

# The experience of a POC Grantee technological innovation

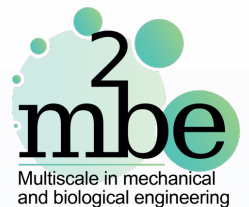
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# Applying for a Proof of Concept (or PoC)

- Motivation and identifying the idea/concept
- Writing the project
- The evaluation
- My experience

# Why should you apply for an ERC PoC?

- Because it is an excellent opportunity to transfer your scientific knowledge to the industry and/or market
- Because it allows you to explore if your innovative research can be useful to other researchers
- Because it can be very helpful to validate one idea/concept and evaluate the existence of a market need at an early stage
- Advantages in comparison with other types of projects:
  - It is not a scientific Project
  - It is a natural derivation of your ERC project
  - It is a very **open project** that can have very different objectives, always with the aim of getting your idea to market

# Why should you apply for an ERC PoC?

- It is an opportunity to transfer your scientific knowledge to the industry
- It is an exploratory process to investigate if your innovative research can be useful to other researchers
- It can be very helpful to validate one idea/concept and evaluate the existence of a market need at an early stage
- Advantages in comparison with other types of projects:
- It is always positive, because even if it is not accepted:
  - It is the first point at which you can check if your idea has any chance of being transferred.
  - The time used in writing this grant is never lost: improving the knowledge and the possibilities of your idea
  - You can discover weak points of your idea

# Writing the project

- **These grants are specifically designed for extending the scope of the conducted research beyond the academia**
- We have to clearly identify the expected innovation
- Key aspects to be included in the proposal:
  - Define the POC idea, including what the idea is trying to achieve, objectives and resources needed.
  - Develop a clear plan for protecting and managing your **intellectual property**.
  - Conduct thorough **market analysis** to understand the potential and positioning of your product or innovation.
  - Build a **right team** with the necessary skills and experience to drive the project forward, involving experts in market research and business development



# The evaluation

- These projects present a single-stage submission and single-step evaluation procedure
- Three main evaluation criteria:
  - **Breakthrough innovation potential:** Proposals will have to demonstrate that the proposed PoC activity has the potential to drive innovation and business inventiveness and that the proposed expected outcomes are innovative or distinctive compared to existing solutions.
  - **Approach and methodology:** The proposed PoC activities and planning are feasible within the proposed timescales and resources , and are appropriate and effective to explore the pathway from ground-breaking research towards innovation.
  - **Principal Investigator - strategic lead and project management:** The Principle Investigator needs to demonstrate a clear vision on how to organise the management of the project, the consolidation of information and data needed to take strategic decisions and implement the proposed plan, including risk and contingency measures.

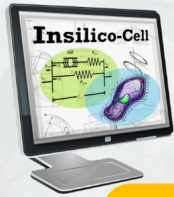
# My experience

- My profile
- 1<sup>st</sup> ERC Proof of Concept: **IMAGO**
- 2<sup>nd</sup> ERC Proof of Concept: **VASTO**

# My profile

- Education:
  - ✓ PhD in Computational Mechanics. UNIZAR (Spain), 1999.
  - ✓ Degree in Industrial Engineering (Mechanical). Universidad de Zaragoza UNIZAR (Spain), 1995.
- Current position:
  - ✓ Full Professor of Structural Mechanics, Department of Mechanical Engineering, Universidad de Zaragoza – UNIZAR (Spain) (since 2008)
- Research group:
  - ✓ Aragon Institute of Engineering Research (I3A), Bioengineering Division
  - ✓ Multiscale in mechanical and biological engineering (M2BE)  
<https://m2be.unizar.es>
  - ✓ Multidisciplinary research group: mechanical, materials and biomedical engineers, biologists, biotechnologists, biochemists, physicists, mathematicians, etc.



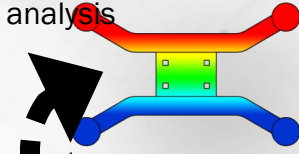


# HOW DO 3D MICRO-ENVIRONMENTAL CONDITIONS GUIDE COLLECTIVE CELL MIGRATION TO REGENERATE TISSUE?

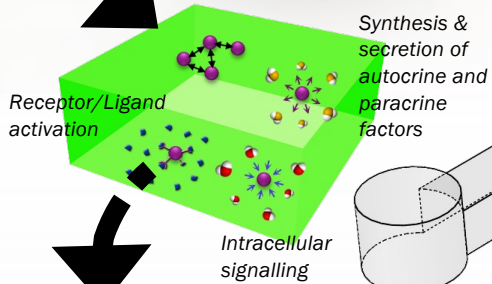
ERC-2012-StG  
277804

## Predictive Simulation

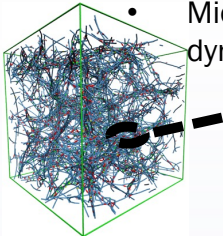
- Macro: continuum analysis



Meso: cell-based approach



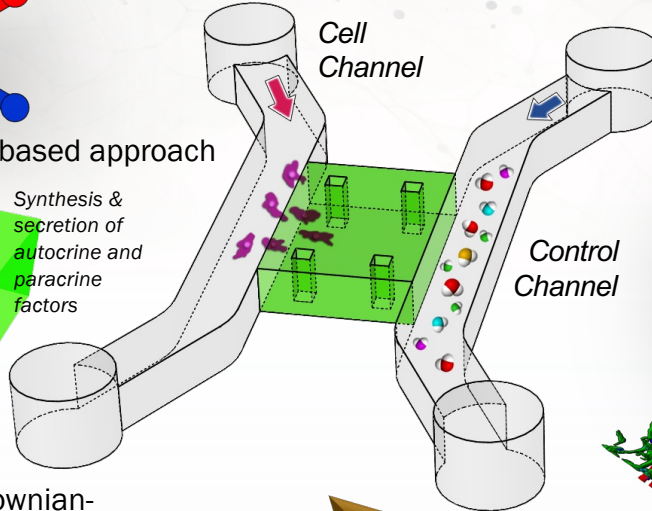
- Micro: Brownian-dynamics



New assumptions



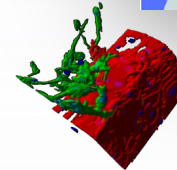
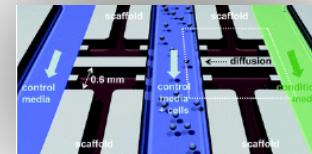
Cell Channel



New Experiments

## Experiments

- Gel scaffold with specific properties
- High control of mechano-chemical conditions

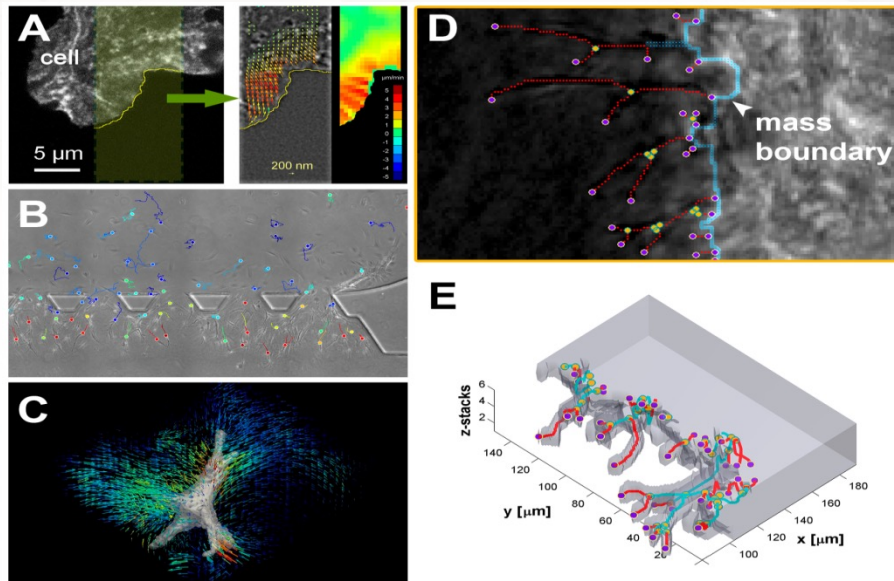


- Accessible image monitoring



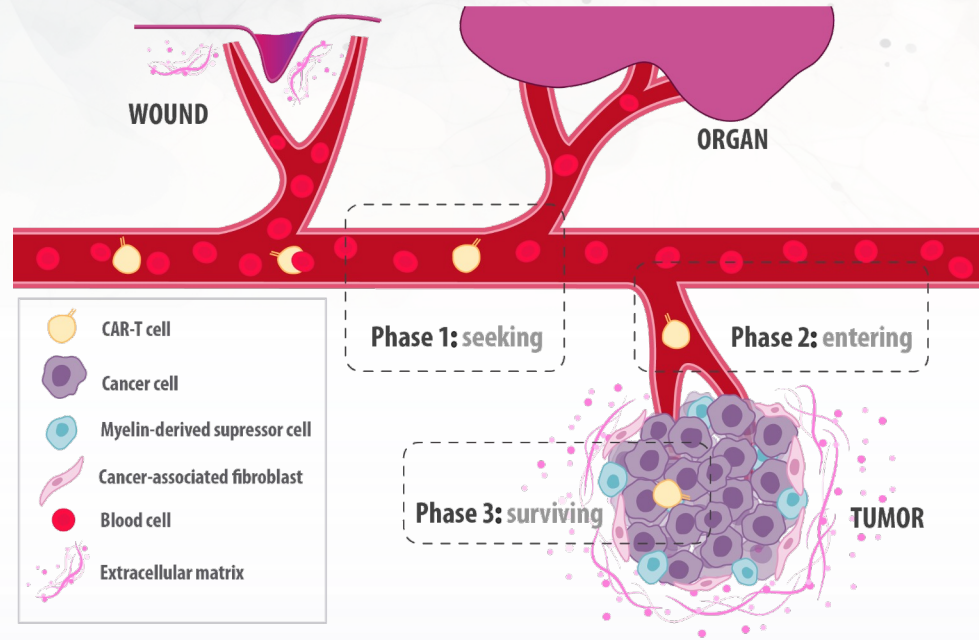
# Image Analysis Online Services for in-vitro experiments

- Computational platform for analysis of in-vitro experiments
- From 2D to 3D
- Online services
- Market analysis
- Collaboration with QUIBIM



H2020 - ERC-2016-PoC  
737543

# Individual and Collective Migration of the Immune Cellular System



**AIM:**  
Advance in the understanding of how immune cells migrate in tumor microenvironments



ERC-2020-ADG  
101018587

European Research Council  
Established by the European Commission

# Could we test these immunotherapies before using them in patients?



- Simplistic model
- Not realistic
- No vascularization

- Reduce animal experiments
- Low control
- Slow and expensive

VASTO 

VAScularised Tumour Organoids on a chip with human placenta vessels as a preclinical model for anticancer therapies

HORIZON ERC Proof of Concept  
ERC-2023-POC -101138214



Funded by the  
European Union



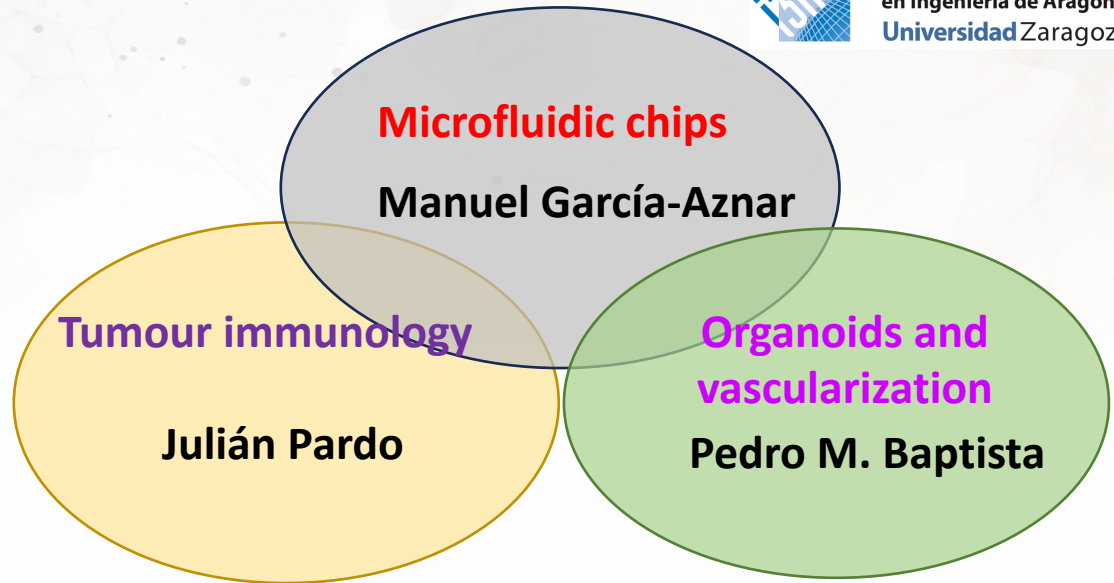
# VASTO structure

- Three step process:
  - 1) Testing the viability of the idea
  - 2) Establishment of a protection and exploitation plan: Patent protection
  - 3) Market analysis and business development: evaluate the possibility of creating an spin-off company



# How did we prepare VASTO?

- Build the right team
- Prepared a first draft

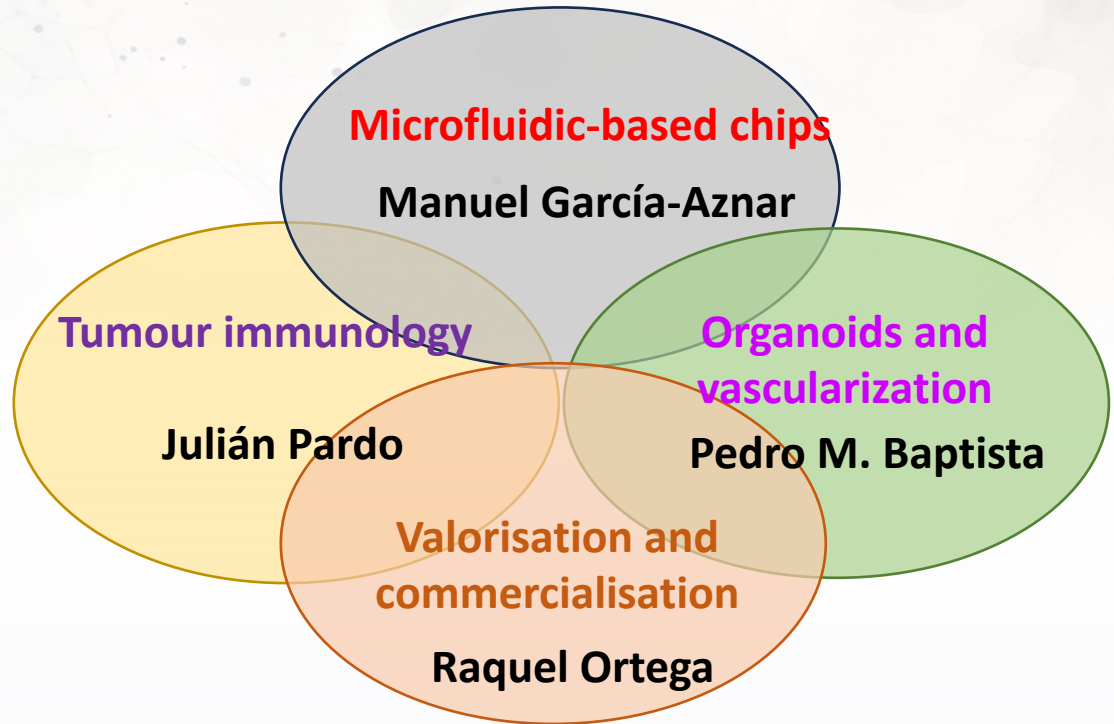


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- Reviewed by the **university's technology transfer office** (Elena Tobias)
- Reviewed by the **European Project service in the I3A** (Alba del Rio) and in the **group M2BE** (Raquel Martin)
- **Stakeholders** are involved in the proposal as collaborators to assess its feasibility and giving us **supporting letters**

THANK YOU VERY MUCH



Funded by the  
European Union

Project number: 101138214

Type of action: HORIZON ERC Proof of Concept Grants

Call: ERC-2023-POC

Granting authority: European Research Council Executive Agency

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