A milestone towards a successful scientific journal: celebrating the inclusion of *Biomaterials Translational* by PubMed

*Qian Wang**

Department of Chemistry and Biochemistry, University of South Carolina, Columbia, SC, USA

*Corresponding author:
Qian Wang,
qian.wang@biomat-trans.com.

In July 2022, *Biomaterials Translational* was officially included in the PubMed (http://www.ncbi.nlm.nih.gov/pubmed) database. This is an important milestone for our journal. Congratulations to all authors, reviewers, readers, editorial board members, editors, and editorial staff members!

More than 50 years ago, in 1971, the National Library of Medicine (NLM) of the United States created MEDLINE to serve as the online version of the Medical Literature Analysis and Retrieval System (MEDLARS). Originally, the MEDLINE service could only support up to a few dozen accounts simultaneously, and access was limited primarily to selected medical libraries.[1, 2] In June 1997, NLM released the PubMed search engine to offer free and unlimited access for all users through the Internet. As of October 2017, PubMed included 27.5 million records, representing approximately 7000 journals.[3] This number has increased to more than 34 million citations and abstracts of biomedical literature as reported by PubMed in September 2022.[4] Although PubMed does not include full text journal articles, links to the full text are provided when available from other sources, such as the publisher's website or PubMed Central. It is not an overstatement that, over the past 25 years, PubMed has become the most accessible and inclusive portal to biomedical literature, making it the premier source to support research activities globally.

In a 2011 essay, I, together with my colleague, the late Dr. Chris Toumey, discussed the danger of over-reliance on the internet when performing a literature search. We said: "While we embrace the easy accessibility of literature in a mere moment of fingers dancing on the keyboard, it becomes much harder for us to spend more time to look for the historical contexts of the information we get".[5] The adoption of machine learning algorithms in internet search engine design, while it may be beneficial for the optimisation of searching outcomes, has arguably exacerbated the bias on internet-based literature survey. A good example is the usage of Google when searching for research papers: if you are not extremely mindful about the tunnelling effect of machine learning-based internet automatic feeds, you will inevitably fall into the trap of a narcissistic collapse.

PubMed has tried to avoid this trap by continuously improving its search algorithm over the past 25 years, aiming to meet the needs and expectations of its users and to better help global biomedical-related research activities. Given a query, PubMed can not only report the most recent articles, but also can sort results by relevance based on a particular topic, a specific author, or other parameters. In addition, many new features have been added to PubMed in recent years, such as faceted search, query auto-suggest, and author name disambiguation. In particular, based on a 'learning-to-rank' algorithm, PubMed aims to provide the most relevant results and the best quality information within a fraction of a second, in response to a variety of different user information needs, by integrating a wide variety of different signals from the text record (including term frequencies).[6] Moreover, the free open-access feature of PubMed also contributes to scholarly communication efforts, providing easier access which also helps to translate basic research into clinical practice, the very same goal as this journal.

In this issue we present a collection of papers from very different research fields, highlighting the potential of biomaterials research to address different clinical needs. The first review paper by Zeng and Xie[7] discusses the prospect of using mesenchymal stem cell-derived extracellular vesicles to effectively deliver cargoes such as proteins, lipids, and nucleic acids. Therefore, the use of modified extracellular vesicles combined with materials science techniques can potentially achieve the cell-free treatment of bone diseases.[7]

To continue the tradition of our journal, Hu et al.[8] contribute a comprehensive review of the use of different animal models to investigate the pathological mechanisms of diabetic wounds as well as the application of hydrogel biomaterials in the treatment of diabetic wounds. The research article by Laomeephol et al. reported that silk fibroin-based hydrogels can be employed to enable dual cell and drug encapsulation for use in tissue-engineering applications.[9] Finally, Kingsak et al.[10] reported a systematic study of the use of titanium nanotube arrays to control cellular responses, an elegant way to create controlled micro/nano-environmental niches for developing implanting materials. With these papers, *Biomaterials Translational* continues to encourage authors to bring in more cutting-edge research articles and comprehensive review papers from different translational medical research fields.

1. Lindberg, D. A. Internet access to the National Library of Medicine. *Eff Clin Pract*. **2000**, *3*, 256-260.

2. Ossom Williamson, P.; Minter, C. I. J. Exploring PubMed as a reliable resource for scholarly communications services. *J Med Libr Assoc*. **2019**, *107*, 16-29.

3. Funk, K.; Stanger, R.; Eannarino, J.; Topper, L.; Majewski, K. PubMed journal selection and the changing landscape of scholarly communication. https://www.nlm.nih.gov/bsd/disted/video/selection.html. Accessed September 17, 2022.

4. PubMed Overview. https://pubmed.ncbi.nlm.nih.gov/about/. Accessed September 17, 2022.

5. Wang, Q.; Toumey, C. Lost history versus good science. *Nat Chem*. **2011**, *3*, 832-833.

6. Fiorini, N.; Lipman, D. J.; Lu, Z. Towards PubMed 2.0. *eLife*. **2017**, *6*, e28801.

7. Zeng, Z. L.; Xie, H. Mesenchymal stem cell-derived extracellular vesicles: a possible therapeutic strategy for orthopaedic diseases: a narrative review. *Biomater Transl*. **2022**, *3*, 175-187.

8. Hu, Y.; Xiong, Y.; Tao, R.; Xue, H.; Chen, L.; Lin, Z.; Panayi, A.; Mi, B.; Liu, G. Advances and perspective on animal models and hydrogel biomaterials for diabetic wound healing. *Biomater Transl*. **2022**, *3*, 188-200.

9. Laomeephol, C.; Ferreira, H.; Kanokpanont, S.; Luckanagul, J.; Neves, N.; Damrongsakkul, S. Osteogenic differentiation of encapsulated cells in dexamethasone-loaded phospholipid-induced silk fibroin hydrogels. *Biomater Transl*. **2022**, *3*, 213-220.

10. Kingsak, M.; Maturavongsadit, P.; Jiang, H.; Wang, Q. Cellular responses to nanoscale substrate topography of TiO_2 nanotube arrays: cell morphology and adhesion. *Biomater Transl*. **2022**, *3*, 221-233.