

Call

for Application for the Training School: **Machine Learning Approaches & Analytical Methodologies for Hematological Disorder Diagnostics and Prognostics**

27-28, May & 03-04, June 2026
Virtual (TIME ZONE CET)

Organizers

Dr Helen Latsoudis (WG-3 Leader)

Dr Giacomo Cavalca (WG-3 Co-Leader)

Purpose of the Training School:

The Training School on "**Machine Learning Approaches & Analytical Methodologies for Hematological Disorder Diagnostics and Prognostics**" is organized by the COST Action CA24124 "Network for the Advancement of Neutropenia Research and Patient Support" (Neuro-NARPS) as a virtual event.

Data analytics methods in rare diseases are crucial for overcoming challenges related to small patient populations, data fragmentation, and the "diagnostic odyssey". These methods focus on leveraging Real World Data, core statistics and AI to improve diagnosis, understand disease progression, and accelerate drug development.

The participating scientists will have the opportunity to **expand their knowledge via interactive lectures** from experts on aspects related to data analytics. They will also observe and familiarize themselves with methods to study rare blood diseases, discuss, and get **hands-on experience** on performing specific analyses that will promote better study design, more efficient use of data, and improved interpretation of results, ultimately contributing to more informed clinical decision-making and better patient outcomes.

The Neuro-NARPS Training School will be held in 2 distinct parts that will take place on separate dates.

PART A: 27-28 May 2026 on "**Machine Learning Approaches for Hematological Disorder Diagnostics and Prognostics**" will introduce participants to machine learning (ML) methods and their applications in hematological diseases, with a particular focus on improving diagnosis, prognosis, and treatment stratification. Given the increasing availability of clinical, genomic, and imaging data in hematology, ML techniques offer powerful tools to uncover complex patterns and support precision medicine. The course combines theoretical foundations with practical, hands-on experience using real-world datasets.

By the end of the training, participants will be able to:

- Understand core concepts of machine learning and their relevance to hematology
- Apply supervised and unsupervised learning methods to clinical and omics data
- Develop predictive models for diagnosis, prognosis, and treatment response
- Evaluate model performance and avoid common pitfalls such as overfitting
- Interpret machine learning outputs in a clinically meaningful way

PART B: 3-4 June 2026 on "**Analytical Methodologies for Hematological Disorder Diagnostics and Prognostics**" will combine **background information** and **hands on experience** on core statistical foundations, especially tailored to rare and complex blood disorders, like Neutropenia.

By the end of the training, participant will be able to:

- Perform descriptive and inferential statistical analyses
- Select appropriate statistical tests based on study aim, type (continuous or categorical) & distribution (parametric or non-parametric) of data, and observations (independent or paired)
- Conduct survival analyses using methods such as Kaplan–Meier estimator and regression models like Cox proportional hazards model
- Handle small datasets
- Integrate of prior knowledge with limited new data to produce more robust and clinically meaningful inferences.
- Lead to better clinical decision-making and patient outcomes



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Target audience: researchers, clinicians, biologists, data scientists, healthcare and biomedical professionals, students, non-experts in biostatistics

Deadline for applications: April 27th, 2026

Application Process:

Applicants are required to submit their application through the following link:

<https://neutro-narps.eu/ml-hematology-application/>

no later than April 27, 2026.

The application should include:

- A brief C.V.
- A motivation letter outlining the relevance to their research and the value of participating in the Training Course

Applicants will be formally notified of the outcome of their application by May 4, 2026 at the latest and will receive a formal COST invitation via eCOST.

Participants will receive a certificate of attendance for the sessions they have successfully completed.

