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*First Call for Papers, Satellite Events and Sponsors*

**Living Machines VII: The 7th International Conference on Biomimetic and Biohybrid Systems**

**16 – 19 July 2018**

To be hosted at the Museum National D'Histoire Naturelle,  
Grand amphithéâtre du Museum, and UPMC, Paris, France, EU

Accepted papers will be published in  
Springer *Lecturer Notes in Artificial Intelligence*

Submission deadline: March 12th, 2018

<http://livingmachinesconference.eu/2018>

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**ABOUT LIVING MACHINES 2018**

The development of future real-world technologies will depend strongly on our understanding and harnessing of the principles underlying living systems and the flow of communication signals between living and artificial systems.

**Biomimetics** is the development of novel technologies through the distillation of principles from the study of biological systems. The investigation of biomimetic systems can serve two complementary goals. First, a suitably designed and configured biomimetic artefact can be used to test theories about the natural system of interest. Second, biomimetic technologies can provide useful, elegant and efficient solutions to unsolved challenges in science and engineering.

**Biohybrid** systems are formed by combining at least one biological component—an existing living system—and at least one artificial, newly-engineered component. By passing information in one or both directions, such a system forms a new hybrid bio-artificial entity. The theme of the conference also encompasses biomimetic methods for manufacture, repair and recycling inspired by natural processes such as reproduction, digestion, morphogenesis and metamorphosis.

The following are some examples of “Living Machines” as featured at past conferences:

- Biomimetic robots and their component technologies (sensors, actuators, processors) that can intelligently interact with their environments.
- Biomimetic computers—neuromimetic emulations of the physiological basis for intelligent behaviour.
- Active biomimetic materials and structures that self-organize and self-repair.
- Nature-inspired designs and manufacturing processes.
- Biohybrid brain-machine interfaces and neural implants.
- Artificial organs and body-parts including sensory organ-chip hybrids and intelligent prostheses.
- Organism-level biohybrids such as robot-animal or robot-human systems.

**ACTIVITIES**

The main conference will take the form of a **three-day single-track oral and poster presentation programme**, 17th to 19th July 2018, Museum National D'Histoire Naturelle, Grand amphitéâtre du Museum, and UPMC, Paris, France, EU

The conference programme will include **five plenary lectures** from leading international researchers in biomimetic and biohybrid systems, and the demonstrations of state-of-the-art living machine technologies. The full conference will be preceded by up to two days of **Satellite Events** hosted at Stanford University.

## **SUBMITTING TO LIVING MACHINES 2018**

We invite both **full papers** and **extended abstracts** in areas related to the conference themes. All contributions will be refereed and accepted papers will appear in the Living Machines Proceedings, published in the **Springer-Verlag *Lecture Notes in Artificial Intelligence***.

Full papers (minimum 8 pages, up to 12 pages) are invited from researchers at any stage in their career and should present significant findings and advances in biomimetic or biohybrid research. More preliminary work is better suited for short paper submission (minimum 4 pages, with a maximum of ten references and no more than three self-citations). Full papers will be accepted for either oral presentation (single track) or poster presentation with a short podium preview. Extended abstracts will be accepted for poster presentation only.

Authors of the best full papers will be invited to submitted extended versions of their paper for publication in a special issue of the Taylor & Francis journal **Connection Science**.

## **Satellite events**

Active researchers in biomimetic and biohybrid systems are invited to propose topics for full or half-day **tutorials, symposia or workshops** on related themes to be held on the 24<sup>th</sup> July at the The École normale supérieure in Paris <http://www.ens.fr/en>

Attendance at satellite events will attract a small fee intended to cover the costs of the meeting. There is flexibility about the content, organisation, and budgeting for these events. Please contact us if you are interested in organising a satellite event!

## **EXPECTED DEADLINES**

March 12th, 2018 Paper submission deadline

April 28th, 2018 Notification of acceptance

May 15th, 2018 Camera ready copy

July 16<sup>th</sup> - 19<sup>th</sup>, 2018 Workshops and Conference

## **SPONSORSHIP**

Organisations wishing to sponsor the conference in any way and gain the corresponding benefits by promoting themselves and their products through conference publications, conference events, and conference publicity are encouraged to contact the organisers to discuss the terms of sponsorship and necessary arrangements. We also offer a number of attractive options to potential sponsors.

## **VENUE**

Consistent with the Living Machines' tradition of choosing historical venues at the crossroads between life and human sciences, this year the conference will take place at the Museum National D'Histoire Naturelle <http://www.mnhn.fr/fr> an historical muséum located in the heart of Paris that for almost 400 years has focused on nature and its relationship with humans. The muséum is immersed in history, yet at the heart

of current affairs, and is also working to be projected towards the future. Poster sessions will be organized at UPMC.

#### **CONFERENCE COMMITTEE**

**Jose Halloy** Université Paris Diderot (Local Organizing Chair)

**Paul Verschure** IBEC, BIST, ICREA (Co-Chair)

**Tony Prescott** University of Sheffield (Steering Committee)

**Vicky Vouloutsy** IBEC, BIST, Barcelona (Programme Chair)

**Michael Mangan** University of Lincoln (Programme Co-Chair)

**Nathan Lepora** University of Bristol (Communication)

**Anna Mura** IBEC, BIST, Barcelona (Web, Communication)

#### **LOCAL ORGANIZERS COMMITTEE**

**Stéphane Doncieux** UMPC, ISIR, FR

**Benoît Girard** DR CNRS, UPMC, ISIR, FR

**Emmanuelle Pouydebat** DR CNRS, Muséum d'Histoire Naturelle, FR

**Vincent Bels** Muséum d'Histoire Naturelle, FR