Call for Submissions

Clinical Chemistry and Laboratory Medicine
Theme Issue: Artificial Intelligence and Big Data in Laboratory Medicine

Clinical Chemistry and Laboratory Medicine (CCLM) is pleased to announce a call for submissions for a special thematic issue on Artificial Intelligence and Big Data in Laboratory Medicine, which is scheduled for publication in October 2022. The submission deadline is June 01, 2022.

About Clinical Chemistry and Laboratory Medicine:

- The official journal of EFLM
- 2020 Impact factor: 3.694
- Peer-reviewed and led by a multi-institutional editorial board
- Focused on fundamental and applied research and cutting-edge clinical laboratory medicine
- Free access for all articles published in the theme issue on AI in Laboratory Medicine
- Published by De Gruyter, an international, independent scientific publisher

Artificial Intelligence (AI) has been defined as a disruptive technology in many fields of science and technology. In laboratory medicine, potential advancements of AI have been described in decision support systems, improving patients care, and in models for reducing errors in many parts of the total testing process. However, clinical laboratories generate every day a large amount of data, which often feature most of the big data characteristics. Importantly, laboratories manage daily not only laboratory test results (analytical phase), but also information on both the pre-analytical and post-analytical phase. Further, almost all the new “omics” technologies generate a huge amount of quality data, most of them remaining unused or unexplored for limited resources. This encounter of AI and big data in the field of laboratory medicine has been taught to present the potential of generating several innovative tools. Despite this growing interest, to date, the developed applications in laboratory medicine have remained limited, and so the evolution of this field (AI in laboratory medicine), deserves to be investigated with careful consideration.

This Special Issue will deal with the potential application of AI and big data in laboratory medicine, with particular emphasis on (but not limited to) diagnostic algorithms, clinical decision support systems, potential applications for improving quality in the total testing process and patients care. Finally, it is supposed to outline the challenges for laboratory specialists to move out of the laboratory silo, in partnership with experts in different disciplines and in order to share skills and competence to allow the development of these new revolutionary tools.
The CCLM website (https://www.degruyter.com/cclm) outlines:

- Author information (with article types & word limits):
  Submission information: http://mc.manuscriptcentral.com/cclm

Examples of education-related articles in CCLM:

- Total laboratory automation has the potential to be the field of application of artificial intelligence: the cyber-physical system and “Automation 4.0” (Cristianolalongo, Sergio Bernardini)
  https://doi.org/10.1515/cclm-2019-0226
- Teaching the pony new tricks: competences for specialists in laboratory medicine to meet the challenges of disruptive innovation (Gijsbert Wieringa)
  https://doi.org/10.1515/cclm-2018-0609
- Digital transformation in healthcare – architectures of present and future information technologies (Gayatri Gopal, Clemens Suter-Crazzolara, Luca Toldo and Werner Eberhardt)
  https://doi.org/10.1515/cclm-2018-0658
- Machine learning in laboratory medicine: waiting for the flood? (Federico Cabitza, Giuseppe Banfi)
  https://doi.org/10.1515/cclm-2017-0287

Prospective authors are encouraged to notify the issue editor (Dr. Andrea Padoan, University Hospital of Padova, Laboratory Medicine: andrea.padoan@unipd.it) of their intent to submit articles.

Final article submissions are due by June 01, 2022.

Please reference the “AI and Big Data in Laboratory Medicine Special Issue” in your cover letter.

All manuscripts will undergo the standard CCLM editorial and peer review process. If you have any questions, please contact the editorial office (cclm.editorial@degruyter.com) or Dr. Padoan.