions. He moved to the area with his wife, Theresa, after she graduated from the University of Arizona’s College of Medicine and was accepted into the University of California–San Francisco Family Medicine Residency Program in Fresno. While taking Dr. Sharon Benes’ Introduction to Soils course, Day was introduced to Hanford Soil Survey Leader Phil Smith while on a soils field trip for the class. Day and Smith connected, and Day’s curiosity for soils began while describing a soil profile with Smith. When the Pathways Internship was advertised, Day seized the opportunity to begin a career he knew he would love and he applied for the position. On 29 May 2018, he reported for duty at the Hanford Soil Survey Office.

A native of North Wales, PA, Day enlisted into the Navy as a Seaman Recruit following graduation from North Penn High School in 2002 to follow in the footsteps of his older brother Mike, who was also a SEAL. He achieved his lifelong goal of graduating from Basic Underwater Demolitions/SEAL Training Class 246 in 2003. Soon he was assigned to SEAL Team Two in Virginia Beach, VA. As a Special Operations Combat Medic, Naval Special Warfare

While still in the military, he began to enjoy growing fruits and vegetables. Day decided in 2013 to transition from military life into civilian life so he could follow his new passion, agriculture.

SEAL to Spud Researcher

In addition to taking coursework, he is conducting undergraduate research at CSU-Fresno by conducting his own study on the effects of organic seed treatments and irrigation frequency on the yield and quality of potatoes in field conditions. Day used sulfur and diatomaceous earth seed treatment in combination with two irrigation schedules to prevent common scab from forming on the skin of tubers. Typically, growers will lower the field into the 5–5.5 range to prevent common scab. Day’s research may offer an alternative approach that allows growers to grow potatoes in more neutral quick turnaround on crop rotations. Further testing to see if either irrigation schedule is better at different rates, despite getting the same amount of water during a week. If his hypothesis is correct, he may be able to grow potatoes in a more sustainable way while increasing profits.

Partially inspired by the movie The Martian (2015), Day chose potatoes as the focus of his research. Potatoes have many qualities that make them an excellent crop choice, especially for subsistence farmers, as potatoes produce a large amount of calories relative to the amount of land needed to farm them and do not require refrigeration for storage. Tubers also reproduce asexually, making them a viable choice for regions with few insect pollinators. Day believes these same traits that made potatoes so successful on earth could also fuel extraterrestrial exploration.