



Palacký University  
Olomouc



**CATRIN**  
Czech Advanced  
Technology and Research  
Institute

# Horizon Europe

– Pillar II and III

– Post-award management

Andrea Nogová

Head of Grant office

CATRIN

# Presentation structure

## 1) Introduction and story of CATRIN

2) What is Horizon Europe? Main features and „EU speak“

3) Pillar II / III projects coordination and how to get there?

4) Post-award management at Palacký University – Institutional culture, Audits, Personnel costs

## Let me introduce myself..

**M U N I**



### 2021 – today

- Head of Grant office
- CATRIN, **Palacký University Olomouc**

### 2018 – 2020

- Grant policy coordinator
- RCPTM, Faculty of Science,  
**Palacký University Olomouc**

### 2017 – 2018

- Technology transfer specialist, Marketing manager
- Technology transfer office,  
**Univerzita Pardubice**

### 2015 – 2017

- International Projects Consultant
- BIC Brno, spol. s.r.o.

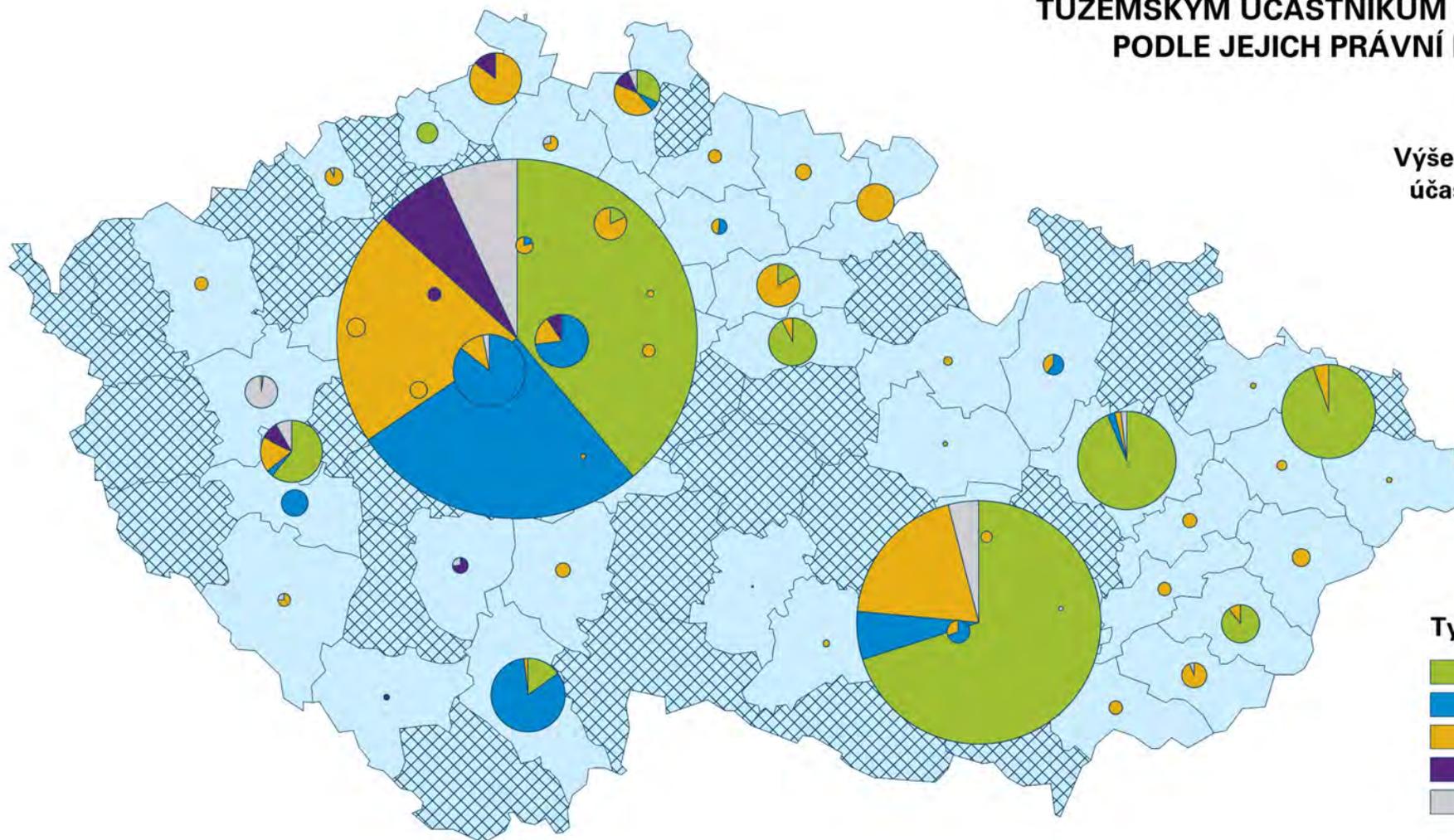
### 2012 – 2015

- Post-award manager, Pre-award support for H2020 projects
- NETME Centre, FME, **Brno University of Technology**

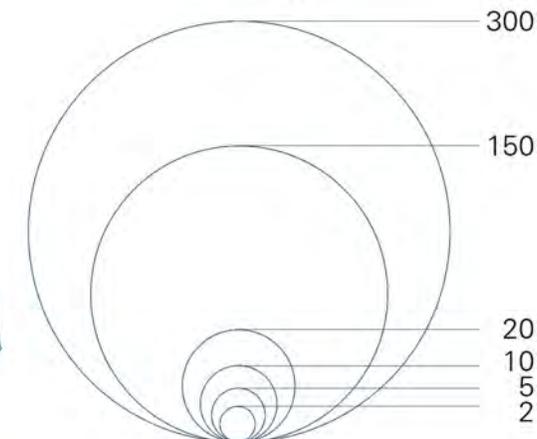
### 2005 – 2012 (Master's degree)

- Human geography and regional development
- **Masaryk University**, FS, Department of Geography

## DISTRIBUCE FINANČNÍHO PŘÍSPĚVKU EU TUZEMSKÝM ÚČASTNÍKŮM PROGRAMU HORIZONT EVROPA PODLE JEJICH PRÁVNÍ FORMY A OKRESU JEJICH SÍDLA k 15. lednu 2026



Výše čistého příspěvku EU (v milionech EUR)  
účastníkům se sídlem v příslušném okrese

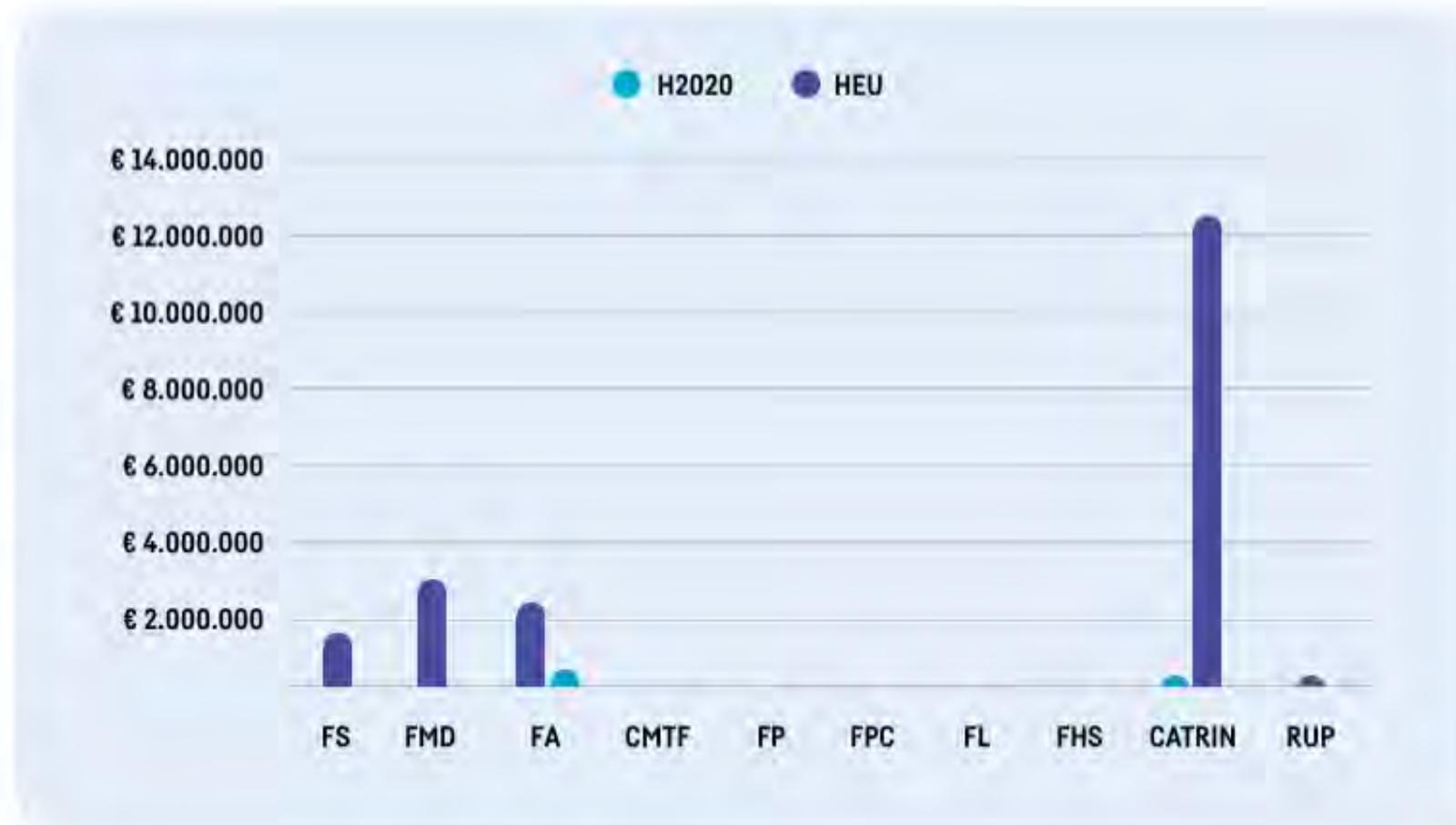


### Typ instituce-účastníka

- vysoké školy a vyšší vzdělávací zařízení
- výzkumné instituce (kromě vzdělávacích)
- soukromé ziskové společnosti
- veřejný sektor (veřejná nebo státní správa)
- ostatní subjekty

## H2020/HEU grants at UP in 2025

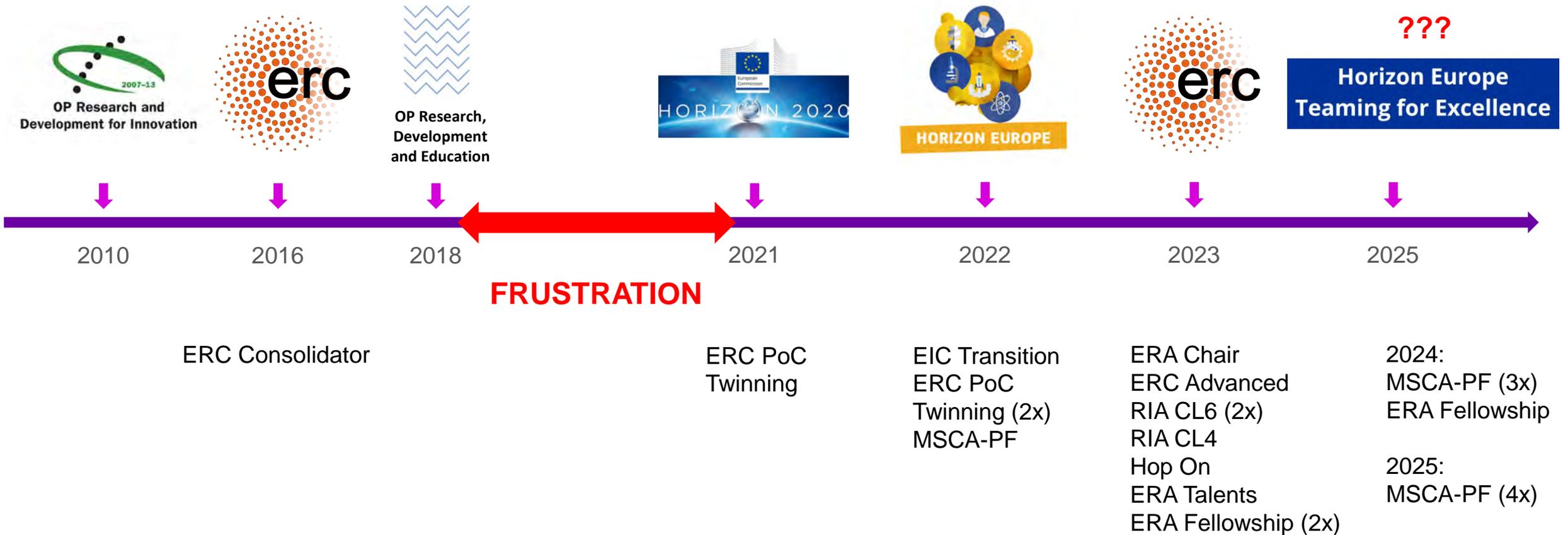
Evropské projekty - rozpočet UP



# Our journey towards H2020/HEU grants since 2010

## MOTIVATION

## BREAKTHROUGH



## Pre-award and post-award support for researchers at CATRIN

- **Project service** at the Rectorate (LEAR, PLSIGH, PFSIGN)
- **Grant office** (CATRIN) – 3 FTE
  - Pre-award support for national and international research grants
  - Sharing information on funding opportunities
  - Consultations on project proposal preparation (structure, budget, templates, proof-reading)
  - Projects submission and evidence
  - Building the community (GO Breakfasts for scientists, CATRIN MSCA Club)
- **Post-award support** (CATRIN divisions, plan to merge it under GO) – ca 10 FTE
  - Implementation of national and international research grants
- **Secretaries** (CATRIN research groups)
  - Daily agenda, including the one connected with projects (travel orders, consumables, invoices etc.)

## How do we work with researchers?

- **GO Digest** – summary of grant funding opportunities (quarterly)
- **MS Teams**
- **Emails**, when something interesting pops up
  
- Head of Grant office is invited to **Director meetings with group leaders**
- **HEU Project plans** for Research groups (when Work programme is published – 2 years)
- **Individual consultations**
  
- **Seminars:** MSCA-PF, GACR, General on HEU
  - Project service (only in Czech, non-useable)
  - TC AV

## Lessons learned

### MOTIVATION + LEADERSHIP + RESISTANCE TO FRUSTRATION

### MUTUAL RESPECT BETWEEN RESEARCHERS, DIRECTORS AND GRANT OFFICE IS A KEY ASPECT!

- **Clearly communicated priority** by management (consistent regular progress control)
- Mental switch from OP VVV grants -----> It is up to you to get the money for your group
- **International partnerships** focused on HEU projects participation, not only scientific collaborations
- **Internal sharing of experience** and templates of successful projects

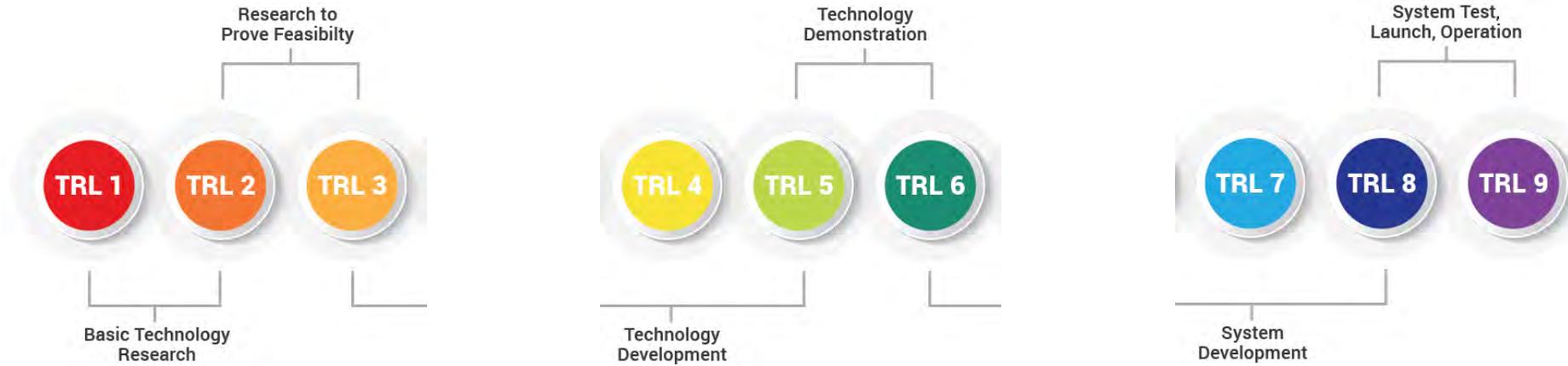
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- 1) Introduction and story of CATRIN
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- 3) Pillar II / III projects coordination and how to get there?
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# 1) What is Horizon Europe?

- **9th Framework Programme for Research and Innovation (2021 – 2027)**
- EU's key funding programme for research and innovation with a budget of **€95.5 billion**
- It **tackles climate change** ([European Green Deal](#)), helps to achieve the [UN's Sustainable Development Goals](#) and boosts the **EU's competitiveness and growth**.
- The programme facilitates intersectoral collaboration and **strengthens the impact of research** and innovation in developing, supporting and implementing EU policies while **tackling global challenges**.
- It supports **creating and better dispersing of excellent knowledge and technologies**.
- It creates jobs, fully engages the EU's talent pool, boosts economic growth, promotes industrial competitiveness and optimises investment impact within a strengthened European Research Area.
- Legal entities from the EU and associated countries can participate.

# Public Funding on Czech / European level according to TRL



## What is your desired career path?

### ACADEMICIAN

Your goal is to establish your own research group and become full time professor in the future.

### INVENTOR

Your goal is to create innovative technology/product. In the future you would like to establish a company.

#### Ph.D./Post-doc:

Mobilities ([Erasmus+](#), [GAČR Postdoctoral fellowship](#), [MSCA Postdoctoral fellowship](#))

#### Post-doc/Senior:

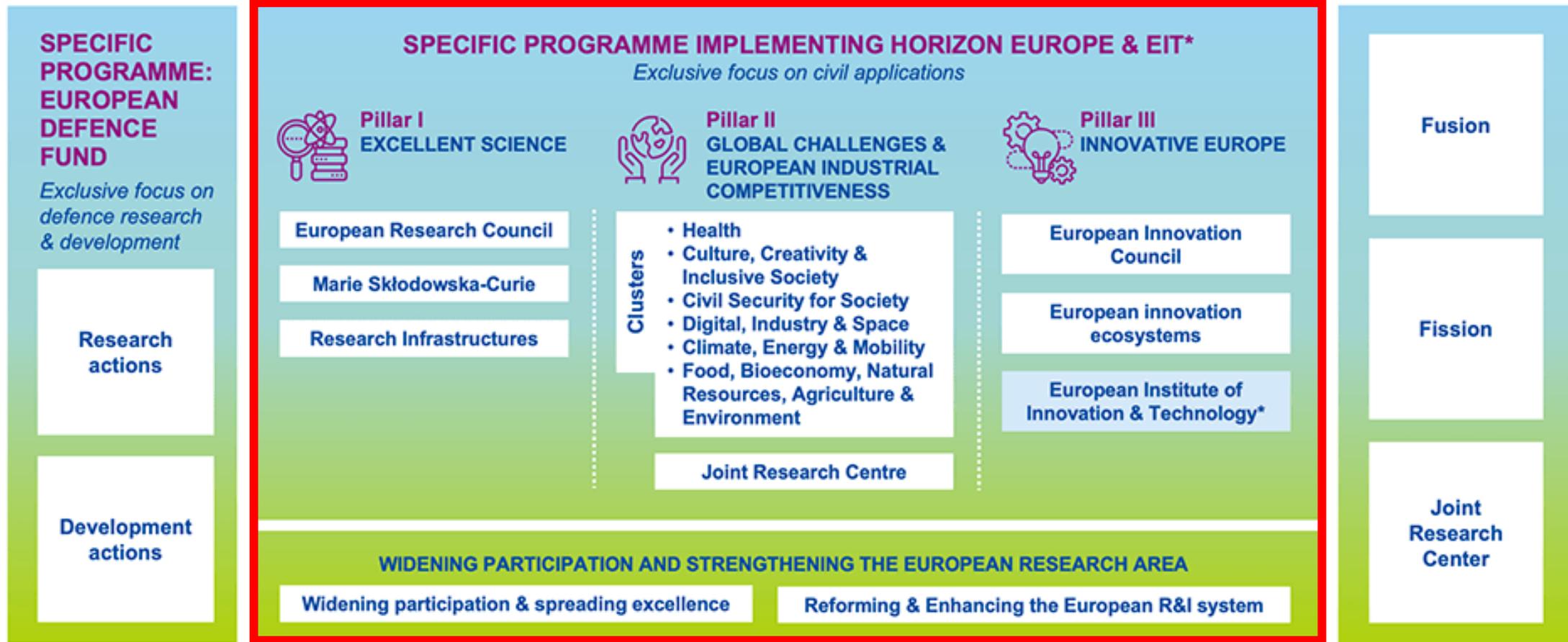
[GAČR Standard/Junior Star/EXPRO](#),  
[HEU ERCs](#),  
[EIC Pathfinder](#) + [Pillar II calls](#) + networking  
([HEU COST Actions](#), [MSCA Staff exchanges](#),  
[MSCA Doctoral networks](#))

#### Post-doc/Senior:

[TAČR](#),  
HEU RIA/IA Actions  
- [Pillar II](#) and [Pillar III](#))

## HORIZON EUROPE

## EURATOM

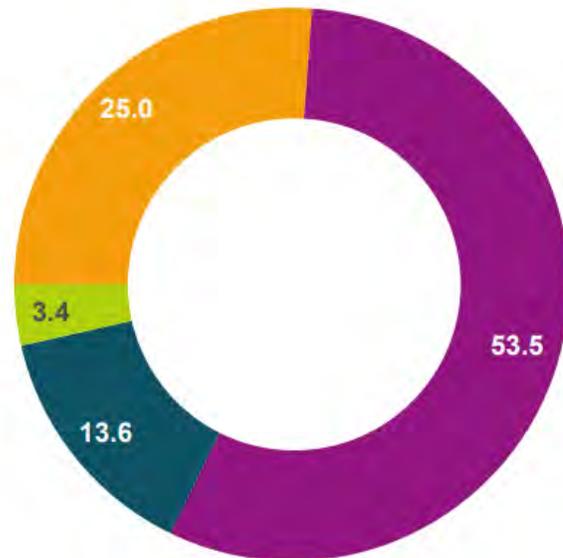


\* The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme

# Budget breakdown

## Horizon Europe Budget: €95.5 billion (2021-2027)

(including €5.4 billion from NGEU – Next Generation Europe – programme of EU for Recovery from COVID-19 crisis)



**Political agreement December 2020**  
*€ billion in current prices*

- Excellent Science
- Global challenges and European ind. comp.
- Innovative Europe
- Widening Part and ERA

**25,0 %**  
Basic research

**67,1 %**  
Innovations

# Pillar I – Excellent Science

The goal of this pillar is reinforcing and extending the **excellence of European Union's science base**. Projects can **focus on any topic** („bottom-up“ principle).

It consists of:

- [European Research Council](#) (€16 billion)

ERC grants are designed to support outstanding researchers under several schemes according to the phase of their carrier development.

- [Marie Skłodowska-Curie Actions](#) (€6.6 billion)

MSCA grants are designed for doctoral and postdoctoral training, equipping researchers with new knowledge and skills through mobility across borders and exposure to different sectors and disciplines.

- [Research Infrastructures](#) (€2.4 billion)

This part supports cooperation between and development of European research infrastructures including e-infrastructure.

## Pillar II – Global Challenges & European Industrial Competitiveness

This pillar supports research projects carried out (mostly) by **international and interdisciplinary consortia**.

Projects will have to address **concrete pre-determined topics** (“top-down” principle).

Calls for proposals are structured into following clusters:

- [Cluster 1: Health](#) (€8.2 billion)
- [Cluster 2: Culture, Creativity & Inclusive Societies](#) (€2.2 billion)
- [Cluster 3: Civil Security for Society](#) (€1.6 billion)
- [Cluster 4: Digital, Industry & Space](#) (€15.4 billion)
- [Cluster 5: Climate, Energy & Mobility](#) (€15.1 billion)
- [Cluster 6: Food, Bioeconomy, Natural Resources, Agriculture & Environment](#) (€8.9 billion)
- [Joint Research Centre: Non-nuclear direct actions](#) (€1.9 billion)

## Pillar III – Innovative Europe

The goal of this pillar is **to stimulate market-creating breakthroughs** and ecosystems conducive to **innovation**.

It consists of:

- [European Innovation Council](#) (€10 billion)  
Support to innovations with breakthrough and market creating potential
- [European Innovation Ecosystems](#) (€0.5 billion)  
Connecting with regional and national innovation actors
- [European Institute of Innovation and Technology](#) (€3 billion)  
Bringing key actors (research, education and business) together around a common goal for nurturing innovation

## Widening Participation and Strengthening the European Research Area

### Widening Participation and Spreading Excellence (€2.96 billion)

- **widening countries** - the goal is to increase participation in HE
- Teaming, Twinning and ERA Chairs projects
- Contribution of the European Union to the COST programme (European Cooperation in Scientific and Technical Research)
- Marie Skłodowska-Curie Postdoctoral Fellowships as ERA Fellowships. Funding high-quality but unsuccessful
- A new “hop-on” mechanism – a way for participants from widening countries to join approved projects carried out by international consortia

### Reforming and enhancing the European research and innovation system (€0.44 billion)

- This part will support projects and activities focused on e.g. Open science, Citizen science, Responsible Research & Innovation, Gender equality and similar.

# Framework programmes planning process

HE Programme (2021 – 2027)

HE Strategic Plan (2021 – 2024,  
2025 – 2027)

HE Work programmes:

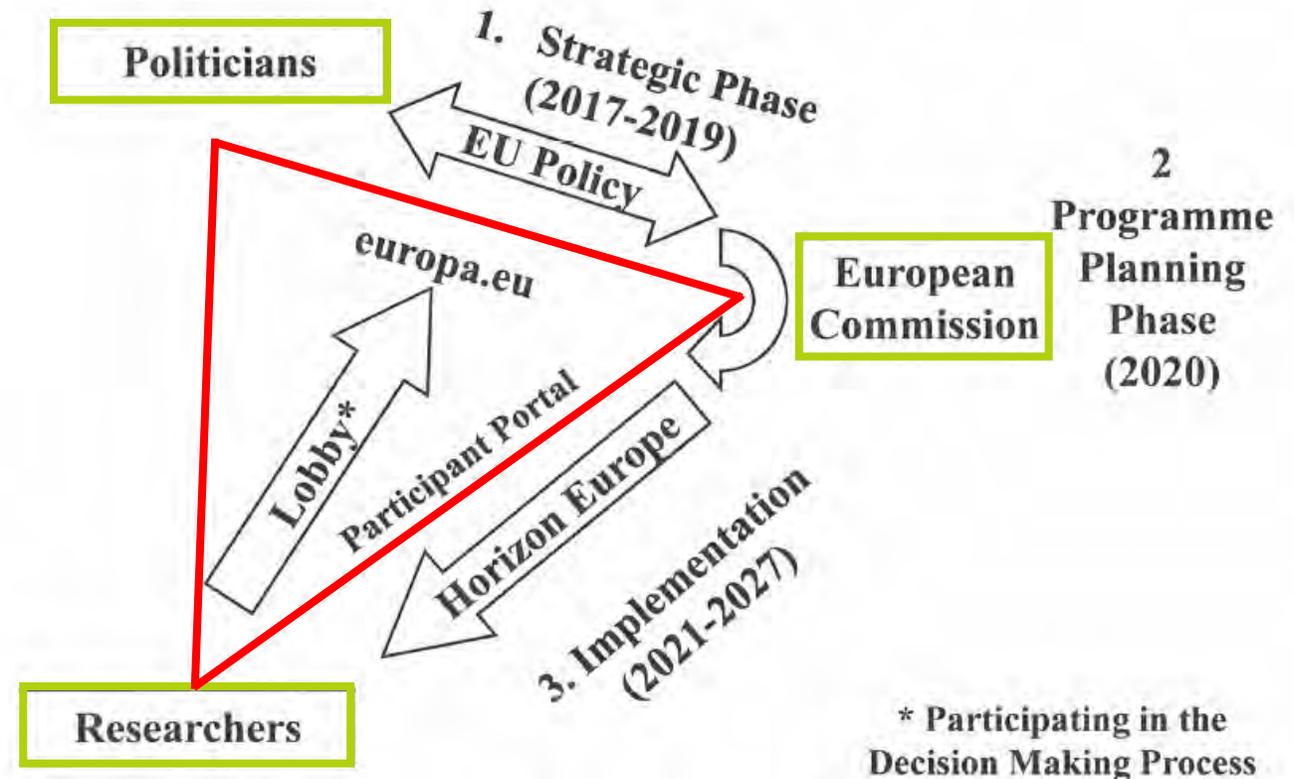
2021 – 2022

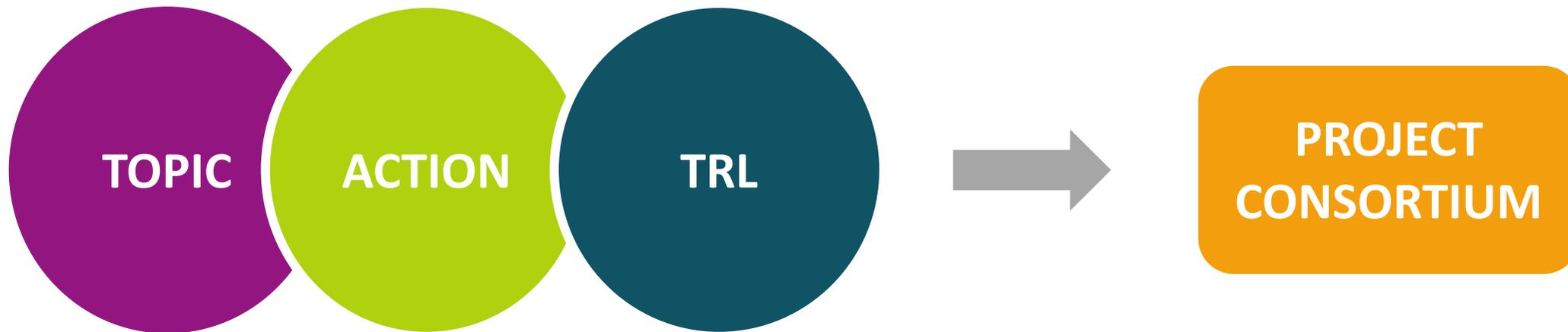
2023 – 2024

2025

2026 – 2027 → → →

<https://sciencebusiness.net/horizon-europe/horizon-papers>





# Topic (Pillar II + III)

Work programme  
Call for proposals  
Expected outcome  
Scope  
Budget  
  
+ Action  
+ TRL

|                                   |   |
|-----------------------------------|---|
| <b>Technology Readiness Level</b> | Activities are expected to achieve <u>TRL 5</u> by the end of the project – see General Annex B. Activities may start at any TRL. |
|-----------------------------------|---|

*Horizon Europe - Work Programme 2026-2027  
Climate, Energy and Mobility*

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**Destinations** ..... 50

**Climate sciences and responses for the transformation towards climate neutrality** ..... 50

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HORIZON-CL5-2026-07-D1-02: Advancing European climate risk assessments ..... 53

HORIZON-CL5-2026-07-D1-03: Economics of climate change and cost of inaction ..... 56

HORIZON-CL5-2026-07-D1-04: Fighting disinformation and effectively communicating on climate change ..... 59

HORIZON-CL5-2026-07-D1-05: Improving climate and weather models for Africa ..... 61

HORIZON-CL5-2026-08-Two-Stage-D1-06: Closing knowledge gaps on Earth system science in support of global and regional assessments and climate policy ..... 64

HORIZON-CL5-2027-01-D1-07: Advancing understanding, modelling and prediction of extreme events in a changing climate ..... 66

HORIZON-CL5-2027-01-D1-08: Palaeoclimate science for a better understanding of Earth system dynamics ..... 68

HORIZON-CL5-2027-01-D1-09: Assessing the performance of policy instruments to inform climate change mitigation action ..... 70

HORIZON-CL5-2027-01-D1-10: Understanding and avoiding maladaptation to climate change ..... 73

HORIZON-CL5-2027-01-D1-11: Africa-EU CO-FUND action on climate ..... 75

HORIZON-CL5-2027-01-D1-12: Better understanding and attribution of land and ocean carbon sources and sinks ..... 78

HORIZON-CL5-2027-01-D1-13: Next generation scenarios for informing climate and sustainability transitions ..... 81

**Cross-sectoral solutions for the climate transition** ..... 85

Batteries ..... 85

HORIZON-CL5-2026-09-D2-01: Producing battery-grade materials for electrodes through sustainable processing and refining of raw materials or developing bio-based materials (BATT4EU Partnership) ..... 85

HORIZON-CL5-2026-03-D2-02: Development of direct recycling processes (BATT4EU Partnership) ..... 88

HORIZON-CL5-2026-10-D2-03: Integrated Production and Product Development for Next-Generation Lithium-based Batteries for Mobility (BATT4EU and Made in Europe Partnerships) ..... 90

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*Horizon Europe - Work Programme 2026-2027  
Climate, Energy and Mobility*

|  |   |
|--|---|
| <i>Financial and operational capacity and exclusion</i>  | The criteria are described in General Annex C.  |
| <i>Award criteria</i>                                    | The criteria are described in General Annex D.  |
| <i>Documents</i>   | The documents are described in General Annex E. |
| <i>Procedure</i>   | The procedure is described in General Annex F.  |
| <i>Legal and financial set-up of the Grant Agreement</i> | The rules are described in General Annex G.     |

**Call - CLIMATE**

*HORIZON-CL5-2026-07*

**Overview of this call<sup>45</sup>**

Proposals are invited against the following Destinations and topic(s):

| Topics  | Type of Action | Budgets (EUR million) | Expected EU contribution per project (EUR million) <sup>46</sup> | Indicative number of projects expected to be funded |   |
|---|----------------|-----------------------|--|---|---|
|   |                | 2026                  |  |   |   |
| Opening: 18 Dec 2025  |                |                       |  |   |   |
| <u>Deadline(s): 15 Apr 2026</u>   |                |                       |  |   |   |
| Climate sciences and responses for the transformation towards climate neutrality              |                |                       |  |   |   |
| <u>HORIZON-CL5-2026-07-D1-01: Next generation climate monitoring and related capabilities</u> | Next           | RIA                   | 15.00  | Around 5.00   | 3 |

<sup>45</sup> The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening. The Director-General responsible may delay the deadline(s) by up to two months. All deadlines are at 17:00 Brussels local time. The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2026 and 2027.

<sup>46</sup> Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

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*Horizon Europe - Work Programme 2026-2027  
Climate, Energy and Mobility*

|  |   |
|--|---|
|  | Research and Training Programme of the European Atomic Energy Community (2021-2025) <sup>47</sup> . |
|--|---|

**Expected Outcome:** Project results are expected to contribute to all of the following expected outcomes:

- Climate data are improved both spatially and temporally, physically more consistent and better exploited across a wide range of users, stakeholders and regions;
- The EU climate data sovereignty is strengthened, with enhanced EU contribution to climate monitoring and climate change assessments;
- Climate information distillation is facilitated by innovative methods to provide useful information to policy making in a more efficient way.

**Scope:** Climate monitoring of Essential Climate Variables<sup>48</sup> at global and regional scales is crucial to assess the state of our climate, its variability and change, and to track progress towards the goals of the Paris Agreement and the corresponding EU climate objectives. Underlying elements, in particular climate data records, reanalyses and forcings, are fundamental to climate science and serve multiple applications across weather, climate, environmental and sectoral domains, generating societal benefits. In turn, methods to distil information from this wealth of data can help extract relevant knowledge and key messages for climate policymaking.

Proposals are expected to address only one of the following priority areas, which should be clearly indicated:

A. Next generation climate data records

Actions should advance innovative methods to enhance, expand and update climate data records, exploit recently rescued and/or new data streams, develop innovative methods to improve the water-energy-carbon cycle physical and bio-geochemical consistency across data records, and improve their applicability for users.

B. Next generation Earth system reanalyses

Actions should undertake research to prepare for the next generation global and European high resolution climate reanalyses. Progress is expected in enhanced data assimilation methods, further coupling the Earth system components, expanding atmospheric composition reanalysis backward in time, piloting carbon-energy-water cycle reanalyses, exploring data-driven methods for reanalyses and applying such improvements in subsequent applications and international initiatives.

<sup>47</sup> This decision is available on the Funding and Tenders Portal in the reference documents section for Horizon Europe, under 'Simplified costs decision' or through this link: <https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/evidence-decision-h2-en.pdf>

<sup>48</sup> [GCOIS Essential Climate Variables](https://www.gcois.europa.eu/)

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# Action

| Type of Grant                          | Minimum partners | Typical consortium | Funding Rate [%] | Activities                       |
|--|------------------|--------------------|------------------|----------------------------------|
| Research and Innovation Actions (RIA)  | 3                | 8 – 15?            | 100              | Applied research and Innovations |
| Innovation Actions (IA)                | 3                | 8 – 15?            | 70               | Innovations                      |
| Coordination and Support Actions (CSA) | 3                | Networks (>20?)    | 100              | Networking, „Soft“ activities    |

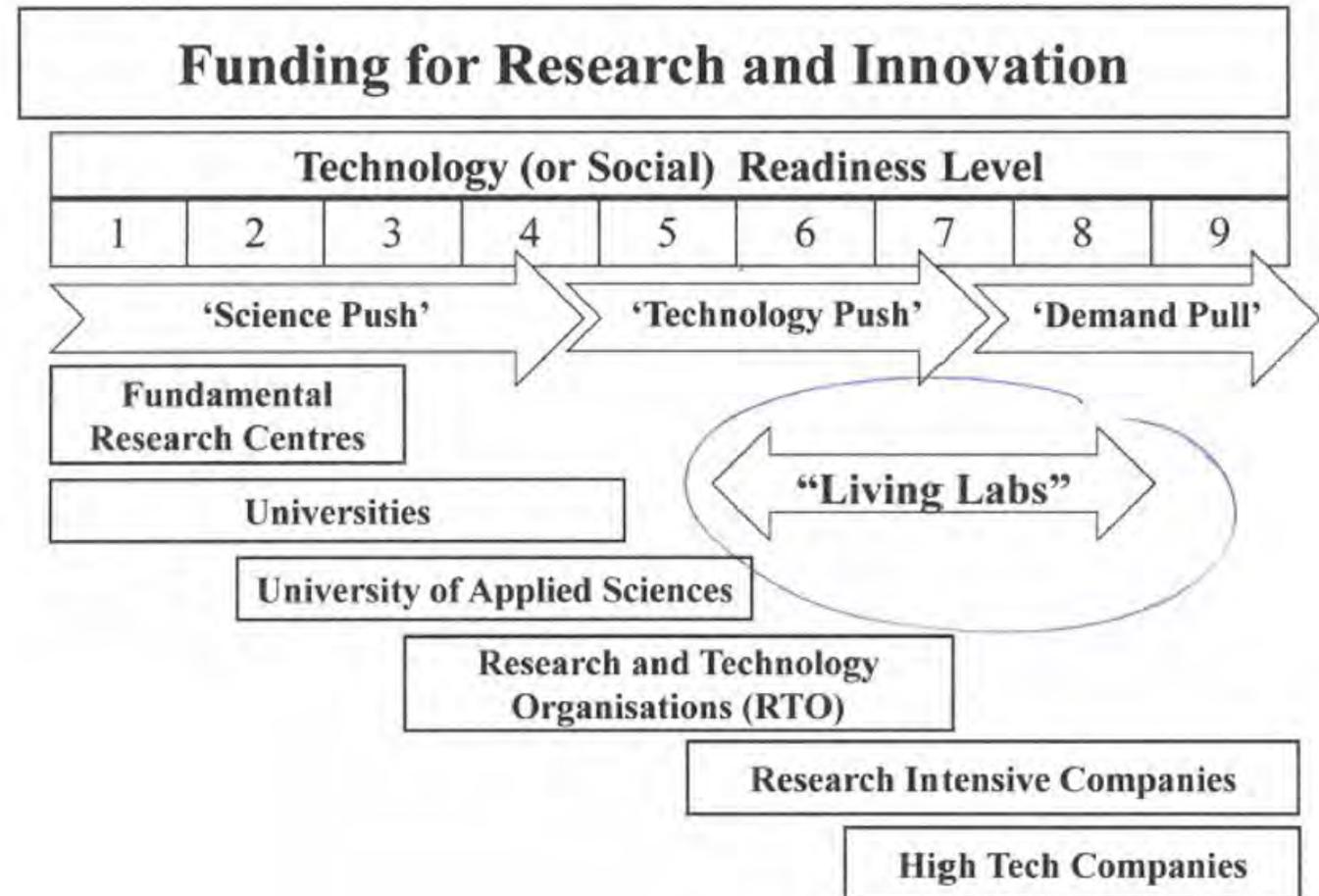
### Research and Innovation Actions (RIAs)

- Research and Innovation Actions (RIAs) are funding instruments that primarily support projects aimed at generating new knowledge, exploring the feasibility of new or improved technologies, or developing the foundations of future technologies, products, processes, or services.
- RIAs focus on fundamental or applied research; technology development and integration; testing and validation of small-scale prototypes in a laboratory or simulated environment.
- Expected outcomes: Advancement of scientific knowledge; Scientific publications, data sets, methods, or early-stage technological results; Contribution to the policy objectives of the Horizon Europe programme
- Funding rate: 100% of eligible costs for all participants; indirect costs are reimbursed at a flat rate of 25% of the eligible direct costs.
- Typical consortium consists of international, multidisciplinary teams; for Pillar II calls, you must apply as a team of at least 3 partner organisations from 3 different EU or associated countries. At least one of the 3 partners must be from an EU country.

### Innovation Actions (IAs)

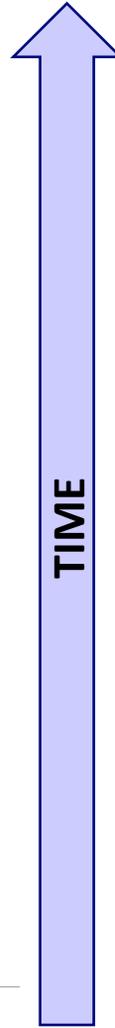
- Innovation Actions (IAs) are HE funding instruments that support projects close to the market—focusing on activities that turn research and technological ideas into practical solutions, such as prototypes, piloting, product validation, or market uptake.
- IAs focus on prototyping, testing, demonstrating; large-scale product validation; market replication and innovation deployment; preparing innovations for commercialization. IAs are crucial for bridging the gap between lab research and real-world application, helping to drive European innovation to market.
- Funding Rate: 70% of eligible costs for most participants; 100% for non-profit legal entities; indirect costs are typically reimbursed at a flat rate of 25% of the eligible direct costs.
- Typical Consortium: Must apply as a team of at least 3 partner organisations from 3 different EU or associated countries. At least one of the 3 partners must be from an EU country; Often includes a mix of research institutions, industry (especially SMEs), and end users or public authorities.

Each Action (RIA, IA, CSA) calls for different type of consortium according to the targeted TRL level.

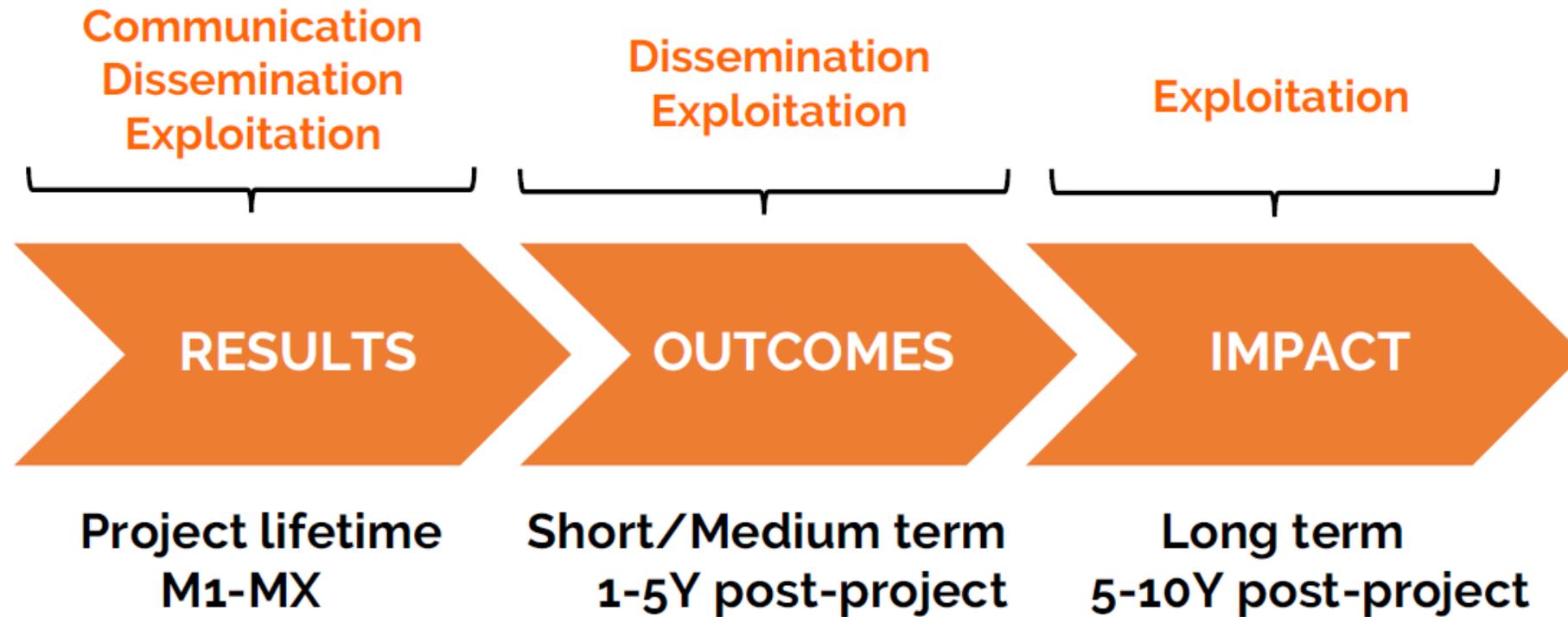


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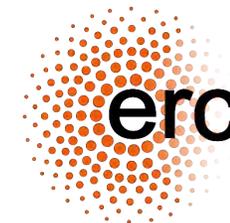


|                        |   |
|------------------------|---|
| <p><b>Impacts</b></p>  | <p>Wider long term effects on society (including the environment), the economy and science, enabled by the outcomes of R&amp;I investments (long term). Impacts generally occur some time after the end of the project. For this call Impacts refers to subsection 2.3</p> <p><i>Example: The deployment of the advanced forecasting system enables each airport to increase maximum passenger capacity by 15% and passenger average throughput by 10%, leading to a 28% reduction in infrastructure expansion costs.</i></p>   |
| <p><b>Outcomes</b></p> | <p>The expected effects, over the medium term, of projects supported under a given topic. The results of a project should contribute to these outcomes, fostered in particular by the dissemination and exploitation measures. This may include the uptake, diffusion, deployment, and/or use of the project's results by direct target groups. Outcomes generally occur during or shortly after the end of the project.</p> <p><i>Example: 9 European airports adopt the advanced forecasting system demonstrated during the project.</i></p>  |
| <p><b>Results</b></p>  | <p>What is generated during the project implementation. This may include, for example, know-how, innovative solutions, algorithms, proof of feasibility, new business models, policy recommendations, guidelines, prototypes, demonstrators, databases and datasets, trained researchers, new infrastructures, networks, etc. Most project results (inventions, scientific works, etc.) are 'Intellectual Property', which may, be protected by formal 'Intellectual Property Rights'.</p> <p><i>Example: Successful large-scale demonstrator: trial with 3 airports of an advanced forecasting system for proactive airport passenger flow management.</i></p> |

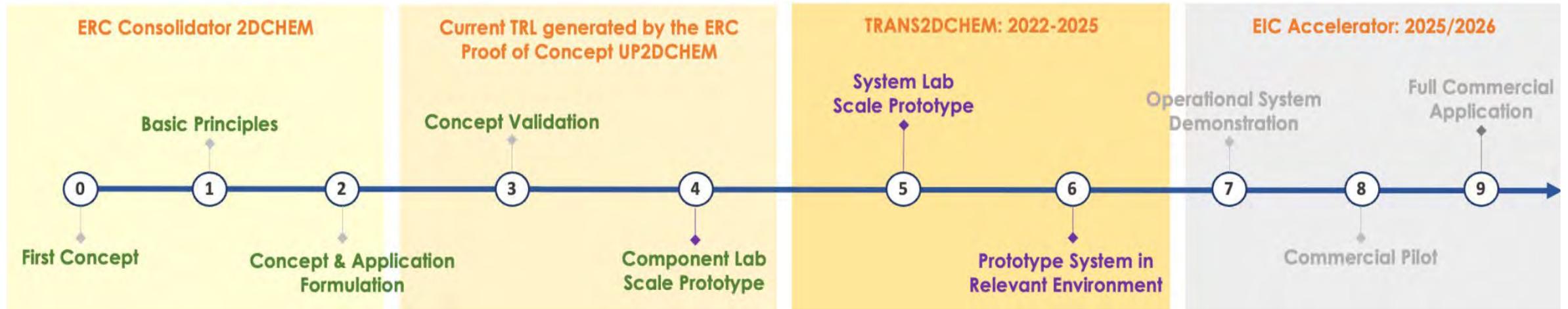


## TRANS2DCHEM: Pillar III – EIC Transition (RIA)

- **Transition of 2D-chemistry based supercapacitor electrode material from proof of concept to applications (101057616)**
- **Coordinator: Prof. Michal Otyepka**
- **Duration: 01/09/2022 – 31/08/2025**
- **Total cost: € 2 485 717,00**
- **Costs for UP: € 1 071 627,00**
- [CORDIS link](#)



# How did we get there?



|                      |           |  |
|----------------------|-----------|--|
| ERC Consolidator     | 2016-2022 | Two-Dimensional Chemistry towards New Graphene Derivatives ( <a href="#">2D-CHEM</a> )   |
| ERC Proof-of-Concept | 2020-2021 | Upscaling of fluorographene chemistry for supercapacitor electrode material ( <a href="#">UP2DCHEM</a> )                                 |
| EIC Transition       | 2022-2025 | Transition of 2D-chemistry based supercapacitor electrode material from proof of concept to applications ( <a href="#">TRANS2DCHEM</a> ) |

### Palacký University Olomouc, CATRIN



PI and  
ERC holder



Senior  
researcher



Junior  
researcher



IPR  
officer



Project  
manager

+



President &  
Founder of  
European Passive  
Component Institute

### Bar Ilan University, BINA



Professor,  
Head of RG



Professor,  
PI

### Itelcond



President &  
Founder

## 2D-BioPAD: HORIZON-CL4-2022-DIGITAL-EMERGING-02 (RIA)

- **Supple Graphene Bio-Platform for point-of-care early detection and monitoring of Alzheimer's Disease (101120706)**
- Coordinator: **Dr. Aristeides Bakandritos**, Group leader
- Duration: 01/10/2023 – 30/09/2027
- Total cost: €5 957 949,50
- Costs for UP: €866 875,00
- [CORDIS link](#)



CATRIN UP



Senior Researcher,  
Group leader

Q-Plan



Grant  
advisor

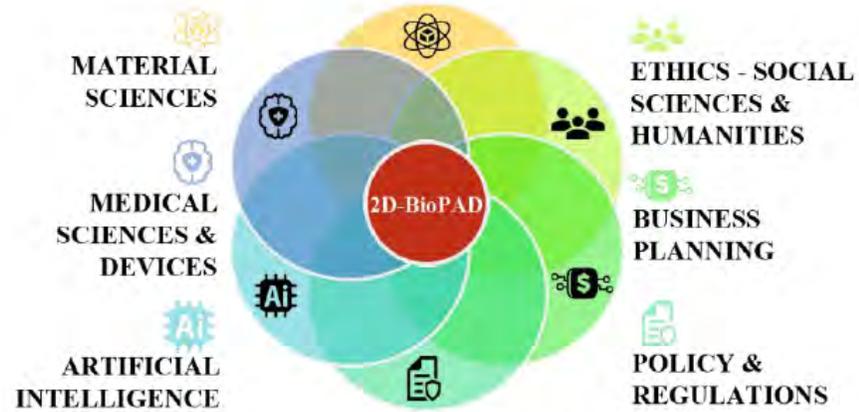
ICN2



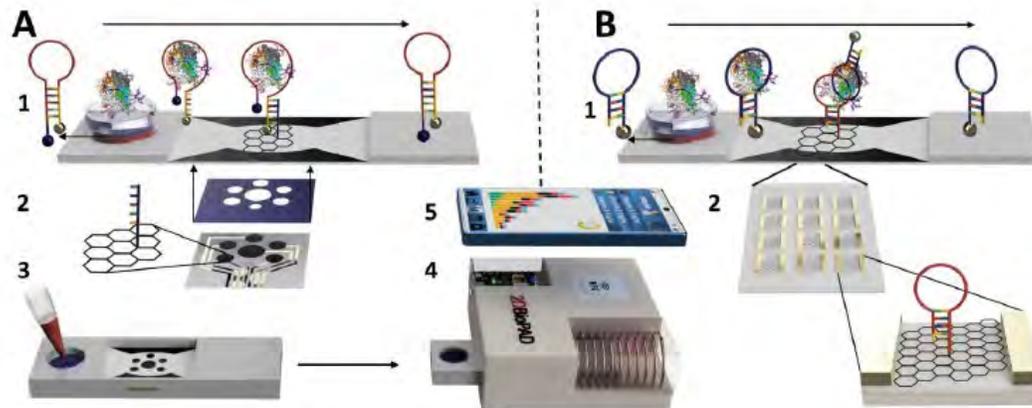
Research professor,  
Group leader

## 2D-BioPAD

2D-BioPAD aims to introduce a fast and cost-effective, non-invasive, reliable, digitally and grapheneenabled Point-of-Care (PoC) *in-vitro* diagnostics (IVD) system for supporting the early diagnosis and progression monitoring of AD directly at primary healthcare settings. To achieve this, and tackle the scientific challenge, the technological and market gap of PoC IVD for AD, 2D-BioPAD leverages the unique properties of 2D materials, such as graphene and its derivatives. Towards that direction, 2D-BioPAD goes beyond the state-of-the-art of its 2D Materials' pioneer consortium (RCPTM, ICN2, GRAPHEAL) to deliver a **graphene-based PoC IVD system** that will (i) introduce a **versatile surface chemistry** that combines nano and DNA technologies towards **improved biocompatibility, stability**, as well as **high sensitivity and specificity for enhanced (bio-) sensing**; (ii) be able to **reliably identify and quantify in real-time and simultaneously up to 5 AD biomarkers in blood samples** effectively supporting healthcare professionals **in early diagnosis**; (iii) offer an easy to use and understand digital interface with key metrics and insights regarding the measured results; and (iv) employ Artificial Intelligence (AI) to improve the overall system implementation. The 2D-BioPAD system and its impact will be demonstrated in **3 clinical centres** in Europe (UEF-Finland, GAARDR-Greece, and ZI-Germany) under **two clinical pilot studies**.



| Participant organisation name   | Country |
|---|---------|
| UNIVERZITA PALACKEHO V OLOMOUCI (RCPTM)                                       | CZECHIA |
| Q-PLAN INTERNATIONAL ADVISORS PC (Q-PLAN)                                     | GREECE  |
| FUNDACIO INSTITUT CATALA DE NANOCIENCIA I NANOTECNOLOGIA (ICN2)               | SPAIN   |
| GRAPHEAL S.A.S. (GRAPHEAL)  | FRANCE  |
| ARISTOTELIO PANEPISTIMIO THESSALONIKIS (AUTH)                                 | GREECE  |
| NOVAPTECH S.A.S. (NOVA)   | FRANCE  |
| ITA-SUOMEN YLIOPISTO (UEF)  | FINLAND |
| ELLINIKI ETAIRIA NOSOY ALZHEIMER KAI SYGGENON DIATARACHON SOMATEIO (GAARDR)   | GREECE  |
| EVNIA APS (EVNIA)   | DENMARK |
| ZENTRALINSTITUT FUER SEELISCHE GESUNDHEIT (ZI)                                | GERMANY |
| National Centre for Applied Data Analytics & Artificial Intelligence (CeADAR) | IRELAND |



## ACCELERATOR: WIDERA ERA Chairs (CSA)

- ERA Chair for Accelerated Synthetic Chemistry Technologies at Palacký University Olomouc (101087318)
- Coordinator: **Ass. Prof. Pavel Banáš**, General director
- ERA Chair: **Prof. Alexander Dömling**
- Duration: 01/02/2023 – 31/01/2028
- Total cost: € 2 499 062,50
- [CORDIS link](#)

### BUT HOW IT ALL STARTED?

#### Palacký University Olomouc, CATRIN



Project  
coordinator



ERA Chair



Project  
manager



## Characterization of Biostimulant Mode of Action Using Novel Multi-Trait High-Throughput Screening of *Arabidopsis* Germination and Rosette Growth

Lydia Ugena<sup>1\*</sup>, Adéla Hýlová<sup>1\*</sup>, Kateřina Podlešáková<sup>1</sup>, Jan F. Humplik<sup>1,2</sup>, Karel Doležal<sup>1</sup>,  
Nuria De Diego<sup>1\*</sup> and Lukáš Spíchal<sup>1</sup>

<sup>1</sup> Department of Chemical Biology and Genetics, Centre of the Region Haná for Biotechnological and Agricultural Research, Faculty of Science, Palacký University, Olomouc, Czechia, <sup>2</sup> Laboratory of Growth Regulators, Centre of the Region Haná for Biotechnological and Agricultural Research, Institute of Experimental Botany, Czech Academy of Sciences, Olomouc, Czechia

## An Automated Method for High-Throughput Screening of *Arabidopsis* Rosette Growth in Multi-Well Plates and Its Validation in Stress Conditions

Nuria De Diego<sup>1</sup>, Tomáš Fůrst<sup>1</sup>, Jan F. Humplik<sup>1,2</sup>, Lydia Ugena<sup>1</sup>, Kateřina Podlešáková<sup>1</sup>  
and Lukáš Spíchal<sup>1\*</sup>

<sup>1</sup> Department of Chemical Biology and Genetics, Centre of the Region Haná for Biotechnological and Agricultural Research, Faculty of Science, Palacký University, Olomouc, Czechia, <sup>2</sup> Laboratory of Growth Regulators, Centre of the Region Haná for Biotechnological and Agricultural Research, Institute of Experimental Botany, Czech Academy of Sciences, Olomouc, Czechia



**Dr. Lukáš Spíchal,**  
Head of Phenotyping group CRH  
CEO AgroBioChem s.r.o.



Prof. Dömling was searching for the Lab that would be able to provide a **high-throughput screening at the whole plant level**, ideally experienced in **valorization** of research results.

## WHAT HAPPENED NEXT?

- 2019 – Prof. Dömling visited Phenotyping group
- 2019 – 2021 – Searching for the ways, how to collaborate (Covid-19)
- 12/2021 – Prof. Dömling came with the idea to apply for ERA Chairs with newly established CATRIN institute → Meeting with Directors and Rector
- 03/2022 - Application submitted
- 07/2022 – Positive evaluations (14.50)
- 10/2022 – GA signed
- 02/2023 – ACCELERATOR project was launched
- 01/2024 – ERC Advanced grant was launched



## AMADEUS: ERC Advanced grant

- **Automated, miniaturized and accelerated drug discovery: AMADEUS (101098001)**
- Principal Investigator: **Prof. Alexander Dömling**
- Duration: 01/01/2024 – 31/12/2028
- Total cost for UP: € 3 409 401,00
- [CORDIS link](#)



## Summary on strategical networking:

- Sign **Memoranda of Understanding** focused on key partners (CATRIN: ICN2, BINA, LIKAT)
- Support participation in **key international initiatives in strategical fields** (CATRIN: European Federation of Biotechnology, The Innovative Advanced Materials Initiative, Graphene Flagship)
- Get involved in **international collaborations** (AURORA Alliance, COST Actions, MSCA DN/SE/COFUND, but also ERASMUS+)
  - Its all about the goals you will apply towards your researchers and their application throughout all tools/activities
  - Provide **seed funding** for collaborative proposals
- Motivate your researchers to **strategically network during conferences** (make them ready using WPs)
- In Pillar II/III projects, the coordination is a long-term goal, it is a way easier to start as:
  - **Task leader** → **Work package leader** → **Consortium leader**

# Presentation structure

- 1) Introduction and story of CATRIN
- 2) What is Horizon Europe? Main features and „EU speak“
- 3) Pillar II / III projects coordination and how to get there?
- 4) **Post-award management at Palacký University – Institutional culture, Audits, Personnel costs**

## How do we recognize and support scientific excellence at UP?

Počet grantů ERC řešených v ČR k 8.12.2025 (hlavní řešitelé a partneři)



| Instituce  | Typ | 7.RP | H2020 | HE | Celkem |
|--|-----|------|-------|----|--------|
| Univerzita Karlova                               | HES | 3    | 9     | 17 | 29     |
| Masarykova univerzita                            | HES | 1    | 8     | 8  | 17     |
| Ústav organické chemie a biochemie AV ČR, v.v.i. | CAS | 2    | 1     | 6  | 9      |
| Biologické centrum AV ČR, v.v.i.                 | CAS |      | 3     | 4  | 7      |
| České vysoké učení technické v Praze             | HES |      | 2     | 4  | 6      |
| Fyzikální ústav AV ČR, v.v.i.                    | CAS | 3    | 1     | 2  | 6      |
| <b>Univerzita Palackého v Olomouci</b>           | HES |      | 2     | 4  | 6      |
| Etnologický ústav AV ČR, v.v.i.                  | CAS |      | 1     | 3  | 4      |
| Ústav molekulární genetiky AV ČR, v.v.i.         | CAS |      | 3     | 1  | 4      |
| Vysoké učení technické v Brně                    | HES |      | 3     | 1  | 4      |
| Národohospodářský ústav AV ČR, v.v.i.            | CAS |      | 3     |    | 3      |

**Only 3 „real“ ERCs for UP!**

**H2020:**

ERC Consolidator (Otyepka)

ERC PoC (Otyepka)

**HEU:**

2x ERC PoC (Otyepka)

ERC Advanced (Dömling)

ERC Consolidator (Steenberg)

## Rune Steenberg, FF UP

### Jak se rodiny vyrovnávají s represivní politikou státu

Na UP Žurnálu jsem se dočetl, že na filosofické fakultě se bude v rámci ERC grantu zkoumat, jak se rodiny vyrovnávají s represivní politikou státu.

**Tomáš Fůrst**, RNDr. Ph.D. (tomas.furst@upoL.cz)

čtvrtek 11. prosinec 2025, 7:42 [Udržitelná univerzita](#)

9 (nepřečtených: 9) | poslední komentář: 19. 12. 2025, 21:07 od **Tomáš Fůrst**, RNDr. Ph.D. (tomas.furst@upoL.cz)

No konečně – zajásal jsem – konečně bude možné za peníze Evropské Unie zdokumentovat,

- jak se rodiny vyrovnaly s tím, že jim stát zavřel kostely a školy,
- jak se rodiny vyrovnaly s tím, že jim stát zakázal chodit ven,
- jak se rodiny vyrovnaly s tím, že jim stát přikázal nosit roušky, o kterých se vědělo, že nefungují,
- jak se rodiny vyrovnaly s tím, že stát nutil jim a jejich dětem experimentální genovou terapii proti covidu, která není ani bezpečná ani účinná,
- jak se rodiny vyrovnaly s tím, že stát odpíral jejich nemocným členům a příbuzným účinnou léčbu a místo toho je terorizoval, děsil a zakazoval jim návštěvy příbuzných,
- jak se rodiny vyrovnaly s tím, že jim příbuzné zavírali do vězení za veřejné vyjadřování názorů,

No ale pak jsem četl dál. Tak zpět, nic z výše uvedeného se zkoumat nebude. Budou se zkoumat Kazaši a Ujgurové v Číně. Tak snad v příštím ERC grantu ...

## Alexander Dömling, CATRIN UP



EUROPEAN COMMISSION  
EUROPEAN RESEARCH EXECUTIVE AGENCY

Directorate C: Future Society  
Unit C3: Widening Participation

Brussels, 03/03/2023

**Pavel BANAS**  
UNIVERZITA PALACKÉHO V  
OLOMOUCI  
KRIZKOVSKÉHO 8  
771 47 OLOMOUC  
CZECHIA

Can you please provide the following information to REA **at the latest by 13/03/2023**:

- Clarification on the contractual arrangements/links between your institution Palacký University – CATRIN, Innovative Chemistry Department and Prof. Alexander Domling before 15<sup>th</sup> of March 2022 and between 15<sup>th</sup> of March 2022 and the 31<sup>st</sup> of January 2023, providing any supporting documents you deem necessary to clarify the issue.
- Your views on the public article which specifically mentions The Accelerator project and your ERA Chair holder.

<https://forbetterscience.com/2023/02/14/schneider-shorts-17-02-2023-a-universal-cure-of-high-moral-excellence/#olomouc>

## Talent management for developing future ERC and HEU Pillar II/III applicants

- Strong participation in **Horizon Europe Pillar II/III projects** depends on **long-term academic networks and trusted collaborations**.
- Successful consortia rarely emerge ad hoc - they grow from **years of mobility, networking, and institutional engagement**.
- Universities therefore need **systematic talent development pipelines** that prepare researchers to become:
  - ERC applicants and holders,
  - consortium coordinators or key partners in Pillar II,
  - innovators contributing to Pillar III initiatives.

➤ **Core principle: Support proactive researchers with ideas and ambition!**

## Attracting and retaining ERC-level talent

- **Strategic recruitment of ERC holders** (additional yearly budget - MUNI).
  - Use national schemes (e.g., **ERC CZ, GAČR**) to:
    - retain researchers who nearly obtained ERC,
    - allow researchers to establish independent research topics/groups (CATRIN: New group with ERC StG, GAČR JS),
    - **collaborate with GAČR and support grants with excellent evaluations** (MUNI; could replace Junior grants at UP with untransparent evaluation process).
  - Provide:
    - seed funding, team-building support, proposal preparation support, infrastructure access.
- **The aim is to create internal excellence hubs that attract collaborators and future projects.**

## Building the pipeline for future ERC and HEU leaders

### Early Career

- mobility programs (ERASMUS+, postdoc stays)
- international collaboration (COST Actions, MSCA)
- participation in networks (MSCA DN, AURORA)

### Mid Career

- coordination roles in smaller projects (GAČR, TAČR, Junior grants UP)
- leadership training
- proposal writing experience (high-level mentoring, hubs of excellence)

### Advanced Stage

- ERC applications
- coordination of **Pillar II consortia**
- involvement in **innovation ecosystems (Pillar III)**
- Seniors and professors should not predominantly apply for GAČR projects!

- Centralization of audits of H2020/HEU projects at PSUP
- Establishment and monitoring of compliance with **unified rules** for the implementation of H2020/HEU projects at UP
- Unified system for recording and managing grants throughout their entire lifecycle (**CRIS system**)
- **RISK: Systemic errors**

## Crucial issue: Personnel costs

<https://www.horizontevropa.cz/cs/mohlo-by-vas-zajimat/pravni-financni-aspekty/financni-administrativni-aspekty/yifnews/2680>

| FINAL GENERAL CONTROLS |  |  |
|------------------------|--|--|
| No                     | Conditions   | Procedures   |
| 1                      | Overall reliability of systems and procedures          | Signal other facts and findings which put into question the eligibility of costs (or compliance with the Grant Agreement more generally).<br>Quantify the amounts at risk.   |
| 2                      | Systemic or recurrent nature of errors, irregularities | Signal systemic or recurrent errors or irregularities that justify an audit extension procedure.<br>Describe the errors/irregularities and why they are systemic/recurrent.<br>Request the participant to recalculate the declared costs by removing the systemic/recurrent errors.<br>Verify the recalculation and propose adjustments for the impact of systemic or recurrent errors identified for all costs declared in the audited periods of the audited projects. |

- Post-award managers from CATRIN UP proposed a **Procedure for reporting personnel costs in Horizon Europe projects**
- The proposal was discussed and agreed with the Czech NCPs for financial issues and with project managers from PSUP and UP faculties at the **Pro-Horizon meeting (28 November 2024)**.
- It is necessary to **formalize this procedure as an internal regulation** to ensure that everyone follows one methodologically correct approach.
- This is usually the most problematic part, as the calculation of eligible personnel costs in Horizon Europe projects differs significantly from what we are used to in national grant schemes and is therefore highly unintuitive.

➤ **Aim is to mitigate the risk of systemic errors!!**

## **CZARMA REGON – duben 2026: Jak vytvořit pozitivní prostředí pro vědu a výzkum: sdílení dobré praxe z Velké Británie**

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**1. dubna 2026**  
**10:00 – 12:00**

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**Olomouc, Zasedací místnost děkanátu Filozofické fakulty**  
**Univerzity Palackého v Olomouci (zadní trakt, 1. patro),**  
**Křížkovského 10, Olomouc**

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Vytváření pozitivního prostředí pro vědu a výzkum se v posledních letech stalo klíčovou prioritou britského vysokého školství. Pod vlivem nástrojů, jako je celonárodní audit 'Research Excellence Framework' (REF), národních kodexů a závazků v oblasti integrity výzkumu, inkluze a rozvoje kariér, si britské univerzity stále více uvědomují, že excelentní výzkum nestojí pouze na výstupech, ale především na lidech, jejich chování, na kvalitě vedoucích týmu, a na dobře nastavených procesech.

Jaké nástroje rozvoje výzkumného prostředí by mohlo české prostředí převzít či se při nejmenším inspirovat při budování pozitivní a udržitelné kultury výzkumu?

Věra Barronová představí konkrétní nástroje a strategie používané ve Velké Británii, například průzkumy výzkumné kultury, rozvoj leadershipu, přístupy založené na spoluvytváření či strukturální intervence, a nabídne prostor k reflexi jejich možné adaptace do českého prostředí.



Palacký University  
Olomouc



**CATRIN**

Czech Advanced  
Technology and Research  
Institute

Andrea Nogová  
Head of Grant office  
CATRIN

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