

RESEARCH TOPICS

- ANALYSIS AND MODELLING
- GEOMETRY, GROUPS AND DYNAMICS
- PROBABILITY AND STATISTICS
- NUMBER THEORY

CROSS-CUTTING THEMES

- FUNDAMENTAL MATHEMATICS
- MATHEMATICAL AND STATISTICAL PHYSICS
- MATHEMATICS OF LIFE AND EARTH
- MATHEMATICS OF ARTIFICIAL INTELLIGENCE
- MATHEMATICS EDUCATION

A LABORATORY AT THE CENTER OF SOCIETY

House of Mathematics and Computer Science (MMI):

- Seminar of mathematical relaxation
- Mathematics Evenings of Lyon
- Exhibitions

Operation Math@Lyon

Discrete Mathematics Club

Science Festival

Science and Society Conferences

Film "Chaos"

Play "Letters of the Fourth Dimension" about Alicia Boole

Radio broadcasts, newspaper columns, TV programs

KEY FIGURES

81 staff including **35** researchers, **33** PhD students and post-doctoral fellows and **6** research support staff

Over the last 5 years

279 publications

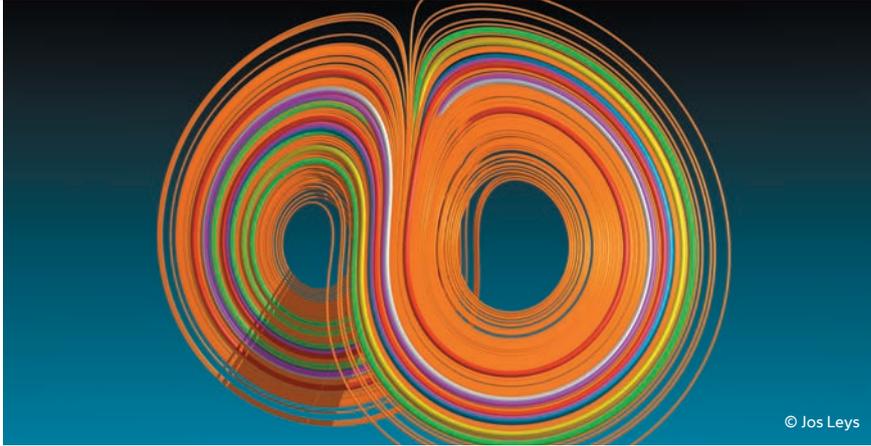
prizes and distinctions including **1** CNRS medal, **4** IUF, **1** Blaise Pascal medal, **1** appointment to the rank of knight in the national order of the Legion of Honor and **3** members of the French Academy of Sciences

15 public funding including **4** ERC, **8** ANR, **2** PEPS, **1** AI Chair

21 theses

TRL scale between **1** and **4**

PURE AND APPLIED MATHEMATICS UNIT – UMPA



FROM THE LABORATORY TO THE SOCIO-ECONOMIC WORLD

- Clinical and medical data modelling
- Mathematical modelling in cancer immunotherapy
- Stochastic models for biology and medicine
- Dense snow avalanches, landslides
- Statistical physics, kinetic theory of gases, quantum physics, condensed matter
- Theoretical understanding of evolutionary phenomena
- Machine learning
- Artificial intelligence under confidentiality constraint

FOCUS ON

Institutional partnership research

Collaboration Simons «wave turbulence», interdisciplinary and international project between mathematical and physical sciences. This collaboration is the first attempt at a coordinated systematic study of wave turbulence theory as part of a large-scale project, bringing together cutting-edge skills in the fields of mathematics and physics, with theoretical, experimental and numerical expertise.

Private partnership research

Collaboration with Sanofi Pasteur on the stability of pharmaceutical products: How long can a vaccine be stored in a refrigerator? Is it still active after an accident (break in the cold chain)? What is the impact of a change in formulation? To answer these questions, software has been developed with Sanofi and is currently being developed by Sanofi as part of the WHO's «last mile problem».

CONTACT

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