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Translation Laboratories in Action: Building Bridges between Hospital and University

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Dipartimento Attività Integrate Ricerca Innovazione
(DAIRI) - AOU AL



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Translation Laboratories in Action: Building Bridges between Hospital and University



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The creation of the Integrated Research Laboratories (Joined Labs) between the Research and Innovation Department (DAIRI) of Alessandria University Hospital and the Department of Science and Technological Innovation (DISIT) of the University of Eastern Piedmont represents a consolidated model of cooperation between healthcare and academic institutions [1]. Launched in 2020, the initiative was designed to strengthen translational research — understood as the continuous process that transforms discoveries from basic science into clinical applications and, in turn, uses clinical evidence to inform and refine laboratory investigations. From this perspective, the Joined Labs serve as a catalyst for the bidirectional exchange of knowledge, integrating biomedical research with clinical needs and technological innovation. Thanks to a structured plan, DAIRI and DISIT have developed a shared research infrastructure aimed at advancing studies on environmentally related diseases, antibiotic resistance, and digital health innovation. Five Joined Labs were formally established, each combining complementary expertise, advanced instrumentation, and research personnel from both institutions: Sequencing Laboratory – dedicated to genomic surveillance and microbiota analysis, with projects on antibiotic resistance and SARS-CoV-2 monitoring [2–4] Preclinical Research Laboratory – focused on experimental models and new therapeutic strategies for mesothelioma and other tumors [5–7] Asbestos Research Laboratory (LIRiCA) – specialized in identifying and quantifying asbestos fibers and inorganic materials in biological tissues using SEM/EDX and micro-RAMAN technologies [8–10] Artificial Intelligence and Medical Informatics Laboratory – promoting AI-based decision support, data analytics, and personalized education in healthcare [11–13] Metabolomics Laboratory – extending the NMR platform (PRISMA) toward biomedical and preclinical metabolomics [14] This integrated network has enhanced scientific productivity, interdisciplinary collaboration, and training opportunities for young researchers, fostering innovation and translational impact at both institutional and regional levels. The DAIRI–DISIT partnership now stands as a reference model for the joint development of health-oriented research infrastructures.

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