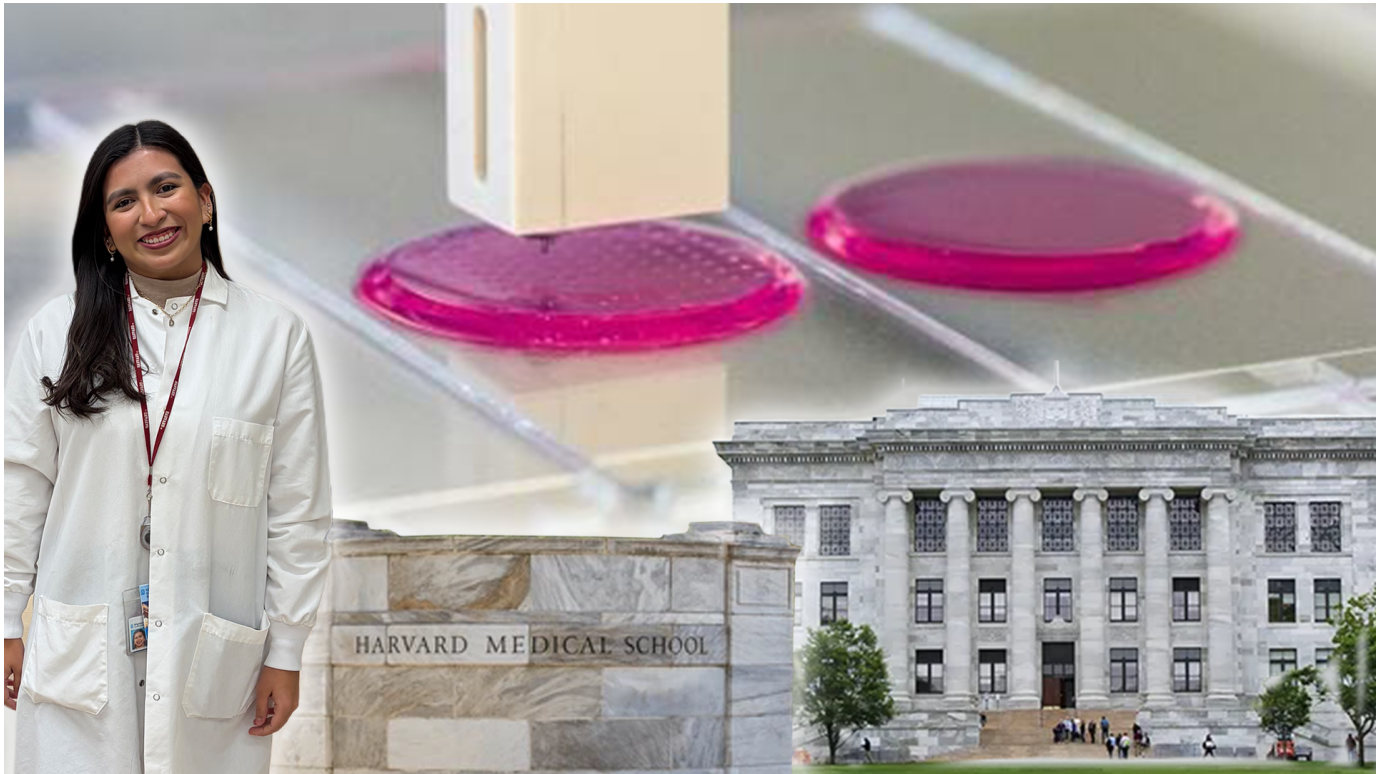


To Harvard! Tec student helps create robot that regenerates tissues



Daniela Hernández completed a research fellowship at Harvard in collaboration with Brigham and Women's Hospital.

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Courtesy of Daniela Hernández

Thanks to her training in **mechatronics, robotics, and programming**, Daniela Hernández has helped develop a **new tool** for the **healthcare sector** at one of the world's most prestigious educational institutions.

The eighth-semester student of Mechatronics Engineering at the [**Tec's Sonora Norte campus**](#) completed a semester at **Harvard Medical School**, in collaboration with **Brigham and Women's Hospital** in Boston, Massachusetts, to **research** innovations in tissue regeneration.

This project aims to develop a **robotic arm** capable of **regenerating tissue** in wounds using a bio-ink printing technique.

"I wasn't interested in medicine, but I applied so I wouldn't be left wondering, 'What if...?' Ultimately, a path opened up, and it changed my life," the student said.



During her research stay, Daniela worked with an international group of students and researchers. Photo: Courtesy of Daniela Hernández

The role of mechatronics in medicine

During her stay, Daniela worked with doctors from around the world, including Dr. Su Ryon Shin from Korea, who oversaw the area where the project was carried out.

The laboratory team at [Brigham and Women's Hospital](#) is working with cells to **regenerate skin tissue** in wounds, primarily in diabetic patients.

This student is working on a **robotic arm** capable of regenerating skin, functioning as a **bio-ink printer**—a material composed of **living cells, biomaterials, and growth factors**.

The machine detects the wound and autonomously plots the path the printer will follow across it.

Although Daniela's stay has ended, the project will continue in Boston as it moves into the **testing phase**, focusing on a range of muscle movements in multiple dimensions.

The ultimate goal is to implement it in hospitals around the world, said the student.

"I wasn't interested in medicine, but [...] in the end, a path opened up, and it changed my life."

The path to Harvard with support from the community

Daniela told CONECTA that one of the **biggest challenges** she faced in making her trip was that her visa arrived just three days before her scheduled departure for Massachusetts, leaving her **very little time** to raise the necessary funds for the trip.

With such short notice, Daniela recalls that she contacted **health and government agencies** in Hermosillo to request **assistance**.

The Good Neighbors Foundation, International Programs, San Diego de Alcalá Hospital, and the State Government, through the Sonora International Scholarship, are among the institutions that have supported this young woman from Sonora by covering her tuition, airfare, housing, and living expenses.

“One thing that can be said about me is that I never give up,” she said, describing herself.

In addition to her engineering background, she believes that her perseverance and the skills she gained through student organizations gave her the tools she needed to pave the way for this opportunity.

Photo: Courtesy of Daniela Hernández



You never stop learning

Additionally, one of the first **challenges** he faced during her time in Boston was having to **teach herself a new programming language from scratch**, since the one used in Harvard's labs was different from the one she had used up until then.

"It was quite a challenge to say, 'Yes, I'm ready. I'm not going to give up, and everything will work out because it has to,'" the student said as she described her journey.

To complement her education, Daniela enrolled on a course as part of the **Master's program in Mechanical Structures** at the **Massachusetts Institute of Technology** (MIT), an opportunity she secured through negotiations with the professor in charge of the lab where she completed her internship.

"You'll figure it out in the end; you learn as you go. It's all about believing in yourself," she advised.

"Many people have supported me, and I'd like to repay the debt that we young students owe to our community."

The future of biomedicine

Daniela said that, at the end of her stay, the most valuable **lesson** she took away was her **professional and personal growth**.

Besides **expanding** her **knowledge and skills** in mechatronics, she believes she has learned the importance of **perseverance** and **taking the initiative** to **continue learning**.

The student said that one of her goals following this experience is to **bring some of this technology** to hospitals in **Mexico** once she graduates from college, as she believes that, as young people, it's their responsibility to **give back to the community** for the support they've received.

“Many people supported me, and I’d like to repay the debt we young students owe to our community,” she added.

Upon returning from this research stay with a newfound interest in the biomedical field, Daniela shared that she is currently **interning** at **GCE Biomédica** in Hermosillo, Sonora, where she hopes to continue her **professional development** after graduation.

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