

**The Education, Scholarships, Apprenticeships and Youth Entrepreneurship  
Programme – EEA Grants 2014-2021**

# **Cooperation strategy for knowledge transfer, internationalization and curricula innovation in the field of research education at the 3rd level of study – AURORA**

Diana Tomuleasa, PhD

JULY 19th 2023

HOTEL GOLDEN TULIP, CLUJ-NAPOCA



# AURORA Info

---

**Project Acronym:** AURORA

**Project No.:** 20-COOP-0085

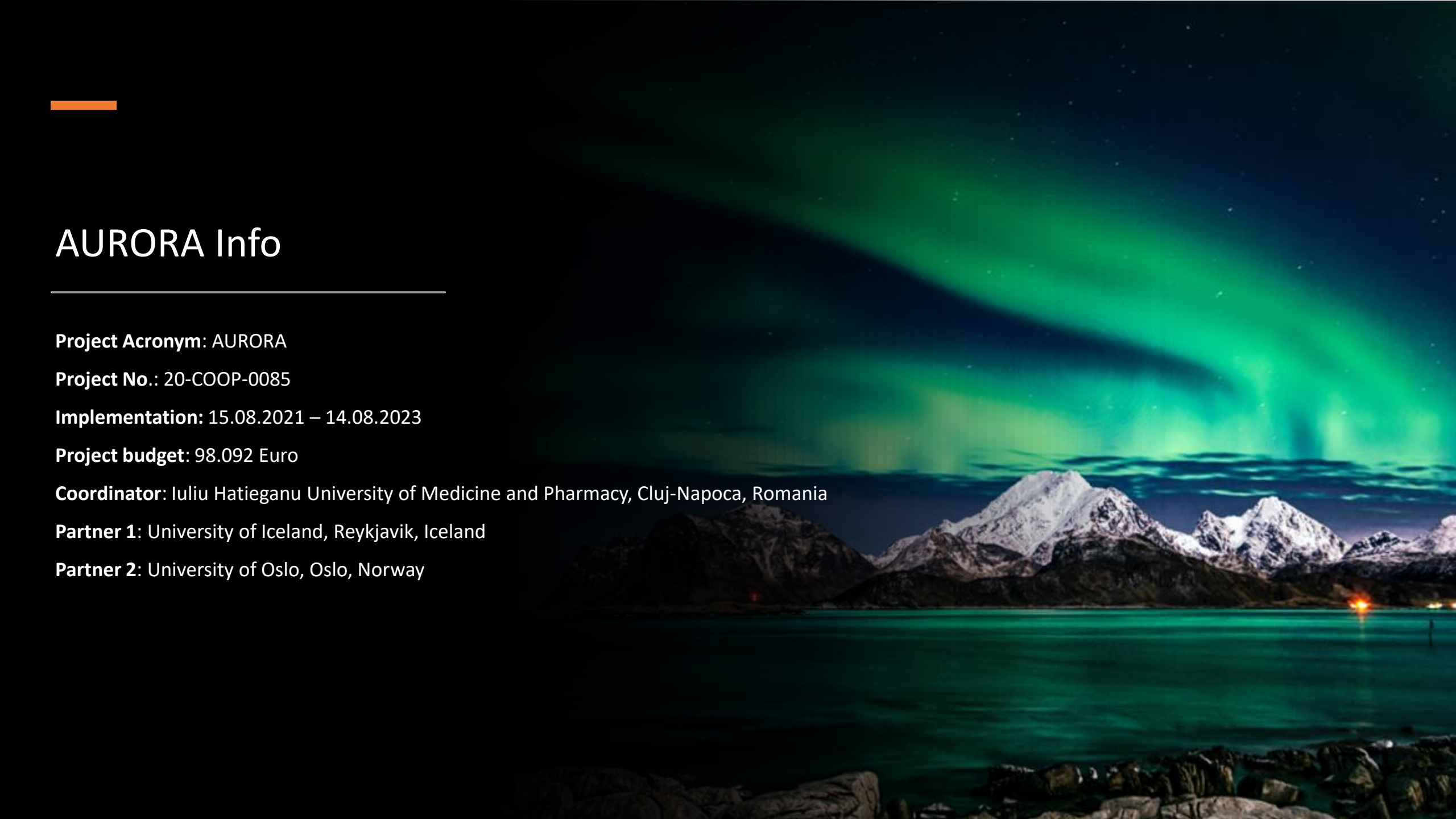
**Implementation:** 15.08.2021 – 14.08.2023

**Project budget:** 98.092 Euro

**Coordinator:** Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania

**Partner 1:** University of Iceland, Reykjavik, Iceland

**Partner 2:** University of Oslo, Oslo, Norway

A photograph of the Aurora Borealis (Northern Lights) in shades of green and blue, dancing over a dark landscape. In the background, there are snow-capped mountains. In the foreground, there is a body of water reflecting the lights, and some dark rocks are visible at the bottom.

A man with a beard and glasses, wearing a light blue lab coat and purple gloves, is operating a white and blue medical machine. He is looking down at the machine's interface. The background shows a wooden door with a green exit sign and a white wall with a red fire alarm pull station.

# AURORA Objectives

The project is a small size cooperation project meant to establish a long term collaboration for good practices exchange between the Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, RO (UMPh), University of Iceland, Reykjavik, IS (UI) and University of Oslo, Oslo, NO (UO) within the medical and research education sector at the 3rd level of study with direct impact upon the PhD curricula innovation, level of knowledge among PhD students and integration on the international workforce for all three partners.

## Specific objectives

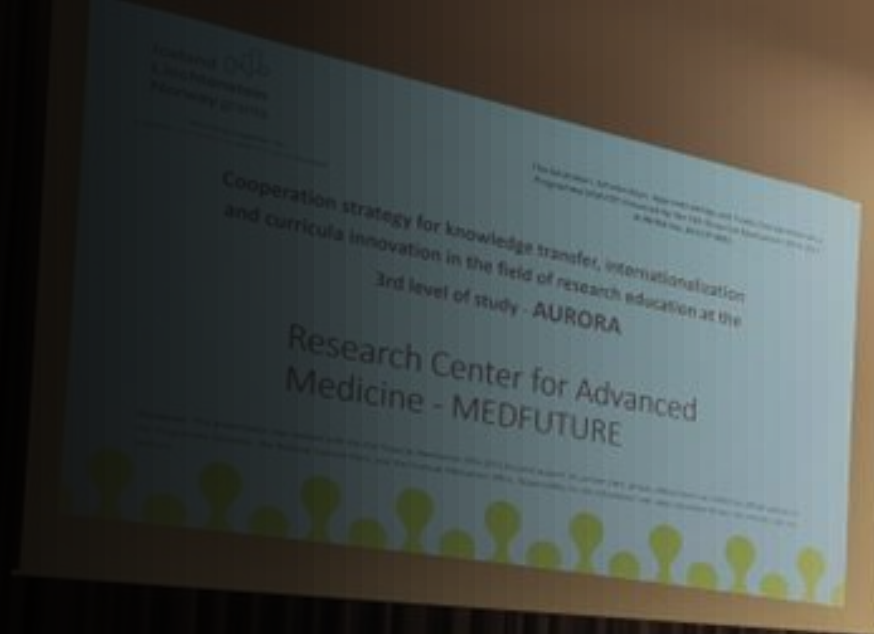
1. Improving skills and competences among PhD students from all three partners and strengthen institutional cooperation in HE based on common needs by developing a common modern curricula for medical research at the 3rd level of study during project implementation
2. Modernization and digitization of the educational offer through establishment of a research e-platform containing the updated curricula developed within O1
3. Consolidation of the international cooperation between partners through joint scientific articles published in international journals

# AURORA Training activities

C1. Short term mobility of staff members at UI and UO partners for training and consolidation of the common curricula

C2. Joint training seminars for PhD students through short term mobility at UI and UO partners

C3. Completion of translational learning with virtual activities by establishment of a videoconference-based research consulting council at UMPH for PhD students



A photograph of a laboratory setting. In the foreground, a woman with short dark hair, wearing a pink jacket, looks directly at the camera. In the background, several people are gathered around a table, looking at a map or document. A man in a white lab coat is visible on the right. The room has glass walls and various pieces of equipment.

## AURORA Training activities (staff)

The training activities took place at the University of Iceland and University of Oslo

The staff training involved research meetings between the UMPH, UI and UO personnel in order to exchange good research practices, visit of the infrastructure and hands on trainings for essential protocols like processing of the biological samples

Short term mobility of staff members

Iceland - August 31-September 5, 2022

Iceland - November 29 – December 3, 2022

Iceland - June 19 – June 21, 2023

Norway - March 27th –30th, 2023

More info at: <https://aurora-umfcluj.webnode.page/trainings/>



# August 31-September 5<sup>th</sup>, 2022 Training

## Staff traveling during pandemics

The short-term mobility of UMPH staff to the UI partner is meant to establish the preliminary data required for modernization of research curricula at the 3rd level of study based on common needs and knowledge of each UMPH staff in the field with professional input from the experts from UI. Specifically, throughout the training we will set the main domains of research that should be included in the common curricula and receive input from UI in respect to the protocols of each domain

## Domains of study for the staff training

1. Flow cytometry for medical research
2. Genetic medical research
3. Cancer cell culture research

Number of participants: 3 UMPIH, 2 UI

A photograph of a modern, multi-story building at night, illuminated with warm yellow lights. The building features large windows and a prominent entrance with a glass door. The sky is dark, and the overall atmosphere is that of a well-lit urban environment.

# November 29<sup>th</sup> – December 3<sup>rd</sup>, 2022 Training

---

University of Iceland in late morning

The short-term mobility of the second group of UMPH staff to the UI partner was meant to follow up the data required for modernization of research curricula at the 3<sup>rd</sup> level of study based on common needs and knowledge. The main domain of discussion was set to collection and processing of human samples, domain that is actually the theme of the first two SOPs from the updated research curricula

Domains of study for the staff training

1. Human sample collection
2. Processing of human samples and storage
3. Efforts toward standardization of human samples collection and processing
3. Common research article discussions

Number of participants: 3 UMPIH, 3 UI



## June 19 – June 21, 2023 Training

AURORA staff member at Biomedical Center, Landspítali, Iceland

The third short-term mobility of UMPH staff at the Iceland partner completed the first two trainings for modernization of research curricula at the 3<sup>rd</sup> level of study in terms of nucleic acids extraction, *in vitro* protocols and collection and processing of human samples. The staff had the chance to perform practical work in the laboratory regarding the actual protocols included in the new research curricula in order to demonstrate back to the doctoral students the correct workflow and sample manipulation

Domains of study for the staff training

1. DNA and RNA extraction
2. In vitro protocols – Eliza and triple coloration straining on CFU
3. Efforts toward standardization of human samples collection and processing
3. Common research article discussions

Number of participants: 1 UMPIH, 2 UI

## March 27th –30th, 2023 Training

UMPIH staff with Prof. Dr. Victor Greiff

The short-term mobility of the UMPH staff to the UO partner was meant to follow up the data required for modernization of research curricula at the 3<sup>rd</sup> level of study based on common needs and knowledge. The main domain of discussion was set to collection and processing of human samples with a subfocus on their robot for automated sample processing and proteomic studies, domains that were approached in the SOPs from the updated research curricula.

- **Domains of study for the staff training**

1. Human sample collection, processing and storage
2. Efforts toward standardization of human samples collection and processing (hands off - automatic processing)
3. Proteomic protocols for PhD studies
4. Common research article discussions

Number of participants: 8 UMPIH, 3 UI



# AURORA Training activities (PhD students)

---

The training activities took place at the University of Iceland and University of Oslo

The students training involved on site conferences about research techniques current studies presented by personnel from UMPH, UI and UO personnel, visit of the infrastructure and hands on trainings

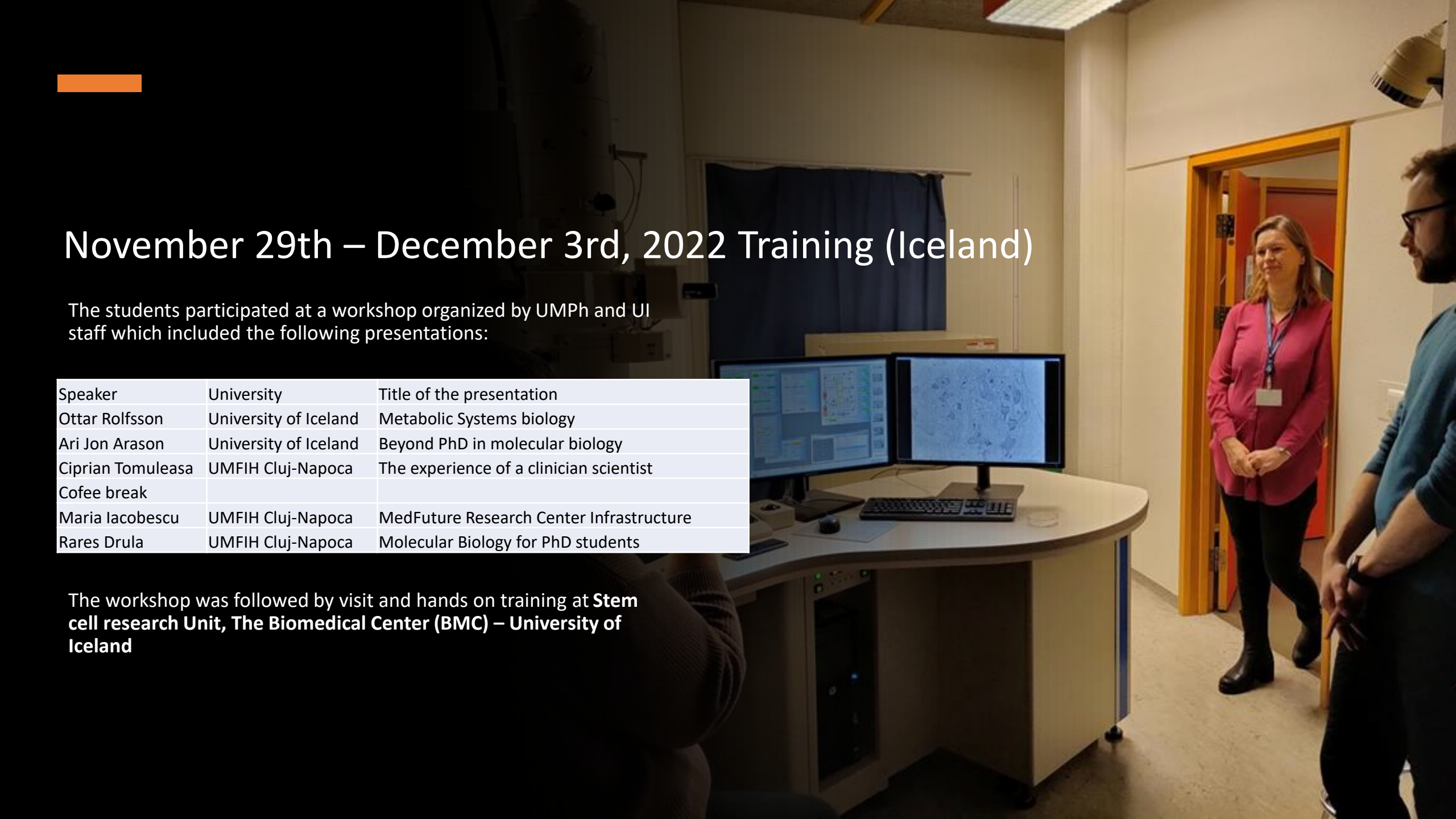
Joint training seminar for PhD students

Iceland - November 29th – December 3rd, 2022

Norway - March 27th –30th, 2023

More info at: <https://aurora-umfcluj.webnode.page/trainings/>






# November 29th – December 3rd, 2022 Training (Iceland)

The students participated at a workshop organized by UMPH and UI staff which included the following presentations:

Speaker	University	Title of the presentation
Ottar Rolfsson	University of Iceland	Metabolic Systems biology
Ari Jon Arason	University of Iceland	Beyond PhD in molecular biology
Ciprian Tomuleasa	UMFIH Cluj-Napoca	The experience of a clinician scientist
Coffee break		
Maria Iacobescu	UMFIH Cluj-Napoca	MedFuture Research Center Infrastructure
Rares Drula	UMFIH Cluj-Napoca	Molecular Biology for PhD students

The workshop was followed by visit and hands on training at **Stem cell research Unit, The Biomedical Center (BMC) – University of Iceland**



## Norway - March 27th –30th, 2023 Training (Norway)

The students participated at a workshop organized by UMPH and UO staff which included the following presentations:

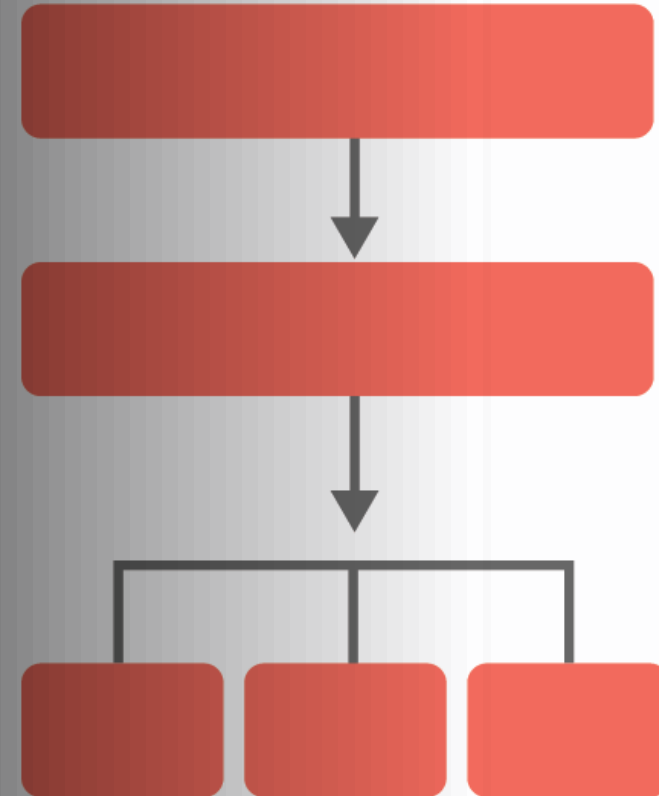
Speaker	University	Title of the presentation
Jorunn Stammnaes	University of Oslo	Mass spectrometry based analysis of tissue remodeling in disease
Khang Le Quy	University of Oslo	Integrated genomic and proteomic antibody repertoire analysis at single-cell resolution
Coffee break		
Vlad Moisoiu	UMFIH Cluj-Napoca	Liquid biopsy by surface-enhanced Raman scattering
Ciprian Tomuleasa	UMFIH Cluj-Napoca	Real life data for the therapy of Castelman's disease with siltuximab

The workshop was preceded by visit and hands on training at Computational and Systems Immunology laboratories, Department of Immunology, University of Oslo

# AURORA Research Protocols (E-platform)

- The research E-platform is currently available at <https://aurora-umfcluj.webnode.page/protocols/> and includes the main protocols used by PhD students in their study
- The platform is meant to help the students by providing step by step protocols regarding their studies but also unify the methods used for sample processing and provide the opportunity to combine and compare data between PhD thesis
- The protocols available up to now:
  - [1. COLLECTION OF BIOLOGICAL SAMPLES](#)
  - [2. PROCESSING OF BIOLOGICAL SAMPLES](#)
  - [3. IN VITRO FUNCTIONAL TESTS](#)
  - [4. MORPHOLOGICAL ASSESSMENT PROTOCOL USING TRIPLE STAINING](#)
  - [5. RNA EXTRACTION FROM TRIREAGENT](#)
  - [6. PROTEIN EXTRACTION FROM TRIREAGENT](#)
  - [7. DNA EXTRACTION FROM CELL CULTURE, WHOLE BLOOD OR TISSUE](#)
  - [8. cDNA SYNTHESIS AND GENE EXPRESSION ANALYSIS THROUGH RT-PCR](#)

## RESEARCH PLAN





## AURORA Scientific publications

---

- CANCER MECHANISMS AND EMERGING THERAPIES. **Diana Gulei**, Alice Indini, Carmen Jerónimo, Cristina-Adela Iuga, and Francesco Grossi,. Pharmaceuticals, 2021, impact factor: 6.525
- PROTEASOME INHIBITION IN COMBINATION WITH IMMUNOTHERAPIES: STATE-OF-THE-ART IN MULTIPLE MYELOMA. David Kegyes, **Diana Gulei**, Rares Drula, Diana Cenariu, Bogdan Tigu, Delia Dima, Alina Tanase, Sorina Badelita, Anca-Dana Buzoianu, Stefan Ciurea, Gabriel Ghiaur, Evangelos Terpos, Aaron Ciechanover, Hermann Einsele, Ciprian Tomuleasa. Blood Reviews, 2023, in press, impact factor: 10.636.
- RNA SEQUENCING SUGGESTS THAT NON-CODING RNAS PLAY A ROLE IN THE DEVELOPMENT OF ACQUIRED HEMOPHILIA. Bogdan Tigu, Ionut Hotea, Cristina Blag, Rares Drula, Alina-Andreea Zimta, Noemi Dirzu, Maria Santa, Delia Dima, **Jon Thor Bergthorsson**, **Victor Greiff**, Margit Serban, Daniel Coriu, **Diana Gulei**, Johnny Mahlangu, Ciprian Tomuleasa. Journal of Cellular and Molecular Medicine, 2023, in press. impact factor: 5.295.
- DESIGN AND PRECLINICAL TESTING OF AN ANTI-CD41 CAR T CELL FOR THE TREATMENT OF ACUTE MEGAKARYOBLASTIC LEUKEMIA. Adrian-Bogdan Tigu, Catalin Constantinescu, Patric Teodorescu, David Kegyes, Richard Feder, Mareike Peters, Ioana Pralea, Cristina Iuga, Diana Cenariu, Andra Marcu, Alina Tanase, Anca Colita, Rares Drula, **Jon Thor Bergthorsson**, **Victor Greiff**, Delia Dima, Ioana Rus, Mihnea Zdrenghea, **Diana Gulei**, Gabriel Ghiaur, Ciprian Tomuleasa. Journal of Cellular and Molecular Medicine, 2023, in press. impact factor: 5.295.
- PITFALLS IN PATENTING ACADEMIC CAR-T CELLS THERAPY. Catalin Constantinescu, Roxana Constantinescu, **Jon Thor Bergthorsson**, **Victor Greiff**, Alina Tanase, Anca Colita, **Diana Gulei**, Ciprian Tomuleasa. Expert Opinion on Therapeutic Patents, 2023, impact factor: 6.714, in press.



# Thank you!

---

Contact

Diana (Gulei) Tomuleasa, PhD

Research Centre for Advanced Medicine – MEDFUTURE

Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca

4-6 Louis Pasteur Street, 400337, Cluj-Napoca, Romania

E-mail: [diana.c.gulei@gmail.com](mailto:diana.c.gulei@gmail.com)

Disclaimer: Material made with the financial support of the EEA Financial Mechanism 2014 - 2021. Its content (text, photos, video) does not reflect the official opinion of the Program Operator, the National Contact Point or the Office of the Financial Mechanism. The information and opinions expressed are the sole responsibility of the author(s).