Mexicans from Tec stand out as health researchers at Harvard and MIT

In an email, **Dr. Ellen Grant,** the director of the Fetal-Neonatal Neuroimaging and Developmental Science Center (FNNDSC) at Boston Children's Hospital, states *"We are very impressed by Alex's work. We'd love to look into the possibility of getting more students next year*".

Dr. Grant is referring to **Alejandro Valdez**, **one of 38 Tec de Monterrey students** that are enrolled in the **Harvard Visiting Researcher Program** this semester. The contribution of these Mexicans is being recognized by the leading researchers they work with.

Alejandro, who is studying a **master's in Computer Science at the Tec,** works with researcher Kiho Im on aspects of **deep learning** and **machine learning** to explore the brains of prenatal babies.

For her part, **Su Ryon Shin**, the head of the laboratory for **tissue engineering, biosensors and organ-on-a-chip with cardiovascular applications** at the **Harvard Medical School's Brigham and Women's Hospital,** received nine interns and echoed Dr. Grant's praise for the way these young people have performed.

"All the Tec students are very smart and work hard to make significant progress on their projects. They're also highly productive and self-motivated, and are always willing to put in extra hours," she enthused.

The work ethic of these Mexican students is much lauded in the different research centers they have been assigned to.

“Our researchers tell me that our Tec students are very hard-working and do their fair share; if late nights are required, they burn the midnight oil. They are also very proactive, and ready and willing to take on new challenges,” pointed out Patricia Jacques, **director of the Tec’s liaison office in Boston.**

Brigham and Women's Hospital width="1592" loading="lazy">

TECHNOLOGY AND SCIENCE FOR BETTER HEALTH

The laboratories where the students work are located in the **Brigham and Women’s Hospital, the Boston Children’s Hospital, the Harvard Medical School, Harvard Institutes of Medicine and the Partners Research Building.**

“We develop marketable technologies that can be transferred to clinics; what students develop in the lab can turn into a commercial venture,” explained **Guillermo Ulises Ruiz-Esparza, researcher at the Harvard-MIT Health Science and Technology division.**

“This division is a fusion of the Harvard Medical School and MIT engineering schools”, added Ruiz-Esparza, who is also the director of the **Molecular Nanosystems Laboratory**.

The research being done by Tec students is mainly focused on **advanced technology for the health sector**.

One of the interns participating in the program this semester is **Lorena Sánchez,** a student of **Biotechnological Engineering** (IBT for its initials in Spanish) at the Mexico City campus, who is looking for a way to treat burns.

“I’m leading a project that aims at developing and manufacturing a nanomaterial for artificial skin reconstruction. At the outset it will be used for burns, but it has the potential for many other applications,” explained the student.

Da estudiante del Tec conferencia en el MIT width="1280" loading="lazy">

Cell cultivation and nanoparticle synthesis are two of the activities performed by **Gabriela Güemes, a medicine student in her fifth semester at the Monterrey campus**, as part of her research into genetic material encapsulation.

“As a health professional, I have been able to appreciate that there are many ways of helping patients, not just hands-on and one by one. Your research can impact many more people than you would ever be able to deal with in your private practice,” Gabriela told us.

Gabriela es estudiante de Medicina en el Tec width="599" loading="lazy">

Another young woman who was invited to participate in the program this semester is **Mildred Jiménez from the Guadalajara campus,** who is in her eighth semester of **Biotechnological Engineering (IBT).**

She has been involved in programs focused on the development of **nanosystems for the encapsulation and delivery of drugs and genetic materials.**

Mildred Jiménez frente a un poster de su investigación width="1600" loading="lazy">

PROGRAM ORIGIN AND CONSOLIDATION

Jacques commented that invitations to apply for a visiting researcher position are issued every semester to different levels of students doing degrees in **medicine**, engineering specialties such as **biotechnology, nanotechnology, mechatronics, chemistry, and computer science**, among others, and those enrolled in **master's, doctoral and postdoctoral programs** in the same areas.

The program director, who, alongside Guillermo Ruiz-Esparza, represents the Tec, said that in 2016 a couple of students were invited to **Harvard** as interns by **Mario Álvarez, a Tec lecturer** on a one-year post-doctoral residency.

Eventually, having completed his cycle as a visiting scholar on the **Harvard-MIT Health Science and Technology** program, Álvarez introduced Ruiz-Esparza to Jacques; Ruiz-Esparza, who is **a Tec de Monterrey alumnus (EXATEC)**, was the **first Harvard researcher** to incorporate Tec students.

Doctor Guillermo Ruiz y estudiantes de su laboratorio width="1267" loading="lazy">

"I was the only one who used to receive students. Later on, I went to speak to Dr. Joseph Bonventre, the divisional director and proposed to him that the program should be expanded so that another ten laboratories could receive students here at Harvard, and he took me up on it," recalled Ruiz.

Ruiz-Esparza further commented, "*[Tec students] are familiar with the type of research done at these institutions and they quickly realize that they have the same skills as Harvard or MIT students and that they can have precisely the same aspirations and compete with them on an equal footing."*

Jacques also mentioned the importance of the program both to the **Tec de Monterrey** and **Harvard**.

"I believe that these are truly valuable partnerships where it's win-win for everyone, not just for the Tec, but also for Mexico as a nation.

"The fact that everyone at Harvard recognizes the quality of Tec students helps us position ourselves as a prestigious Latin-American university. The quality of researchers from the Tec is being acknowledged," he pointed out.

Jacques believes that the **relevance of the research done** and the **quality of the contributions** from **Tec de Monterrey students** during the program add to the Tec's burgeoning reputation.

"The other researchers joining our crusade are starting to see that our students are getting good results, that they are good students and hard workers, which has helped the program's growth," said the program director.

READ ALSO:

https://tec.mx/en/news/national/education/she-finished-her-master-when-she-was-16-now-shes-going-harvard