

Impact projects from the Tec's Faculty of Excellence



The members of the Faculty of Excellence initiative have presented thirty-two projects dealing with topics related to health, society, sustainability, and socially impactful technology.

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Alejandro Salazar

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AM Studios

From **new approaches to fighting cancer** and **the right to be given pain relief** to **biobanks for understanding why metabolic diseases affect the Mexican population more**, these are the projects done by professors belonging to the Tec's [Faculty of Excellence](#).

The initiatives also address **violence** issues; explore **sustainable materials to replace plastics**; and **open previously inaccessible Latin American historical archives to complete the story**.

This research was presented during [Tecnológico de Monterrey's Faculty of Excellence Summit 2026](#), which was held on the **Mexico City** campus on February 18-19.

The summit's events included the announcement of a new program aimed at helping doctoral students join the Tec as full-time professors, and a presentation concerning the **status of the Tec's artificial intelligence ecosystem** and the tools that will be available to the academic community.

A total of **thirty-two projects** developed by professors participating in this initiative at **Tecnológico de Monterrey** were presented.

The forty-one members of the Faculty of Excellence during their meeting on the Mexico City campus. Photo: AM ESTUDIOS



Growing the Faculty of Excellence's impact

During her welcome speech at the Faculty of Excellence Summit, **Grisel Ayllón**, Vice Rector of Faculty, highlighted the growth that the initiative has experienced since its inception and the role it plays today in the Tec's academic ecosystem.

Four years after its creation, the program has become established as a community of **forty-one world-class academic leaders**, who have come together to **strengthen research, teaching, and outreach with an impact** both in Mexico and abroad.

"Their attendance at this event is not only a contribution to the Tec, but also a catalyst for the future of higher education in Mexico and further afield."

Juan Pablo Murra, Rector of Tecnológico de Monterrey, invited the members of the **Faculty of Excellence** to reflect on the Tec as a **platform for promoting transformative projects**.

"I see the Tec as a platform. The question is how you are leveraging this platform to drive big, bold ideas that drive change"

"I see the Tec as a platform. The question is how you are leveraging this platform to drive big, bold ideas that drive change" - Juan Pablo Murra

He also emphasized the importance of involving students in academic and research projects.

"Always keep students in mind: engage them, connect them, and open up opportunities for them."

Roberto Iñiguez, Executive Vice President for Academic Affairs and Faculty, explained that the **Faculty of Excellence** is now entering a second phase focused on **scaling the impact of academic talent** and aligning it with the institutional ecosystem.

*"We're moving into the Faculty of Excellence's second phase, which focuses on **how to ensure that the impact** everyone has **grows in tandem** with the **institutional ecosystem** they are part of."*

Juan Pablo Murra spoke with the Faculty of Excellence community about the strategic role of research towards 2030. Photo: Alejandro Salazar



Launching a program to train teachers of the future

During the meeting, the launch of the **Faculty for the Future** (Facultad a Futuro) program was announced, which is an initiative aimed at **making the generational renewal of Tec's teaching staff more robust.**

*"We're launching the **Faculty for the Future** program, which aims to incorporate young academics into our full-time teaching staff across campuses," explained **Roberto Iñiguez.***

It provides partial support for doctoral studies at international universities.

*"This program will partially support the doctoral studies of talented young people at approximately **one hundred universities.**"*

Roberto Íñiguez, Executive Vice Rector for Academic Affairs and Faculty, presented the Faculty for the Future program. Photo: AM ESTUDIOS



The Tec's AI ecosystem and tools for teachers

Carles Abarca, Vice President of Digital Transformation, gave an update on the status of the Tec's artificial intelligence ecosystem and the tools that will be available to the academic community.

The exhibition traced the evolution of **AI's institutional use at the Tec** from the earliest experiments done in **2022** to the consolidation of its own ecosystem, which today includes **repositories of prompts, educational tools, and academic support environments**.

One of the main milestones is **Skill Studio**, a repository with **more than 12,000 skills created by experts**, which enables teachers and students to use artificial intelligence in classes, assessments, and training processes.

The next phase of the ecosystem aims to deploy **AI agents** capable of providing active support in various academic processes.

“2026 will be the year when AI agents stop being assistants and become active participants in processes.”

Carles Abarca, Vice President of Digital Transformation, gave an update on the state of the Tec’s artificial intelligence ecosystem. Photo: AM ESTUDIOS



Faculty of Excellence research projects

At the meeting, **Faculty of Excellence** members presented **thirty-two projects** they are currently working on.

The initiatives cover areas such as **health, sustainability, society, economics, creativity, and artificial intelligence**, thereby reflecting the **interdisciplinary** nature of this academic community.

The thirty-two research projects share **active international links**, an **interdisciplinary approach**, and a commitment to working on **complex and urgent problems**.

Their joint goal is to **make an impact beyond academia**, with applications in health, public policy, technology, culture, and sustainability.

They use **data and technological tools** strategically to produce globally relevant knowledge **from Mexico and Latin America** while improving **student education and providing better training for new generations of researchers**.

Carlos Aguilar presented his biobank project that studies metabolic diseases in the Mexican population. / Photo: Fernando Ramírez



These are the projects presented by **Faculty of Excellence professors**:

Supporting health

-Overcoming immunotherapy resistance in cancer

Floyd Chilton at the School of Medicine and Health Sciences explained that his project is looking into why **60 to 80 percent of cancer patients do not respond to immunotherapy**.

The team identified a **key enzyme** associated with “cold” tumors, which **prevent T cells from accessing the tumor**.

“We have discovered a central mechanism that explains why immunotherapy fails in the most aggressive tumors.”

They are developing a **first-class inhibitor** with high clinical and commercial potential, which opens the door to **combination therapies and precision diagnostics**.

-Closing the global gap in pain and palliative care

[Felicia Knaul's](#) initiative at the School of Medicine and Health Sciences documents and combats what she calls the **“silent pandemic of pain.”**

According to the researcher, millions of people die each year without access to palliative care or basic pain relief.

Based on evidence published in *The Lancet*, the study reveals extreme inequality: **the poorest 50% of the world's population has access to less than 1% of medical opioids**.

The initiative proposes evidence-based policies to ensure equitable access to essential medicines such as morphine, without bringing on cases of abuse.

“Denying pain relief to prevent addiction is like starving people to prevent obesity.”

-Precision medicine for metabolic diseases in Mexico

The proposal put forward by **Carlos Aguilar** at the School of Medicine and Health Sciences builds a **unique infrastructure of genomic, metabolomic, clinical, and lifestyle data and biobanks** to gain an understanding of **why metabolic diseases affect the Mexican population more**.

With tens of thousands of samples and international partnerships, the goal is **to stratify risks** and personalize prevention and treatment.

-Accessible CAR-T therapies for myeloid leukemia in Mexico

[Alejandro Madrigal](#) is conducting research at the School of Medicine and Health Sciences aimed at developing **CAR-T**therapies against **acute myeloid leukemia (AML)**, one of the most aggressive cancers with the highest relapse rate, using a proprietary platform for **identifying therapeutic targets** and **computational antibody design**.

The goal is to **reduce costs** and times, and to **make this treatment viable in Mexico**, where it can currently cost over half a million dollars.

The initiative combines computational analysis, gene expression screening, and functional validation using processes whose **patents have already been applied for** and national and international collaborations.



Grisell Ayón at the Faculty of Excellence community meeting on the Mexico City campus. Photo: AM ESTUDIOS

- Gene therapies against fatty liver disease and liver cancer

In the field of biomedicine, [Juan Armendáriz's project at the School of Medicine and Health Sciences](#) gave rise to **Pharma Therapeutics**, a spin-off focused on combating **fatty liver disease associated with metabolic dysfunction**, a **silent disease** that affects millions and **can progress to cirrhosis and cancer**.

The company is developing two **patented formulas** with promising clinical results that are less expensive and have fewer side effects than current treatments; the next step involves clinical trials and regulatory approval.

- Rapid diagnosis for vulnerable populations

[Richard Willson's](#) initiative at the School of Medicine and Health Sciences is developing **point-of-care tests** (such as lateral flow strips) to detect **gestational diabetes, sepsis, and other diseases** that are currently diagnosed late due to cost, time, and access barriers.

The goal: **early detection**, low cost, and scalability in low-resource settings.

"Most harm is done because we get there too late to make the diagnosis."

-Prevention as a service: Systemic design for public health

[Peter Jones's](#) project at the School of Architecture, Art, and Design applies **systemic and service design** to improve **preventive healthcare**, which is historically one of the least funded areas in the Mexican healthcare system.

The initiative is developing **kiosks and community services that promote early detection and education** on diseases such as **hypertension and diabetes**.

This proposal seeks to **scale up low-cost, repeatable, evidence-based prevention models** that incorporate design, education, and public health considerations.

Jill Kickul explained how certain leadership traits can reduce prosocial behavior even in social initiatives. / Photo: Alejandro Salazar



Enterprise, leadership, and business models

- The “dark side” of social entrepreneurship in Latin America

Based on one of the most extensive studies in the region, involving nearly 3,000 people in nine countries, research by **Jill Kickul** at the School of Business analyzes **how dark personality traits** (Machiavellianism, narcissism, and psychopathy) reduce prosocial behavior even **in contexts of social entrepreneurship**.

The central finding is that these traits operate through a key belief: **the idea that “people get what they deserve,”** which serves as a **moral excuse for not helping**.

This study proposes **ethical filters, education, and differentiated training** as mitigation measures.

-Treating business as a science: Lessons from long-standing family businesses

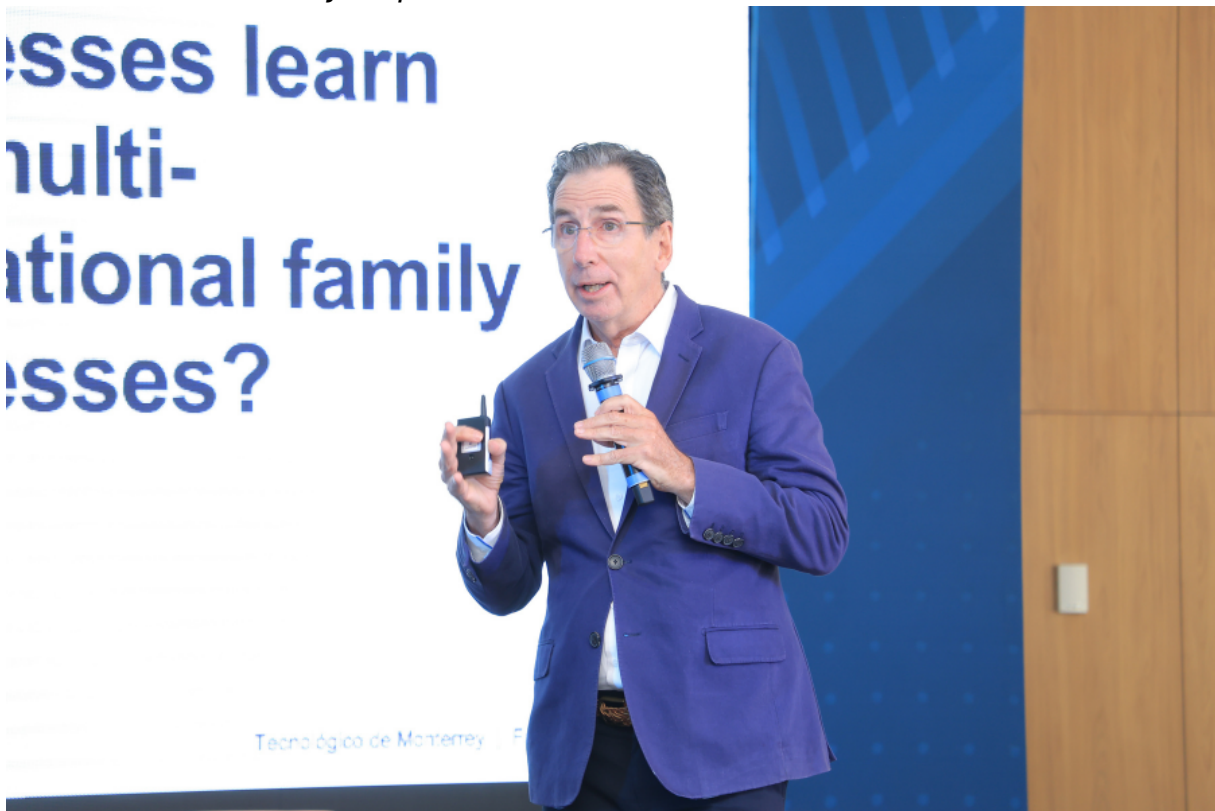
[Justin Craig's](#) project at the School of Business argues that **business is not just practice, it is science.**

Based on a **study of family businesses that have survived for generations**, the research **identifies** systematic principles such as governance, trust, values, reduction of agency costs, and resilience, **which explain their longevity and success.**

The goal is to translate this knowledge into **academic and curricular models** and position “business science” as a cross-cutting competency for all disciplines.

“It’s time to level the playing field and recognize that business is also a science”.

Justin Craig’s project in collaboration with the School of Business suggests that business is not just practice, it is science. Photo: AM ESTUDIOS



- Artificial Intelligence driving conscious companies

This project by [Raj Sisodia](#) at the School of Business develops **AI tools** that help leaders and organizations implement the principles of **conscious capitalism**: purpose, value creation for all stakeholders, ethical leadership, and **healthy organizational cultures**.

Among the innovations is a **digital “Jedi Council”**, a multi-voice advisory system that guides more humane and sustainable strategic decisions.

For society and democracy

-Don't fear the future: Design, imagination, and possible futures

From a **future-oriented and experiential perspective**, [Stuart Candy's](#) project at the School of Architecture, Art, and Design **seeks to combat students' anxiety** and pessimism about the future through **cultural interventions**, workshops, and **immersive experiences that make the future tangible**.

Initiatives such as *Don't Fear the Future*, *Posterity*, and *Taste of Tomorrow* invite us to **imagine desirable futures** and bring them into the present through design, art, and community participation.

“It's not about predicting the future, but about imagining it better and turning it into a topic of discussion”.



Stuart Candy and Patricia Murrieta-Flores exchanged ideas for building links between disciplines, institutions, and countries, beyond the scope of their projects. / Photo: AM ESTUDIOS

-Organized crime and violence against religious stakeholders in Mexico

This project by [Sandra Ley](#) at the School of Social Sciences and Government analyzes a form of violence: **organized crime attacks against religious leaders and communities.**

Based on the creation of a **new dataset (ARAM)**, the team has documented more than **230 attacks over two decades**, revealing a **steady increase in recent years.**

"Mexico has become the most dangerous country for priests in Latin America."

The research combines quantitative analysis, fieldwork, and collaboration with religious organizations to understand **why and when they become targets.**

-Democracy in Mexico: A structural problem

Rather than attributing **Mexico's democratic crisis** to individual leaders, [Alejandro Poiré's](#) project at the School of Social Sciences and Government argues that **the problem is structural** and reflects **profound flaws in the contemporary liberal model of governance**.

The research analyzes democratization, its authoritarian legacies, recent militarization, and institutional weakening.

This project proposes **rethinking democracy**, its institutions, and its real capacity to channel social demands in contexts of high inequality.

"We're moving into the Faculty of Excellence's second phase, which focuses on how to ensure that the impact everyone has grows." - Roberto Íñiguez

- Populism and work: Breaking the victimization cycle

This research by [Juan Ignacio Sánchez](#) from the School of Business analyzes **how populism filters into work culture**, thereby affecting effort, performance, and meritocracy.

The proposed model identifies conditions that favor populism (limited social mobility, rigid collective identities) and proposes **organizational interventions** to restore the belief that **effort, honesty, and teamwork** do lead to recognition.

-The "two Mexicos": Territorial inequality and government capacities

[Sebastián Mazzuca](#) at the School of Social Sciences and Government said that his project's goal is to explain why **the economic gaps between Mexican states** are comparable to those that exist between different countries.

In addition to geography or natural resources, the research highlights **a little-studied factor: subnational government capacities**, such as government efficiency, financing, and administrative quality.

The project proposes developing new indicators to measure these capacities and understand how they influence development, trade, and social cohesion.

-Taking decisions under conditions of deep uncertainty

[Steven Popper](#) at the School of Social Sciences and Government explained that his research addresses the “**how**” of **public and strategic decisions** when **there are no clear probabilities or causal consensus**.

Through **participatory forecasting** and robust decision-making methods, the team facilitates complex conversations between experts and stakeholders to move forward even in the absence of certainty.

Claudia Uribe Salazar presented Digitalis, her initiative to analyze the impacts, risks, and ethical dilemmas of technology and artificial intelligence. / Photo: AM ESTUDIOS



The economy and public policy

-The new wave of nearshoring for Mexico

[Ernesto Stein's](#) project analyzes how **recent changes in global trade policy, including tariffs and geopolitical tensions, are reshaping value chains and opening up new opportunities for Mexico** beyond the first wave of nearshoring.

"This new wave of nearshoring may be more profound and inclusive than the previous one."

The initiative led to the creation of a new center at the Tec that will analyze trade policies and value chains in an effort to bolster SMEs, advise governments, and identify strategic sectors such as semiconductors and AI.

-Digitalis: Investigating the dual nature of technology and AI

Digitalis is a research initiative led by **Claudia Uribe Salazar** at the School of Humanities and Education that studies the **benefits, risks, and ethical dilemmas of technology and artificial intelligence** with special emphasis on education, childhood, democracy, and everyday life.

The name refers to the *digitalis* plant, which possesses healing properties, but is also toxic if used incorrectly.

The project seeks to generate evidence from Latin America to **inform public and social** decisions in a hyperconnected environment.

-Funding research based on social needs

This initiative by [Frank Loge](#) at the School of Engineering and Sciences proposes a **new financing model**: working from **social needs** (rather than calls for proposals) to co-create projects with governments and communities.

The pilot project in the state of **Jalisco** brought together stakeholders from the water sector, agribusiness (tequila), and river basins (Santiago River) to prioritize immediately impactful investments.

Ana Elena Mallet presented her project to create an open digital archive of oral history of Latin American design. / Photo: Alejandro Salazar



Culture, education, and memory

-Open archive of the history of design in Latin America

This initiative by [Ana Elena Mallet](#) at the School of Architecture, Art, and Design seeks to create the **first open digital archive containing an oral history of Latin American design**, starting with Mexico.

The project **will document voices, spaces, objects, and trajectories** that are currently scattered or at risk of being lost by means of filmed interviews and contextualized materials.

"We have to tell our story with our own voices."

The archive will leverage the Tec's **technological infrastructure** to enable students, researchers, and designers to access and contribute to the archive with future expansion into Chile and Colombia.

-AI to unlock Latin America's colonial archives

[Patricia Murrieta-Flores's](#) project at the School of Humanities and Education combines digital humanities, artificial intelligence, and historical archaeology to **automate the transcription of handwritten colonial documents** from the 16th to 18th centuries.

Their AI models now achieve error rates of **less than 10%**, which enables millions of previously inaccessible documents to be processed.

The initiative not only transforms historical research but also opens up a new source of **Latin American data** to **train more representative AI models**.

"Only 0.2% of the data used to train ChatGPT comes from Latin America".



Patricia Murrieta-Flores presented her project to automate the transcription of colonial archives and discussed international collaborations in digital humanities. / Photo: Fernando Ramírez

-A feminist perspective for transforming architecture and cities

In her project, [Zaida Muxí Martínez](#) from the School of Architecture, Art, and Design incorporates **gender perspective and feminism** into architecture, urban planning, and design with actions that combine research, teaching, and public exhibitions.

One of its central themes is the reconstruction of the **history of Mexican architecture from the perspective of women** and bringing to light genealogies that have been systematically omitted.

The initiative also promotes the concept of **caring cities**, simultaneously addressing the climate crisis and the care crisis, in collaboration with academia, civil society, and local governments.

In her project, Zaida Muxí incorporates gender perspective and feminism into architecture, urban planning, and design with initiatives that combine research, teaching, and public exhibitions. Photo: AM ESTUDIOS



For sustainability, the climate, and industry

- Portable kit for fast water quality diagnosis

Marc Jazef Madou's project consists of developing a **micro water analyzer** capable of detecting bacteria, heavy metals, and contaminants in **under twenty minutes** as opposed to the number of days currently required for laboratory analysis.

The technology integrates microfluidics, plasmonic heating, and optical detection into a compact, portable platform.

With **five patents**, validated results, and spin-off plans, the solution aims to respond to water emergencies and monitor drinking water, even using drones.

"We took lessons from COVID and applied them to the planet's most pressing problem: water."

-Sustainable nanomaterials for a world saturated with plastics

[Gabriel Luna's](#) work at the School of Engineering and Science addresses one of today's environmental challenges: **global dependence on petrochemical materials**.

Drawing from **materials science and nanotechnology**, this initiative develops **more stable and sustainable chemical alternatives** with an emphasis on real-world applications that can be scaled up to industry.

In addition to basic research, the focus is on **social and public health impact**, especially in Latin American contexts where exposure to pollutants and microplastics is growing without sufficient regulation.

Miguel Modestino's project addresses a question for the 21st century: how can we maintain economic prosperity without destroying the climate?

Photo: AM ESTUDIOS



- Decarbonizing without slowing down development

Miguel Modestino's project at the **School of Engineering and Sciences** addresses a question for the 21st century: **how can we maintain economic prosperity without destroying the climate?**

It analyzes energy, transportation, agriculture, industry, and public policy from a systemic perspective to **design viable decarbonization pathways.**

The initiative brings together economic models, research on hydrogen, biomass, sustainable agriculture, and advanced manufacturing with international collaboration.

"Everything we do requires energy; the challenge is to change how we produce and use it."

-Microplastics, forever chemicals, and water

By means of a series of interconnected projects, [Munish Kumar's](#) initiative at the School of Engineering and Sciences investigates **emerging contaminants** (microplastics, PFAS (“forever chemicals”), and pesticides) **in groundwater and surface water** in **Mexico and Latin America**.

The work combines unsupervised analysis, predictive modeling, and machine learning, in addition to leading a **Latin American consortium on antimicrobial resistance (AMR)**, which is considered to be the next major health crisis.

“We work with the invisible today to avoid the inevitable tomorrow.”

Floyd Chilton and Roberto Íñiguez at the Faculty of Excellence meeting. / Photo: AM ESTUDIOS



- Cities that can use AI to react, anticipate, and prevent problems

[Francisco Falcone's](#) project at the School of Engineering and Sciences proposes an evolution from the **smart city** model to **cognitive cities** capable of reacting to, **anticipating, and preventing urban problems using artificial intelligence**, unsegmented data, and autonomous systems.

The research explores the **electromagnetic spectrum** as a key enabler for communications, **urban census and interconnection**, thereby laying the foundations for more sustainable, safe, and equitable cities.

"The city of the future will not be reactive: it will be predictive and proactive."

-Who matters? Corporate governance and invisible stakeholders

[Bryan Husted's](#) project at EGADE Business School rethinks **corporate responsibility** by asking **who the stakeholders** really are when it comes to **sustainability, public health, or social inclusion**.

Rivers, future generations, indigenous languages, and ecosystems are often **left out of traditional models of governance**.

The research proposes viewing responsibility not as a *checklist*, but as an **institutional design problem** in which exclusion is often more costly than inclusion.

"Inclusion is not free, but exclusion is much more expensive."

-Democratizing digital manufacturing and artificial intelligence

[Thomas R. Kurfess's](#) project at EGADE Business School aims to bring **AI, sensors, and digital twins** not only to large corporations but also to **small and medium-sized enterprises** that make up the bulk of the manufacturing sector.

This proposal leverages existing infrastructure to incorporate data, improve traceability, and build **more resilient and secure supply chains**.

The goal is to reduce response times to interruptions by up to **100 times** and to apply these models in sectors such as biotechnology and personalized healthcare.

"If we use AI to monitor traffic, why not use it to anticipate bottlenecks in the supply chain?"

Supporting creativity in commerce

-Digital displays in stores are effective sales tools (and AI will make them more so)

Dhruv Grewal's project at the School of Business uses randomized experiments at points of sale to demonstrate how **advertising on digital screens increases the probability of purchase by 8%.**

This study analyzed **227 campaigns** by measuring the direct impact on cash flow and opening the door for retailers to develop **their own advertising channel.**

The next phase incorporates **generative AI** to **create personalized, low-cost, real-time ads.**

Dhruv Grewal presented the results of his research on the impact of digital displays and AI at the point of sale. / Photo: Fernando Ramírez



- Storytelling with global impact: From the classroom to the creative industry

[Travis Blaise's](#) project at the School of Architecture, Art, and Design promotes a **mentoring-learning model for digital arts** focused on **storytelling** with the launch of **Leveling Up Studios**, a **multimedia animation studio at the Tec**.

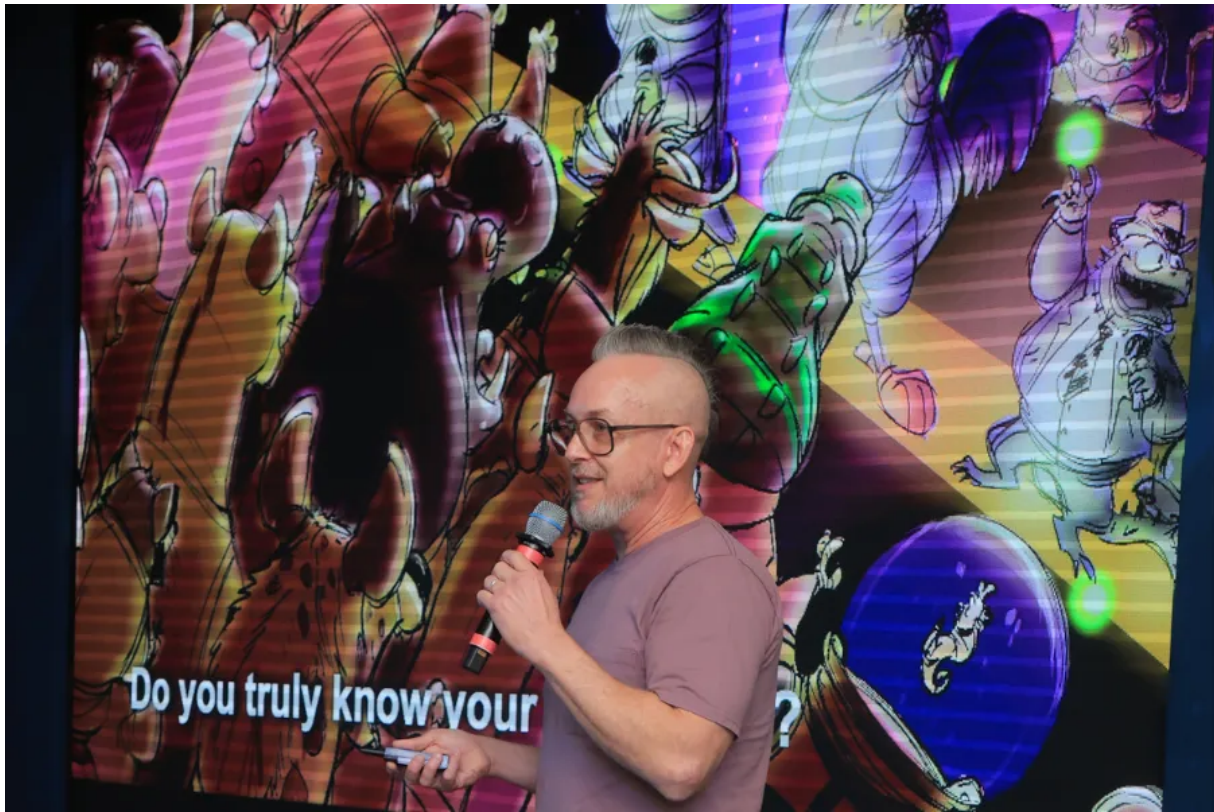
The initiative aims to equip students and teachers with **practical skills** to collaborate with creative industries and **tell globally relevant scientific and social stories**.

"Knowing how to tell the right story to the right audience is what brings about change."

-Creativity under pressure: How to survive (and create) in the AI era

[Alan Tucker's](#) project at the School of Humanities and Education uses music as an emblematic case study to reflect on the **impact of artificial intelligence on creative** industries (music, film, design, and performing arts) and the historical cycles of technological disruption that have displaced jobs, studies, and creative practices.

He explained that the proposal is not to resist technology, but to **refocus on human creativity, collaboration, and emotion** as **irreplaceable assets** in the face of algorithmic homogenization.



*Travis Blaise introduced **Leveling Up Studios**, the Tec's multimedia animation studio focused on impactful storytelling. Photo: AM ESTUDIOS*

About Faculty of Excellence

Faculty of Excellence is a **Tecnológico de Monterrey** initiative that was set up in 2021 to attract **internationally recognized distinguished professors** to the institution and add them to its schools to enrich teaching, research, and global collaboration.

Its goal is to bring together **100 global leaders** capable of driving progress, inspiring students and colleagues, and enhancing the Tec's academic and social impact.

Members of the **Faculty of Excellence** contribute to **knowledge generation**, lead **high-impact projects**, expand international cooperation networks, and enrich learning experiences in a variety of areas from engineering and design to health, humanities, and public policy.

The **Faculty of Excellence** functions as a **strategic academic community** that connects the Tec with global research networks, fosters interdisciplinary collaboration, and positions the institution as a leader in higher education with international reach.

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