

AQUASIST

The concept for the Aquasist technology was originally created by Kylie Halbert, a Mechanical Engineering student at Florida State University at the FAMU-FSU College of Engineering. Kylie has a passion for helping those who are disabled as well as working with Non-Profit Veteran Organizations. Kylie brought her ideas to a fellow mechanical engineering student, Dominic Balistreri, and the two founded Aquasist. Kylie and Dominic also enlisted two other mechanical engineering students named Kevin Nicholas and Ebony Luster to help found the company and develop the technology.

Aquasist is on a mission to give everyone equal opportunities in life, regardless of paraplegic disabilities. So many new technologies exist to enable paraplegics to participate in activities that they never dreamt possible. Paraplegics have the ability to participate in sports and recreation such as basketball, volleyball, paddle boarding and so much more, yet nothing has been created to address SCUBA diving and snorkeling. Kylie witnessed first-hand the issues faced by SCUBA diving paraplegics during her time in the Florida Keys with Combat Wounded Veterans Challenge. After seeing the veterans struggle to enjoy being underwater, Kylie knew that with her mechanical engineering background she could do something to address the issues. There are seemingly endless reasons why it is much more difficult for paraplegics to dive than those who have full mobility. Aquasist will develop a product that will identify and fix the majority of problems paraplegics face while underwater. More specifically, Aquasist will serve paraplegics that still have use of their arms and do not have spinal cord injuries higher than the C8 nerve. In the United States alone there are 250,000 people that suffer from spinal cord injuries with 52% being paraplegic and worldwide there are 3.4 million paraplegics with the average age being only 28 years old.

The core of the Aquasist design consists of a custom wetsuit that includes an adjustable float, added zippers and buckles along the legs that fasten the legs together. The adjustable float allows the diver to adjust their body's position in the water while the added zippers along the legs help divers dress themselves. Joining the legs together greatly helps the diver control their legs as one unit. Paraplegic divers using Aquasist no longer have the need for help underwater from a dive buddy and are able to enjoy all the freedom SCUBA diving and snorkeling has to offer. Some examples of use cases for Aquasist are certified paraplegic SCUBA divers, paraplegics interested in becoming SCUBA dive certified, paraplegic snorkelers, underwater professionals, dive charters, dive instructors, dive shop owners, rehabilitation centers, the military and non-profit veteran organizations.

Aquasist will go to market in one of two models: Direct Production and Sales, or Partnered Commercialization. Via the direct route, Aquasist would hire a full production team, set up a manufacturing facility and sell directly to their end-users. Under a partnered commercialization mechanism, Aquasist would license the rights to a pre-existing scuba company and partner with a third-party manufacturer to utilize pre-existing channels. If Aquasist wins the InNOLEvation Challenge, the prize money would be used to help finish filing for a patent and conduct more testing and modifications to the current prototype. Moving forward, Aquasist will continue to develop the prototype and participate in other start-up company competitions such as the upcoming ACC InVenture challenge and the Innovation Park TechGrant competition.