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How Donald Long moved from homelessness to being a top student researcher at SUU

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From left to right:, Dr. Frederic Covedich, Donald Long, and Dr. Robert Eaves

How Donald Long moved from homelessness to being a top student researcher at SUU

By Nikki Koontz

From living on the streets of Los Angeles to graduating top of his class, Donald Long, a first-generation student, says Southern Utah University gave him a second chance.

After graduating from high school in New Jersey, Long joined the Air Force branch of the military from 2000 to 2004. There, he learned the value of hard work and loyalty. Stationed in Kansas for most of this time, he discovered a love for personal training and fitness, which kept him in Kansas working at a local gym until 2009. Deciding to leave his possessions behind in Kansas, Long followed his dreams of personal training to California.

Long lived in what he calls a “scary, bad neighborhood” while in California. Working as a personal trainer at a local gym, he was finally feeling good about his decision to leave Kansas until he got involved in a neighborhood fight. During the fight, Long was stabbed inches away from his spine and hospitalized, lucky to be alive.

After his hospital release, Long didn't want to return to that neighborhood and became homeless on the streets of Los Angeles. He bounced around multiple VA shelters, trying to keep his job and survive.

"It got to the point I remember I was sleeping literally on the street," said Long. "It was the lowest point of my life. But I thought to myself 'There's nowhere but up from here.' So I didn't give in. I persevered and told myself I'd make it through this. That experience taught me about independence, dedication, and overcoming insurmountable obstacles."

A friend convinced Long to move to Cedar City in 2011, and Long was able to find a job working at Gold's Gym (now Vasa Fitness). He knew about SUU and wanted to pursue a degree in medicine but waited several years before applying to school. The biggest obstacle in going back to school was the financial cut he'd take as a full-time student, but a desire to help his clients beyond the scope of a gym drove him to enroll at SUU in 2014.

Long began his academic journey in SUU department chair of chemistry Dr. Ty Redd's organic chemistry course. This comprehensive and very intense two-semester class educates students to think critically and independently about organic chemistry through a mechanistic common-theme approach to the subject.

"At times, I felt like I was back in military boot camp," said Long. "But professor Redd's demanding, passionate character really helped to refine my grit toward a vocation as a medical scientist."

Though challenging, Long's academic performance ranked him in the 99th percentile of the nation on that year's organic chemistry exit exam, nationally standardized by the American Chemical Society. Redd has personally worked with Long through classes and extracurricular research, always finding Long to be self-motivated and enthusiastic.

"The manuscript of Donald Long's life could have been very small, ending with his death at the hands of a man with a knife, but it did not, and Donald is making the best of his second chance," said Redd. "His compassion is the fabric of his desire to serve and improve life for others. Donald is cheerful, engaging, congenial, and always lifts those around him. He is a self-motivated student who challenges himself to succeed."

While at SUU, Long discovered the ultimate channel for his greatest aspiration: science. With the help of invaluable mentors like Redd, SUU department chair of biology Dr. Fredric Govedich, and SUU chemistry professor Dr. Bruce Howard, Long discovered his passion to change the world through science.

“During my years at SUU, I have cultivated perfecting the scientific process, which has been refined over the millions of years of humanity’s existence,” said Long. “A huge component of the scientific method is being familiar with the ever-shifting foundations of the physical and biological sciences. One has to grasp the core principles in order to understand what you are observing in the world, which prompts viable questions and hypotheses.”

As a member of the Rural Health Scholars program at SUU, Long has had service and research opportunities woven into his undergraduate education. Through the program’s resources, Long was accepted to a Summer Research Opportunity Program at the University of Iowa. Last summer, he spent over eight hours a day researching under Kairuki Maina and Hank Qi at the University of Iowa. In Long’s experience, internships are a crucial part of an undergraduate education, especially if graduate school is a future option.

“Theory, which is invaluable, is what you learn at SUU, and may I say, they do a stellar job of teaching that,” said Long. “Research skills, the other side of the coin, are what you learn with these internships. Having these two components makes you a force to be reckoned with: It helps you know what you are doing and why you are doing it.”

Although this is his first exposure to a research institution’s methodology, Long is no stranger to lab work. He has spent a considerable amount of time in and outside the classroom collaborating with professors and learning everything he can. Howard has mentored Long on multiple projects and provides invaluable scrutiny to Long’s work.

“At times, I really gritted my teeth as his honest evaluation of my ideas and procedures were like the sound of nails scraping across a chalkboard, but in hindsight I am greatly appreciative of his guidance,” said Long. “It has helped me not only refine my scientific methods but has provided immense insight into how to effectively and efficiently carry out future projects.”

“Don is one of the most thoughtful, talented, and hard-working students I’ve had the

pleasure of working with at SUU,” Howard said. “His perspective on life is well-grounded, and his interests are wide-ranging. He excels at thinking outside the box and focuses on really understanding concepts and ideas. As he continues his education, I’m confident he will become an excellent physician and scientist and will make a real difference in the world.”

As a nontraditional first-generation student, Long understands the struggles working professionals face when deciding to go back to school. But as Long has progressed through his degree, he’s found that hard work in school “pays” in scholarships, grants, and invaluable internship opportunities.

Long has a deeply rooted thirst to engage in research and has been involved in four major projects while at SUU. Two of these projects have been funded by the National Science Foundation and two via granted fellowships. He has investigated the effects of a community’s unique irrigational system on its local water chemistry and analyzed the effects nutrient enrichment and pharmaceutical pollution has on stream biofilms. He’s analyzed inhibitors for an enzyme linked to tuberculosis, which is still a persistent disease in the 21st century. He’s also evaluated the effects of genetically modified soy-based baby formula on the methylation/acetylation patterns, reproduction, and development in *Drosophila melanogaster*, a species of fly, over seven generations. He has presented his work at national conferences.

“Going back to school was the best decision I’ve made,” said Long. “I am beyond grateful for the opportunities my professors at SUU have given me to grow as a scientist. They have prepared me for the country’s top medical programs and have taught me the value of intensive research.”

Long will graduate this May with a double major in biology and nutrition and a minor in chemistry. He will take the MCAT and start applying for medical schools this fall with the goal to study internal medicine. During his gap year, Long has plans for a post-baccalaureate program, which entails a year of intensive research at an R-1 institution.

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