Release No. 48
Mexico City, November 1st, 2026

IPN Students Win First Place in China with Smart Cane Project for People with Visual Impairments

- **The Safe Step project earned first place among Polytechnic teams during an academic program at Tsinghua University in Beijing, sponsored by COFAA.**
- **The proposal combines sensors that detect obstacles with an emergency button that alerts a trusted contact and shares the user's real-time location.**

Students from various academic units of the Instituto Politécnico Nacional (IPN) developed a smart cane designed to enhance mobility, independence, and safety for people with visual impairments. The socially impactful innovation earned first place among projects presented by Polytechnic students during their academic stay at Tsinghua University (THU) in Beijing, China.

The renowned university challenged participants to develop a business proposal focused on technology or biotechnology. In response, the Polytechnic team, known as "Five Stars," created Safe Step, a project with significant social impact for Mexican society.

The device integrates sensors that detect obstacles at different heights, including those near the user's head, arms, and legs. Vibrations in the handle alert users to nearby objects, helping them anticipate potential hazards as they move.

The initiative aligns with the technological development policies promoted by the administration of President Claudia Sheinbaum Pardo and Secretary of Education Mario Delgado Carrillo. The design also features an emergency button that allows users to alert a trusted contact in dangerous situations and share their real-time location to request immediate assistance.

The project was developed during a three-week academic program attended by 40 Polytechnic students at Tsinghua University in Beijing, China. The program was part of the Leadership and Entrepreneurship Development Program (Programa de Formación de Líderes y Emprendimiento, PFL), sponsored by the IPN's Commission for the Operation and Promotion of Academic Activities (COFAA).



Before a jury composed of Tsinghua University faculty members and corporate executives, the team presented a conceptual demonstration of Safe Step using a smartphone application and a handheld selfie stick.

Of the five IPN teams participating in the competition, "Five Stars" stood out. Its members were Julianna Inzunza (National School of Biological Sciences, ENCB); Víctor Manuel Olguín Castillo (Superior School of Computer, ESCOM); José Ángel Muñoz Cabrera and Gilberto Vallejo Alcalá (Interdisciplinary Professional Unit of Engineering and Social and Administrative Sciences, UPIICSA); and Kenia Guadalupe Córdova Domínguez (Interdisciplinary Professional Unit of Engineering, Palenque Campus, UPIIP).

The team also included Luz Erandi Jiménez Toral (Interdisciplinary Professional Unit of Biotechnology, UPIBI); Víctor Alejandro García Azuara (Superior School of Mechanical and Electrical Engineering, ESIME Zacatenco Campus); and Montserrat Plascencia Pérez (Superior School of Engineering and Architecture, ESIA Tecamachalco Campus).

Speaking on behalf of her teammates, student Julianna Inzunza explained that the program at Tsinghua University included coursework in soft skills, teamwork, negotiation strategies, leadership, and emotional intelligence, as well as cultural immersion activities.

The award recognizes the collaborative effort of students from diverse academic disciplines, who combined their technical knowledge and skills to develop a proposal aimed at improving mobility and safety for people with visual impairments.

For more information, visit www.ipn.mx

===000===

