CIC biomaGUNE

MEMBER OF BASQUE RESEARCH
& TECHNOLOGY ALLIANCE

Participación de CIC biomaGUNE en el programa EIC Pathfinder

Nerea Argarate, PhD.
R&D Project Manager
CIC biomaGUNE

Center for Cooperative Research in Biomaterials

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ABOUT
CIC biomaGUNE

The Center for Cooperative Research in Biomaterials CIC biomaGUNE

member of the Basque Research and Technology Alliance (BRTA), is a **non-profit research organization** created to promote scientific research and technological innovation at the highest levels in the Basque Country following the BioBasque policy, to help create a new business sector based on biosciences.

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BRTA
BASQUE RESEARCH & TECHNOLOGY ALLIANCE

BASQUE ALLIANCE FOR R&D

We are an alliance of 17 technology centres and cooperative research centres, with the support of the Basque Government, SPRI and the Provincial Councils of Araba, Bizkaia and Gipuzkoa.

AZTERLAN
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AZTI
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ceit
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CIC bioGUNE
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CIC biomaGUNE
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CIC energiGUNE
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CIC nanoGUNE
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cidetec
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Gaiker
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IDEKO
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Leartiker
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LORTEK
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NEIKER
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tecnalia
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Tekniker
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vicomtech
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MISSION
CIC biomaGUNE

Improve the competitiveness and support the development of the **local industrial ecosystem** through:

1. **Forefront Research in Biomaterials**
2. **Generation and Transfer of knowledge**
3. **State-of-the-Art infrastructures and Provision of services**

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VISION and OBJECTIVES

To be recognized as scientific leader and knowledge builder in biomaterials at regional, national and international level

1. Bionanotechnological tools
2. Synthetic Bioengineering
3. Molecular and Functional Imaging

Nanomedicine
Advanced Therapy
Diagnostic

Clinical Practice

Potentiating stable alliances and formation of multidisciplinary teams (publications, joint collaborations, reseach projects, PhD tesis)

Making posible the transfer of research results to companies (through patents, creation of new companies, providing services to companies)

Favouring translation to clinics and improve peoples HEALTH

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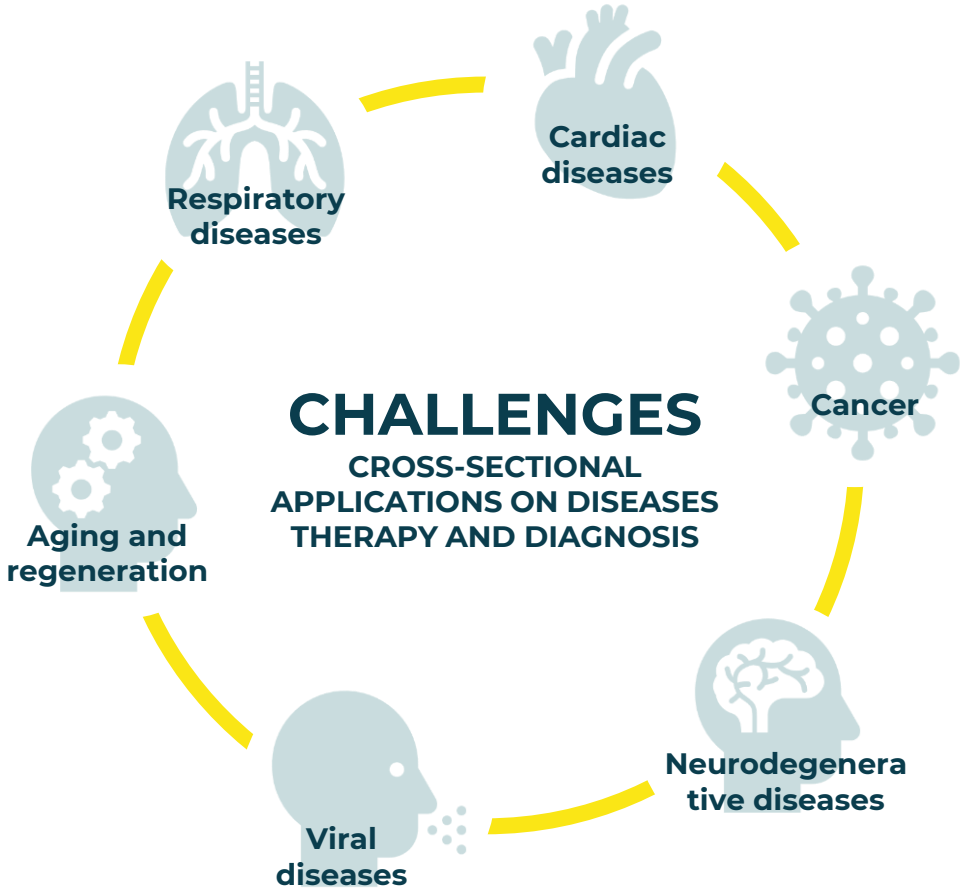
3 RESEARCH AREAS

1. BIOFUNCTIONAL NANOMATERIALS
2. SYNTHETIC BIOENGINEERING
3. MOLECULAR& FUNCTIONAL IMAGING




BIOMOLECULAR NANOTECHNOLOGY
Aitziber L. Cortajarena
BIONANOPLASMONICS
Luis Liz-Marzán
REGENERATIVE MEDICINE
Ander Abarrategi
HYBRID BIOFUNCTIONAL MATERIALS
Dorleta Jiménez de Aberasturi
HETEROGENEOUS BIOCATALYSIS
Fernando López
CARBON BIONANOTECHNOLOGY
Maurizio Prato
11
RESEARCH GROUPS
Unveiling the interaction of materials and biological systems at the nanoscale
MAGNETIC RESONANCE IMAGING
Pedro Ramos
SOFT MATTER NANOTECHNOLOGY
Sergio Moya
GLYCOTECHNOLOGY
Niels-Christian Reichardt
MOLECULAR AND FUNCTIONAL BIOMARKERS
Jesús Ruiz-Cabello
RADIOCHEMISTRY & NUCLEAR IMAGING
Jordi Llop

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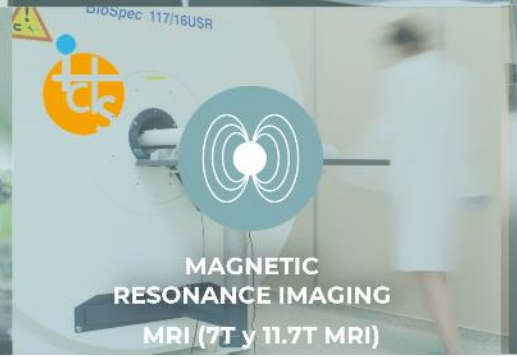
UNIQUE RESEARCH FACILITIES

ReDiB

AZPITEK

Molecular & Functional Imaging Facility and the **Technological Platforms**, which constitute a major strength of the Center are **one of the most complete Preclinical imaging research infrastructure in Europe.**



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Potentiating stable alliances and formation of multidisciplinary teams with international research teams

FUNDING

EIC PATHFINDER

UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional

7

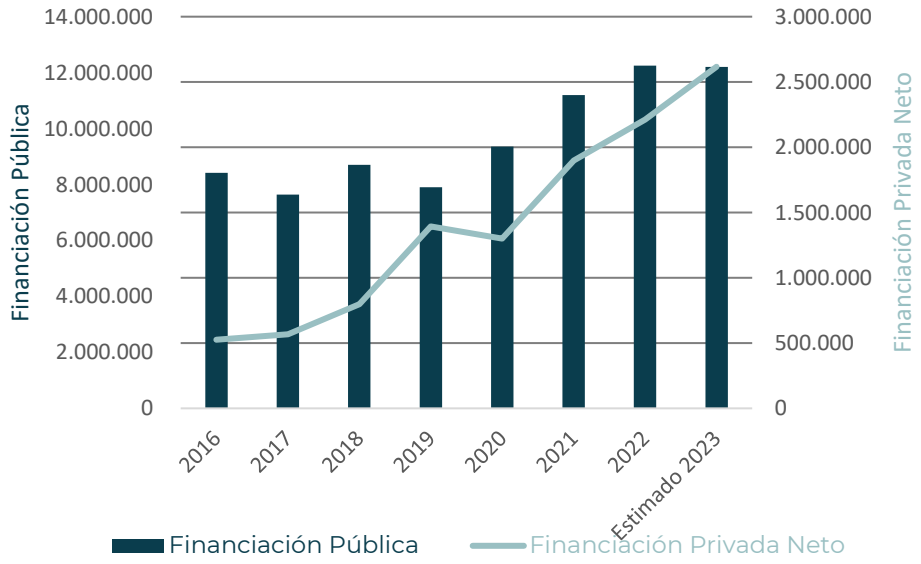
3.048.541€

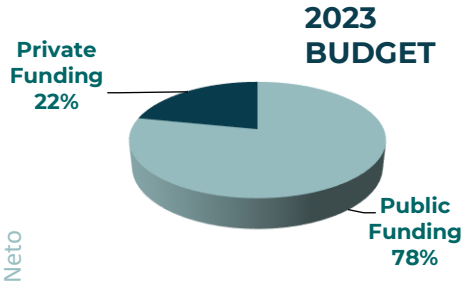
FET OPEN

UNIÓN EUROPEA
Fondo Europeo de Desarrollo Regional

4

1.694.178€





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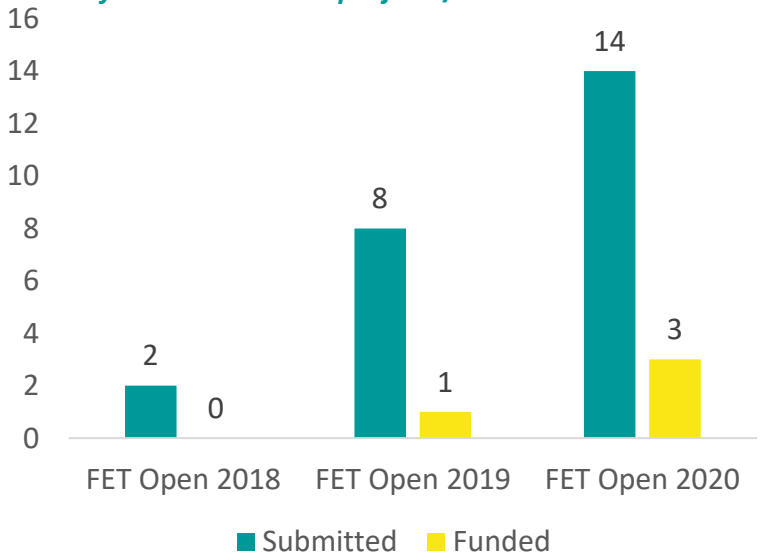
Participation at FET and EIC Programme

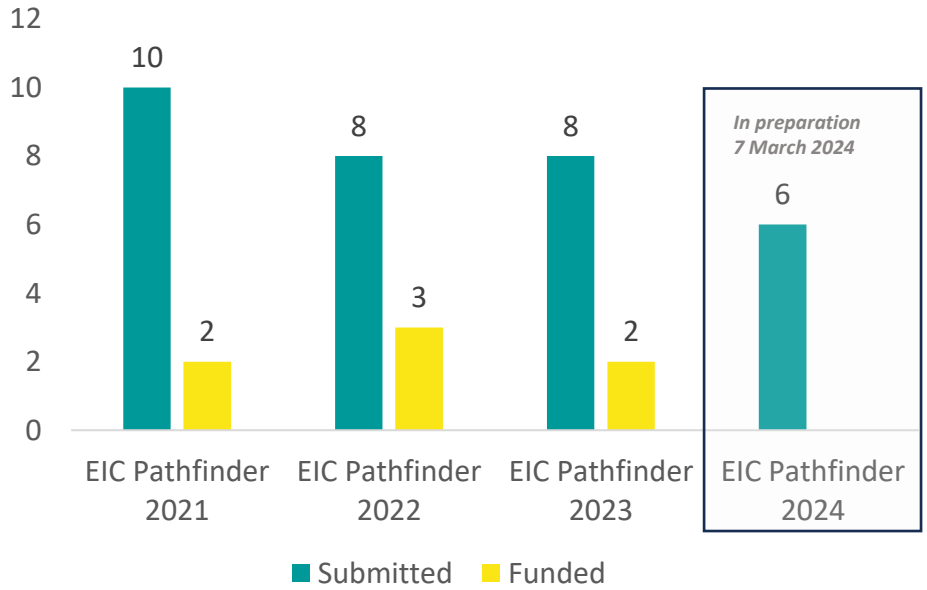
H2020 FET Programme

4 funded FET OPEN projects/24 submitted



Horizon Europe EIC Programme

7 funded Pathfinder projects/26 submitted



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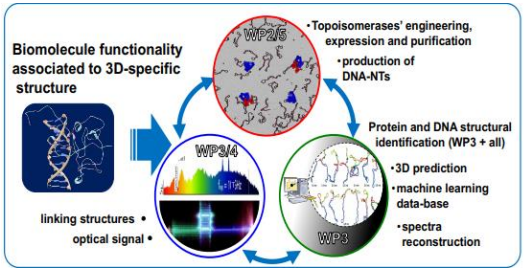
EIC Pathfinder Open projects: some examples

iSenseDNA
Computation driven development of novel in vivo-like-DNA-nanotransducers
*Partner- PI: Aitziber Cortajarena
01/10/2022-30/09/2026 (48M)

Advanced **research on emerging technologies**



iSenseDNA Consortium – 8 partners

7universities and research centers and infrastructure facilities

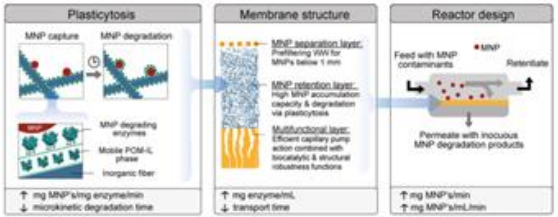
UPPSALA UNIVERSITET · DESY. · CIC biomaGUNE · ESRF

1 SME (biotech company)

OT Organic Therapeutics

BMREx
Biocatalytic membranes for micro/nano plastic degradation within waste-water effluents
Role:
*Partner- PI: Fernando López
01/04/2023-30/09/2026 (42M)

Advanced **research on emerging technologies**



6 Research Labs and Universities

INMA Instituto de Nanociencia y Materiales de Aragón · Universidad Complutense Madrid · DTU · CIC biomaGUNE · Gutenberg Universität Mainz · JGU · Swansea University Prifysgol Abertawe

3 Industrial Partners

CETAQUA · REPSOL · ASA

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Biomolecular Nanotechnology Lab

Main research lines/research interests

- ✓ Protein (DNA) engineering
- ✓ Biomolecular assembly
- ✓ Biomolecule-nanomaterial composites
- ✓ Protein-based materials
- ✓ Biomedical applications: therapy and diagnosis
- ✓ Technological applications: catalysis, bioelectronics, data storage, lighting

5 Projects EIC Pathfinder &FET Open

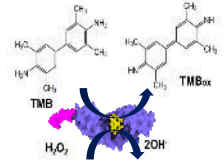
Sense DNA · DEDNAED · e-Prot · DNA FAIRYLIGHTS · ARTILED

Scientific approach:

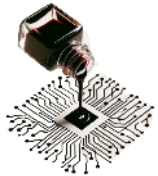
Customizable module

Engineered protein

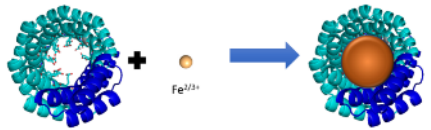
Technological applications:



Catalysis for diagnostics



Conductive inks for bioelectronics



MRI contrast agents

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Engineered Conductive Proteins for Bioelectronics

e-Prot

This project has received funding from the European Union's Horizon 2020 FET Open under the grant agreement No: 964593

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e-Prot

Engineered Conductive Proteins for Bioelectronics

Key facts

about the project:

48	8	5	3.1
MONTHS DURATION	INTERNATIONAL PARTNERS	COUNTRIES INVOLVED	M€ OVERALL BUDGET

Consortium

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CIC energiGUNE
MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE

Universitat d'Alacant
Universidad de Alicante

CiQUS
Center for Research on Biological Chemistry and Molecular Materials

CICECO
AVEIRO INSTITUTE OF MATERIALS

Smart Fabric Inks
www.fabinks.com

SPECIFIC POLYMERS

IKI Ben-Gurion University of the Negev

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e-Prot

e-Prot vision:

The rational design of efficient conductive protein systems (e-Ps), and the fabrication of ***all-protein based conductive*** structures and materials, targeting a **radical change in design of green electronic** and **energy storage devices**

The problem

Increasing amount of hazardous waste

Low biocompatibility

Biodegradability issues

The need and opportunity

Growing demand for green electronics

circular electronics initiative

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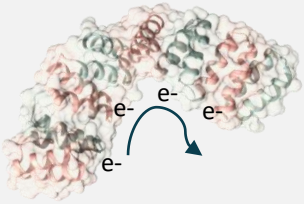
e-Prot

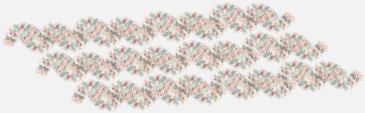
Our technology

Protein module

Self-assembly



Engineered conductive protein



Protein-based conductive fibers

Protein-based conductive ink

Protein-based conductive electrolytes

Protein modules self-assembled like LEGO blocks

Modules can be independently engineered to modulate conductivity

Easy scalability

Biocompatible & biodegradable conductive inks, electrolytes

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e-Prot

Potential applications

Protein-based conductive devices

Implants

Tissue engineering

Wearable devices

Biosensors

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e-Prot

Increasing impact of eProt Project outcomes

IPR and Exploitation

- CIC biomaGUNE as coordinator has nominated an "**Innovation Manager**" dedicated to the eProt project.
- Innovation manager will receive specific Training in Entrepreneurship from **EIC "Innovation Discovery Training" modules** (first training on the 12Feb 2024).
- Monitor the progress of the eProt innovations and individual exploitation plans. Monitor possible patentability of results

Communication and Dissemination

- Open Science practices
- Preparation of Scientific Publications. Open Access
- Attending to Scientific Conferences and Events
- Stakeholder engagement.
- Increase impact by an atractive **Project Webpage**.
- Social Media and other channels.

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e-Prot

Organization of the ESAB 2024 Congress

Registration is open

https://www.biophysicssansebastian2024.com/

Satellite Workshop (4th-5th June 2024) for early-stage-researchers- early career researchers will have the opportunity to present their research in topic specific round tables with senior researchers.

Bioelectronics focus session (eProt) will be organized.

CONFERENCE ORGANIZERS

SBE Spanish Biophysical Society
SFB
SPBf Sociedade Portuguesa de Biofísica
EBSA Biophysics in Europe

LOCAL ORGANIZERS

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Collaborators

CIC bioGUNE · DIPC · Biofisika Institute

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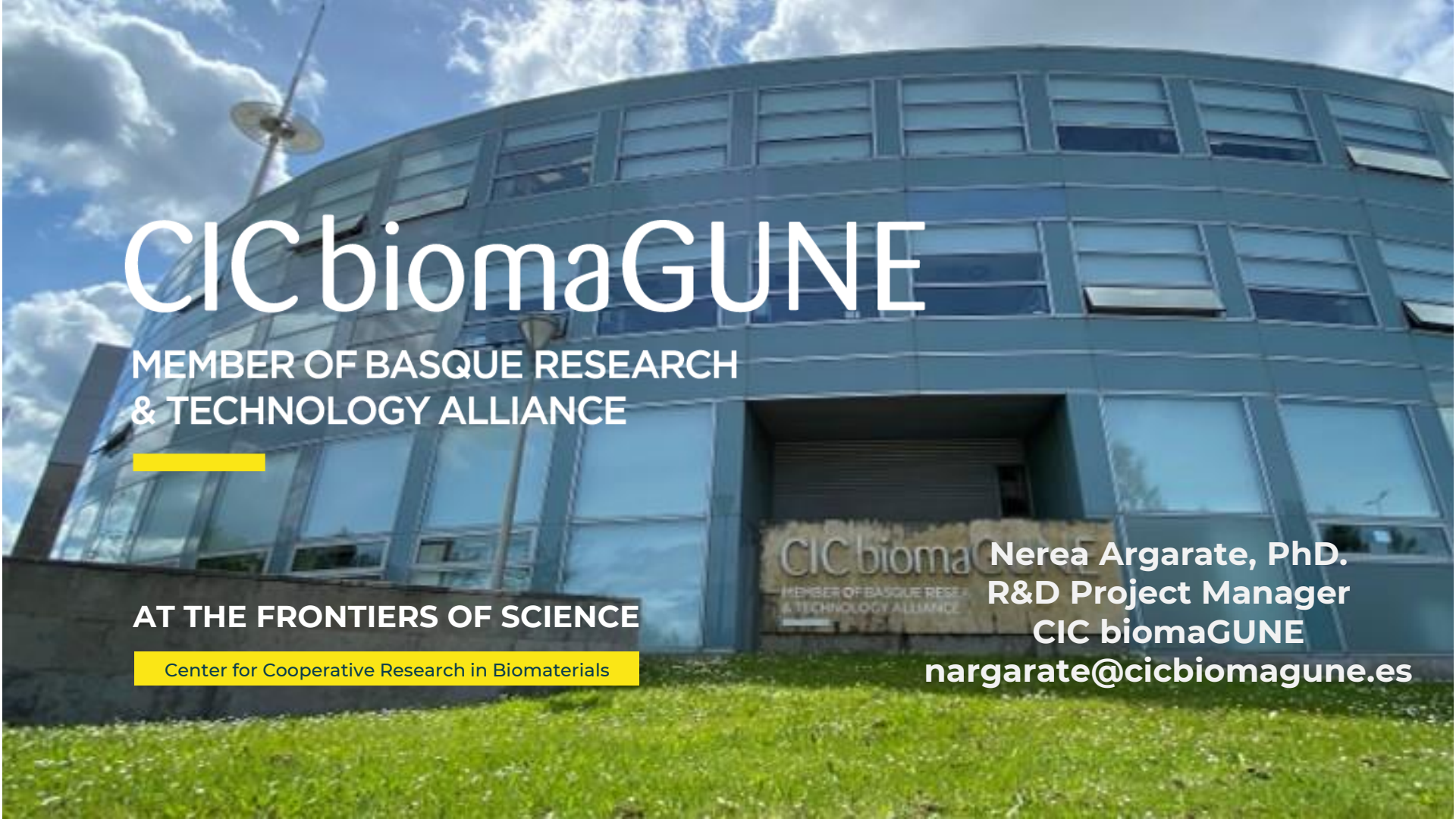
Lessons learned – EIC Pathfinder Projects

1. Disruptive, breakthrough technologies development (low TRL)
2. High IPR potential of research outputs. Need to monitor continuously patent options
3. Explore Market opportunities for your technology: from Lab to commercial settings
4. Highly recommendable to include Industrial partners: exploitation, market analysis
5. Identify future visionary entrepreneurs (Access to EIC training opportunities, Business Acceleration services, Tech to Market trainings)
6. Be active in Communication and Dissemination of results



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