



Participants at the training school on AI for Research management held in hybrid mode.

TRAINING EVENTS

1 AI FOR RESEARCH MANAGEMENT

This 3-day training school, held from April 26–28, aimed at introducing participants to different AI tools for the responsible and strategic use of digital tools in research management. The course addressed data privacy, research integrity, and compliance with funder and EU policies on the use of AI in research. Participants explored practical approaches to identifying funding opportunities and analysing grant calls. They also learnt how to build effective consortia using open databases and collaboration platforms, conduct AI-based literature searches, create prompts for structured proposal drafting, and use multimodal tools for research dissemination. This training replaced the originally planned “Transversal Issues in Horizon Europe” to better reflect current challenges in research management workflows. The event achieved high satisfaction rates, confirming its relevance and effectiveness.



54 participants



Day 1: Generative AI Tools for Research Management & Data Privacy & Research Integrity
Day 2: Grant Preparation
Day 3: Grant Strategy, Management and Communication



Avi Staiman (Academic Language Experts, Jerusalem, Israel)



2 ADVANCED USE OF BIOVL AND E-LEARNING TOOLS

This training school, held at DTU on April 4, 2025 provided participants with a comprehensive introduction to BioVL, a virtual laboratory developed at DTU. The session combined theoretical guidance with hands-on exercises, enabling participants to access and use the e-learning platform for bioprocess modelling and model simulation. Participants explored different bioprocess models and learned how to assess simulation performance based on the initial parameters defined.



11 participants



Day 1: Advanced use of BioVL and e-learning tools



Carina L. Gargalo (DTU KT, PROSYS)
Fiammetta Caccavale (DTU KT, PROSYS)

DIG4BIO

Advanced use of BioVL and e-learning tools

Fiammetta Caccavale
DTU, Prosys

Dive into BioVL and e-learning tools for bioprocess modeling in this training school. Hands-on sessions will enhance your skills and maximize learning outcomes.

4 April 2025
DTU

SAVE THE DATE!

Logos at the bottom: Técnico Lisboa, DTU, TUB, WI, IST-ID, and the European Union flag.

3 HORIZON EUROPE GRANT WRITING

This virtual workshop, held on April 9, 2025 supported researchers in developing competitive Horizon Europe proposals, focusing on ERC, MSCA, and collaborative projects, including Pathfinder initiatives. Participants explored institutional support strategies from DTU, TUB, and IST-ID, including pre-award support models, evaluation criteria, mentoring schemes, and successful case studies. The interactive format promoted the exchange of experiences and practical advice, helping participants identify actionable approaches to strengthen proposal development and institutional support.



24 participants



Day 1: Supporting Researchers in Writing Competitive ERC, MSCA, and Collaborative Projects

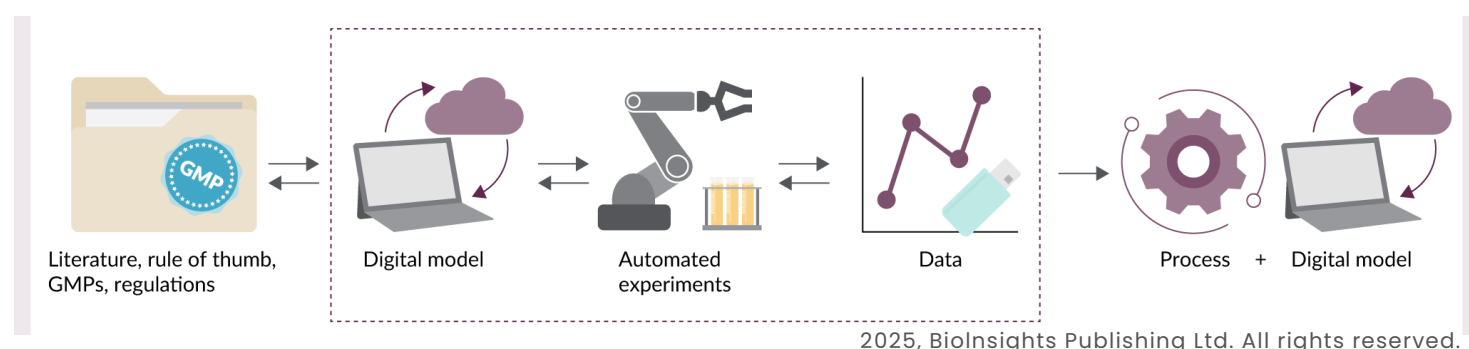


Charles William Lawrence (DTU)
Emily Riley (DTU)
Elke Gehweiler (TUB)
Rita Soares (IST-ID)
Rita Saraiva (IST)
Marta Candeias (IST-ID)
Sofia Martins (IST-ID)

PUBLICATIONS

Incorporating digitalization in the conceptual design, research and development of plasmid biomanufacturing

The DIG4BIO consortium has published its first scientific article, outlining a vision for integrating digitalization into the early stages of plasmid DNA biomanufacturing process development. The commentary paper discusses how digitalization can be incorporated into the early design and development of plasmid DNA biomanufacturing processes. The paper presents a conceptual framework combining experimentation with digital tools such as modelling, automation, AI, and high-throughput methods. This approach can accelerate process development, improve decision-making, reduce waste, and support more efficient and sustainable manufacturing.



Digitally centred process development for pDNA biomanufacturing. The figure illustrates how digital models, automated experiments, and data generation can be integrated into iterative development cycles, supporting the simultaneous development of an optimized physical process and its digital counterpart.



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COMMENTARY PAPER

Title: Incorporating digitalization in the conceptual design, research and development of plasmid biomanufacturing

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NUCLEIC ACID INSIGHTS

DNA
ENGINEERING AND MANUFACTURING

SPOTLIGHT

COMMENTARY

Incorporating digitalization in the conceptual design, research and development of plasmid biomanufacturing

Duarte Miguel de França Teixeira dos Prazeres, Ana Margarida Azevedo, Sofia Oliveira Duarte, Ana Rita Silva-Santos, Krist V Gernaey, Carina L Gargalo, Rosa Hassfurth, Annina Kemmer, and M Nicolas Cruz Bournazou

The importance of large-scale production of plasmid DNA (pDNA) has increased steadily over the years due to the development of a growing number of direct and indirect applications. To meet the growing demand for pDNA, significant efforts must be made towards improving its manufacturing. In particular, the digitalization of pDNA manufacturing could enable faster process optimization, support data-driven decision-making, and contribute to waste reduction and more sustainable operations. In this commentary article, we further contend that the benefits of digitalization should be captured early on at the research and development stage of the manufacturing process. To support this vision, we present a conceptual framework for incorporating digitalization into pDNA process development, discuss technological enablers, explain how digital methods could overcome traditional limitations, and delve into implementation considerations.

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PLASMIDS AND THE DIGITALIZATION OF BIOMANUFACTURING

Plasmids are pervasive across the gene and cell therapy industry of today [1,2]. As biologicals, they are used to deliver genetic information to patient target cells or as

vehicles to deliver the molecular components of gene editor systems. Moreover, plasmids serve as essential raw materials for the manufacturing of engineered cell products (e.g., CAR-T cells) or of other biologicals (e.g., viral vectors and mRNA). The ability to manufacture plasmids cost-effectively on a large scale is thus critical for many



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109

PAPER HIGHLIGHTS

Plasmids and the digitalization of biomanufacturing: Plasmid DNA is increasingly important, both as a therapeutic product and as a key raw material for gene and cell therapies, viral vectors, and mRNA-based products. As demand for pDNA continues to grow, more efficient, scalable, and sustainable manufacturing strategies are needed. Digitalization offers a route to improve process understanding, support predictive decision-making, and enable more efficient biomanufacturing.

Limitations of traditional process development: Conventional pDNA process development relies on iterative lab experiments and manual workflows, which can be time-consuming, costly and difficult to scale.

A digitally centred development approach: By combining experiments with modelling, automation, AI, and high-throughput tools, pDNA process development can become faster, more data-driven, and better prepared for scale-up and technology transfer.

SHORT VISIT TO TU BERLIN

On June 25-26, 2025, research managers from IST/IST-ID participated in a short staff exchange with the Research Management Department of TU Berlin. The visit focused on sharing best practices in ERC and MSCA proposal preparation, competitive funding strategies, technology transfer, and research analytics. It also included contributions from Università Ca' Foscari Venezia, enriching the discussion with additional perspectives on research management. The exchange strengthened IST-ID capacity in strategic research support and fostered closer collaboration between partner institutions within DIG4BIO.



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