BIOLOGY AND MOLECULAR MEDICINE

Editorial

A Letter from the Editor in Chief: Introducing Biology and Molecular Medicine

From the Desk of E.H. Rosenn, Lead Editor

In this inaugural issue, I want to introduce the mission of *Biology & Molecular Medicine* (BAMM) and the role we hope to play at a moment of rapid change in biomedical science. Across healthcare, new technologies are reshaping how we generate evidence, interpret data, and deliver care. At the same time, the credibility, reproducibility, and accessibility of research are under strain [1]. Our goal is to sit at the academic forefront of these shifts by publishing work that is rigorous, transparent, and genuinely useful to clinicians, researchers, and trainees.

Biology & Molecular Medicine and BAMMjournal.org have recently been incorporated as a nonprofit organization. Our aim is to publish without costs to authors and without paywalls for readers, so that high-quality scientific information can be open to all. We believe that operating as an independent publisher, supported by generous donations, can enable an editorial quality standard that is both uncompromising and meaningfully insulated from the incentives that too often shape conventional publishing decisions.

We are building this journal to match the scientific rigor of established high-impact publications while also advocating for policies and practices that support medical students, health professionals in training, and early-career researchers who want to participate in academic research. We want to make the science in this journal excellent and accessible, and to make participation in scholarly work more attainable while upholding high standards.

Now that you know a bit about who we are and what we stand for, I am excited to share a few points highlighting the cutting-edge discussions we can expect in our first issue as our submission grows over the next few weeks.

As we enter an era of high-powered computing, computational research, decision support, and data-driven workflows are becoming increasingly integrated into clinical practice and point-of-care settings [2]. A major hurdle is not access to tools, but the effort and shared understanding required to translate principles into practice across clinicians, administrators, and other healthcare stakeholders (informatics teams)[3]. If clinical AI is treated as an evolving intervention rather than a static product, governance must be designed for iteration: for learning, recalibration, and accountability as systems change[4]. The aim is not simply to permit experimentation, but to structure it so that evidence accumulates faster than risk, and so that responsibility does not fall by default on the clinician at the bedside [5].

A useful template comes from the living lab and sandbox models with concrete healthcare analogs [5]. A living lab is a real clinical environment where a tool is used within routine workflow while outcomes, safety signals, and user behavior are continuously measured under an agreed protocol and governance structure, for example the University of Melbourne Smart Hospital Living Lab, which explicitly focuses on rapid prototyping and iteration with hospital partners to turn ideas into practical applications that improve hospital operations and safety [6, 7]. A sandbox is a defined, time bounded pilot space with restricted scope and formal reporting designed to contain risk while accelerating evidence generation, for example the Medicines and Healthcare products Regulatory Agency AI Airlock, a regulatory sandbox launched to help the agency learn faster about how to

evaluate AI as a medical device and to surface novel regulatory challenges in partnership with the National Health Service and the Department of Health and Social Care [6, 8].

For clinicians and healthcare workers, the implication is simple. AI should not be treated like a routine purchase or a one-time installation, but as a controlled learning program with guardrails . A clinical sandbox should define intended use, limits, acceptable failure modes, escalation and override rules, and documentation standards for auditability. It should track when outputs are followed or rejected and why, to improve performance and clarify accountability [9]. Ongoing quality and compliance oversight is also essential to evaluate updates, monitor drift, and prevent iterative changes from becoming invisible or unaccountable [10].

This approach also aligns with a regulatory landscape that is converging toward risk-based governance [11]. Comprehensive frameworks, including those emerging in the European Union, are shaping expectations around transparency, oversight, and responsibility, and healthcare use cases often fall into the most scrutinized categories [12, 13]. The more hospitals can translate real-world clinical experience into structured evidence and enforceable local policy, the less clinicians will be left carrying institutional uncertainty at the bedside. At the same time, credible governance has to acknowledge incentives: budgets, procurement timelines, vendor claims, professional jurisdiction, and who is empowered to decide when a tool is "good enough" for routine care will shape what gets adopted and how it is monitored [14].

In this first issue, we begin with a simple commitment: to publish work that helps the biomedical community evaluate what is new without losing what must remain non-negotiable, scientific rigor, patient safety, and public trust. As AI and other computational tools move from the lab to the clinic, the decisive question will be whether institutions can build the evidence and governance needed to use these systems responsibly at scale. *Biology & Molecular Medicine* will prioritize contributions that are transparent, reproducible, and clinically grounded, and we will advocate for evaluation models that make learning systematic rather than incidental. I invite you to read this issue with a critical but constructive eye, and to consider the BAMM journal not only as a place to share results, but as a forum for shaping the standards that will define the next era of biomedical science.

Yours most sincerely,
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