

Challenge-Based Research Funding Program 2022

Selected projects publication

In reference to **Challenge-Based Research Funding Program**, we are pleased to announce the **Approved proposals** submitted to the Call 2022.

SCHOOLS PROPOSALS

1. Discovery Grants Modality

#	Project ID	Project Name
1	E004 - EIC-GI01 - A-T23 - D	Optimization and evaluation of edible microcarriers for a sustainable in vitro meat production based on porcine bone marrow mesenchymal stem cells, as a strategy for sustainable lifestyle
2	E011 - EIC-GI02 - B-T1 - D	Storage Resilient Maize for Food Security in Developing Countries
3	E026 - EIC-GI01 - A-T15 - D	A circular bioeconomy strategy for tequila vinasses management: Analyzing the effects of soil irrigation on physicochemical parameters and microbial communities
4	E028 - EIC-GI12 - A-T4 - D	Development of phase change materials (PCM) for improving energy efficiency and the integration of solar technologies in buildings
5	E032 - EIC-GI01 - B-T1 - D	Transformation of agro-materials using affordable technologies to promote the development of wound healing scaffolds in a sustainable manner for vulnerable communities.
6	E040 - EIC-GI01 - B-T7 - D	Characterization of bacterial biofilms on hospital material surfaces
7	E049 - EIC-GI01 - A-T9 - D	Assessing the ecological and public health risks caused by the presence of persistent and emerging pollutants in Santiago River sediments
8	E052 - ECSG-GI03 - E-T3 - D	Advancing towards gender equality in higher education: best practices to promote equity in scientific research
9	E054 - EMCS-GI03 - D-T1 - D	Potential rescue of a stress-induced cardiomyopathy rat model by phyto-molecules with antioxidant and anti-inflammatory properties
10	E065 - EIC-GI03 - A-T11 - D	Recycling automotive plastic waste: Finding potential applications for recycled polyvinyl butyral (r-PVB) from automotive windshields
11	E067 - EIC-GI03 - A-T9 - D	Two-dimensional materials with enhanced reactivity, based on defective molybdenum and tungsten disulfide monolayers, towards detection and adsorption of nano-size emerging pollutants.
12	E071 - EIC-GI02 - A-T11 - D	Valorization of cheese whey for the biotechnological production of inanimate cultures with potential postbiotic capacities to manage childhood obesity

13	E085 - EIC-GI06 - B-T3 - D	DTwinDistrict: An AI-based District-Scale Digital Twin for Emulating Events and Supporting Decision Making
14	E091 - EIC-GI01 - C-T11 - D	Implementation of a Circular Bioeconomy model in Brewing Industry for the valorization of Brewery Spent Grains by producing second-generation ethanol, plant growth promoters and postbiotic biomolecules: A zero-emissions sustainability approach while increasing profitability
15	E096 - EIC-GI01 - C-T11 - D	Microalgae biorefinery cultivated in an automated modular photobioreactor for the simultaneous food effluent bioremediation and extraction of high value bioproducts
16	E103 - EHE-GI02 - D-T5 - D	Cultural heritage and symbolic capital in the surroundings of the Monterrey technology, Mexico City campus: the sculpture complex “la route de la Amistad de 1968”: past, present and future
17	E105 - ECSG-GI02 - E-T5 - D	Mafocracy: State capture by organized crime
18	E116 - EIC-GI10 - A-T9 - D	Microplastics in Urban Environments: Establishing a Baseline of Water Pollution from Microplastic in Northern Mexico and Developing Potential Remediation Solutions
19	E120 - EIC-GI06 - B-T3 - D	SmartTec: A Data & Machine Intelligence for Smart cities

2. Exploratory Grants Modality

#	Project ID	Project Name
1	E006 - EIC-GI01 - A-T11 - E	Circular economy: Enhancing the production and extraction of bioactive compounds from agrifood by-products to convert them into natural ingredients using nanotechnology
2	E007 - EIC-GI10 - A-T3 - E	Application of new materials (graphene and hydrophilic graphene) in Electrodes and Proton Exchange Membrane to enhance the power generation in a functional Microbial Fuel Cell prototype
3	E010 - EIC-GI01 - A-T11 - E	Circularity of microalgae-based wastewater treatment applied for the treatment of anaerobically digested livestock waste for climate change mitigation: a pilot scale prototype including bio-flocculation, pollutants removal, and biomass harvesting
4	E015 - EMCS-GI02 - D-T1 - E	Preventive and therapeutic effect of Siempreviva-based treatment for pterygium in an animal model
5	E021 - EAAD-GI01 - B-T1 - E	Design for Vulnerables – Technology Challenge. New processes for technological assimilation in vulnerable areas and territorial effects.
6	E025 - ECSG-GI04 - B-T4 - E	A Transportation Agent Based Microsimulation Model for the Monterrey Metropolitan Area
7	E051 - EIC-GI10 - A-T8 - E	Recovering of Ca-P crystals for water reuse at maize lime cooking factories
8	E055 - EMCS-GI03 - C-T12 - E	Photography and audio-based technological application for the calculation of global caloric intake and related variables.
9	E057 - EIC-GI08 - B-T3 - E	Digital Technologies to Create Adaptive Smart Cities
10	E058 - EMCS-GI05 - D-T7 - E	Toxic stress, adverse childhood experiences and protective

		factors in parents and children: clinical and molecular screening.
11	E061 - EHE-GI02 - D-T3 - E	Neurohumanities Lab: Engaging Experiences for Human Flourishing
12	E088 - EIC-GI04 - A-T11 - E	Sustainable polyethylene textiles
13	E090 - EIC-GI04 - A-T3 - E	High-thermally conductive polymers and their study on the nano and microstructure for applications in passive thermal management
14	E101 - EIC-GI02 - A-T11 - E	Pulsed electric fields (PEF)-assisted fermentation of oilseed by-products to produce probiotic beverages under the circular economy scheme
15	E110 - ECSG-GI04 - E-T6 - E	A cognitive modeling approach for understanding computational intelligence-human interactions in uncertain and complex decision-making environments
16	E115 - EHE-GI01 - D-T2 - E	Assessing effects of Universal Design for Learning strategies to build inclusive classrooms in Medical School
17	E124 - EMCS-GI03 - B-T1 - E	Digital based strategies, for the early detection and follow up of diabetes and hypertension in primary points of care for people with low socioeconomic status.

INSTITUTES PROPOSALS

1. Exploratory Grants Modality

#	Project ID	Project Name
1	I001 - IFE001 - C1-T1 - E	OEM4C: OOEM4C: OOEM4C: Open Educational Model for Complex Thinking.
2	I002 - IOR002 - C6-T2 - E	Novel anti-obesity preventive nanoformulations in early childhood
3	I008 - IOR001 - C6-T1 - E	Impact of obesity and diabetes on the unexplored compositional profile of breast milk from Mexican women and its effect on gut health during early childhood: A multi-omic approach.
4	I011 - IOR003 - C6-T1 - E	Biomarkers, Subtyping, and Targets for Mexican Metabolic Health: Phase I – Experimental Characterization & Data analyses
5	I014 - IAMSM001 - C4-T1 - E	Observatory of Sustainable Manufacturing Industries
6	I016 - IAMSM006 - C3-T3 - E	Reduction of harvest losses in greenhouses growing raspberries and blackberries: picking berries through artificial vision systems and new lightweight material grippers.
7	I017 - IOR004 - C6-T3 - E	Caloric restriction and intermittent fasting as possible interventions to control heart failure
8	I018 - IOR001 - C5-T1 - E	Development of a Next-Generation Sustainable, and Nutritious School Lunch Made from Stressed Horticultural Crops Biofortified with Anti-Obesogenic Compounds: An Approach to Prevent and Reduce Childhood Obesity in Mexico
9	I023 - IAMSM002 - C4-T2 - E	Exploring and optimizing CO2 bio fixation process for microalgae lipids production to formulate green metalworking fluids - for

		cleaner manufacturing processes
10	I030 - IFE002 - C2-T1 - E	Dynamic Model of Future Skills for Industry 4.0
11	I032 - IAMSM005 - C4-T2 - E	Multi-material and multi-functional food 3D-pri
12	I033 - IOR004 - C7-T3 - E	Relationship between semaglutide and cardiac function in obese patients with cardiovascular risk factors
13	I035 - IFE005 - C1-T3 - E	Addressing gender issues in STEM higher education institutions

2. Translational / Experimental Research Grants Modality

#	Project ID	Project Name
1	I003 - IFE001 - C2-T3 - T	E4C&CT: Ecosystem for scaling up computational thinking and reasoning for complexity.
2	I004 - IFE001 - C2-T3 - T	OpenEdR4C: Education 4.0 Platform to strengthen Scientific, Technological, and Social Entrepreneurship through Scaling Complex Thinking Competencies
3	I005 - IFE001 - C2-T3 - T	S4L: Simulating for Learning
4	I006 - IAMSM004 - C4-T2 - T	Sustainable casting system based on incremental automation methods and artificial intelligence
5	I007 - IOR001 - C5-T1 - T	Smart lipids-conjugates with antioxidant proteins and starch to reduce glycaemic index and deliver lipophilic anti-obesogenic compounds to develop a healthy food for children and their families
6	I010 - IFE002 - C1-T2 - T	i-Classroom
7	I015 - IOR002 - C5-T2 - T	Lateral flow platforms for the early detection of metabolic disorders and pre-obesity protein biomarkers in children
8	I025 - IAMSM005 - C3-T1 - T	Development of smart edible coating for the preservation of berries
9	I026 - IAMSM005 - C4-T1 - T	Development of a passive sampler for early warning systems to guarantee food security during the production and distribution
10	I031 - IOR004 - C6-T2 - T	Cannabidiol-based formulations for the treatment of obesity-induced metabolic diseases. An integrative preclinical study to translate basic scientific research to the clinical setting.
11	I036 - IOR005 - C5-T3 - T	Economic, equity, and policy dimensions of the prevention and control of obesity-associated cancers in Mexico and other middle- and lower-income countries: a study linked to the Lancet Commission on Cancer and Health Systems

Please consider that Accepted proposals will be contacted in the following days to start the formalization-process. Some of them are subject to changes. Finally, all the proposals will receive their corresponding feedback.

Monterrey, N. L., October 26, 2022