

IVC engineering student helps design her own prosthetic

SOC CCD Public Affairs

When Haley Barrios was a child, she loved to build things.

“I still love tinkering with things, then taking them apart,” says Barrios, now a mechanical engineering student at Irvine Valley College.

This curious and industrious nature led Barrios to design her own prosthetic arm – and to pursue a degree in mechanical engineering. She is now a star student in IVC’s Mathematics, Engineering, Science Achievement Program – established to advance equity, inclusion, access and success in calculus-based science, technology, engineering and mathematics majors for first-generation students from low-income households.

Barrios, who was born with congenital limb loss, grew up using a body-powered prosthesis. “I have scoliosis and realized this type of device wasn’t optimal for me,” she says. So when she was just 16, she began researching myoelectric prosthetics, which minimize strain on the

body since they are operated by electric sensors. After much research, she worked with Hanger Clinic – which specializes in prosthetics and orthotics – to create the final product she still uses today. “It was an intense, but rewarding undertaking,” she recalls, and required immersing herself in myoelectrics while collaborating with mechanical CAD engineers to customize a prosthetic that met her wants and needs.

This process eventually led her to the MESA program at IVC. “I am a first-generation student and couldn’t pay for a four-year university,” Barrios explains. “For me IVC was the ideal option. They have a great STEM program with amazing engineering professors and strong relationships with all the UCs and California State Universities.”

After she graduates from IVC next year, she hopes to transfer to Caltech or UC Irvine to further her mechanical engineering studies.

Looking forward, “my dream is to be a mechanical engineer at a CAD company where I can specialize in designing prosthetic devices to help kids just like me.”



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Haley Barrios, a mechanical engineering student at Irvine Valley College, designed her own prosthetic arm.