

Call for Contributions

Inform the Chair: with the Title of your Contribution

Submission URL:

<https://www.iariasubmit.org/conferences/submit/newcontribution.php?event=PATTERNS+2018+Special>

Please select Track Preference as **BioPATTOLGY**

Special track

BioPATTOLGY: Patterns in Biological Structures and Systems

Chair and Coordinator: Dr. Jacqueline Daykin, Aberystwyth University (Mauritius Branch Campus), Mauritius
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along with

PATTERNS 2018, The Tenth International Conference on Pervasive Patterns and Applications
<http://www.iaria.org/conferences2018/PATTERNS18.html>

This special track continues the theme of PATTOLGY introduced in a special track at [PATTERNS 2017](#), namely the description and analysis of combinatorial patterns discovered during the scientific process. This 2018 edition will focus on Bio PATTOLGY, that is, patterns inherent in biological systems. For instance, interestingly, humans and other species contain repeating regions in protein and DNA sequences.

The digital explosion era has been rapidly followed by an unprecedented abundance of biological data. Highly interdisciplinary bioinformatics -- computer science, engineering, statistics, and mathematics -- has enabled managing, manipulating, indexing and storing this avalanche of data. Bioinformatics has revealed intricate biological patterns and structures enabling interpreting the data leading to advances in related fields. The synergy between biologists and computer scientists is producing new techniques, solutions and directions. Further approaches such as system modelling supports the analysis of physiology.

Research in molecular biology, specifically DNA sequencing - determining the order of nucleotides in a DNA molecule - has been revolutionized by the rapid development from High Throughput Sequencing (HTS) to Next Generation & 3rd Generation Sequencing (NGS/3GS), impacting on biotechnology, health-care, forensic biology and beyond.

This special track invites research papers involving novel concepts and results founded on combinatorial or meaningful patterns arising in the field of bioinformatics applied to the study of biology and human physiology. Critical literature reviews and surveys which include future research directions will also be considered.

Topics of Bio PATTOLGY encompass, but are not limited to patterns arising in:

- Sequence analysis & pattern inference
- Bioinformatics related graphs & networks
- Bioinformatics related big data
- Bioinformatics related data structures / algorithms such as the Burrows-Wheeler transform
- Bioinformatics related stringology
- Diploid / pan-genome sequences
- Temporal patterns related to biological networks
- Internet/interface issues for bioinformatics
- Bioinformatics management systems

- Biological databases
- Visualization of complex biological data including molecular sequences
- Quantifying biological data
- Physiology derived data patterns

Important Datelines

- Inform the Chair: As soon as authors decided to submit and secured the financial support
- Submission: Nov 3, 2017
- Notification: Dec 3, 2017
- Registration: Dec 17, 2017
- Camera ready: Jan 15, 2018

Contribution Types

- Regular papers [in the proceedings, digital library]
- Short papers (work in progress) [in the proceedings, digital library]
- Posters: two pages [in the proceedings, digital library]
- Posters: slide only [slide-deck posted on www.iaria.org]
- Presentations: slide only [slide-deck posted on www.iaria.org]
- Demos: two pages [posted on www.iaria.org]

Paper Format

- See: <http://www.iaria.org/format.html>
- Before submission, please check and comply with the editorial rules:
<http://www.iaria.org/editorialrules.html>

Publications

- Extended versions of selected papers will be published in IARIA Journals: <http://www.iariajournals.org>
- Print proceedings will be available via Curran Associates, Inc.: <http://www.proceedings.com/9769.html>
- Articles will be archived in the free access ThinkMind Digital Library: <http://www.thinkmind.org>

Paper Submission

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Registration

- Each accepted paper needs at least one full registration, before the camera-ready manuscript can be included in the proceedings.
- Registration fees are available at <http://www.iaria.org/registration.html>

Contact

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