



## ERA Chair Life Sciences Program to Empower molecular and structural biology initiatives at UPAT

The ESPERANCE project will deliver major impact beyond UPAT's current research scope, leveraging existing infrastructure and facilities to drive sustainable innovation based on:

**01**

Implementation and exploitation of the new methods portfolio of UPAT for extending the researchers' expertise in new tools

**02**

Strengthening of local collaborative efforts at UPAT to achieve high-level standards with integrated research approaches

**03**

The establishment of strategic partnerships with EU-wide and national consortia for the sustainable development of the UPAT and Greek life science sectors



The University of Patras Departments of Medicine and Pharmacy, are combining their knowledge in

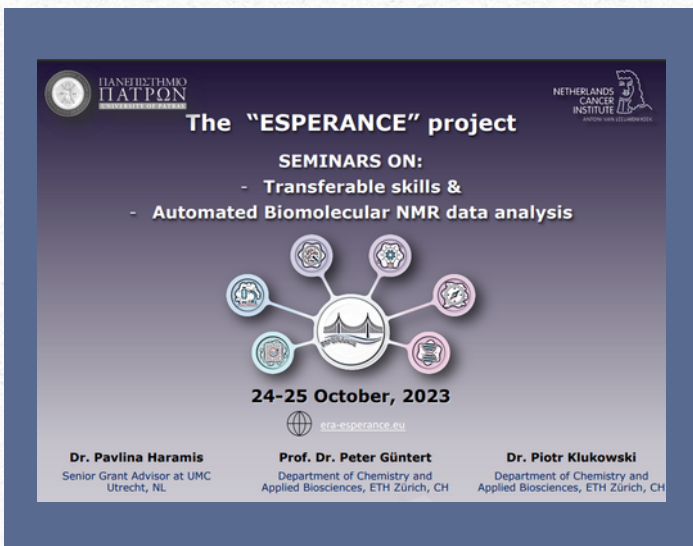
cell biology

biophysics

structural biology

state-of-the-art equipment

to coordinate the ESPERANCE project, which aspires to expand and intensify their concerted actions by adding a part-time ERA Chair holder.



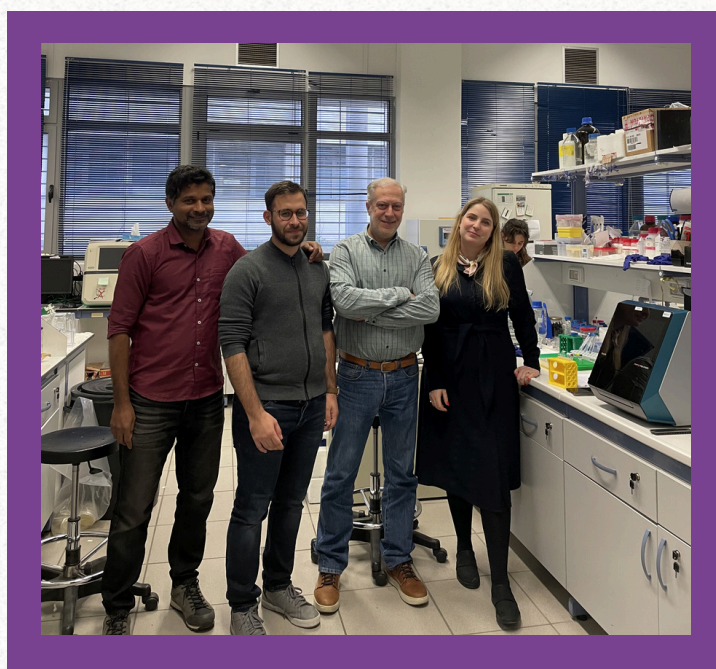
## Practical Course on Light Scattering, Imaging, Microcalorimetry in Biomolecular Assemblies and Interactions

The "ESPERANCE" practical course, held at the University of Patras from February to March 2024, provided researchers with intensive training in advanced biophysical and imaging methodologies. The program featured specialized sessions on measuring binding affinities via MicroScale Thermophoresis (MST) and comprehensive workshops on SEC-MALS and Isothermal Titration Calorimetry (ITC) led by experts from Malvern Panalytical. Furthermore, participants explored super-resolution microscopy and deep learning-based NMR data analysis, bridging the gap between complex theoretical principles and practical laboratory application. These sessions successfully equipped a new cohort of scientists with the technical expertise needed to use state-of-the-art instrumentation in modern structural biology.



## Seminars on Transferable skills and Automated NMR Data Analysing using deep learning technique

The ESPERANCE seminar series held on October 24th and 25th, 2023, included sessions on transferable skills and advanced research methodologies in structural biology. The program covered topics such as research communication, career development, and proposal writing, as well as scientific presentations on automated NMR data analysis using deep learning approaches. These sessions introduced modern computational tools for processing NMR datasets while also supporting the professional development of early-career researchers.



## Training School TS#1: Integrative Structural Cell Biology

The Training School #1, hosted by the University of Patras from 15–17 May 2024, brought together international experts and researchers to explore advances in integrative structural biology. Lectures covered topics such as microtubule organization, chromosomal instability, immune responses, protein phosphorylation, and structure-based drug discovery, concluding with a symposium on biological chemistry, structural biology, and cell biology that encouraged discussion and collaboration among participants.