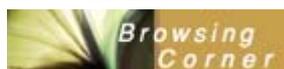
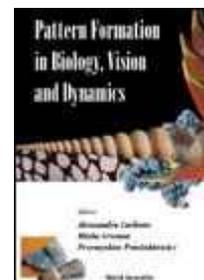



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PATTERN FORMATION IN BIOLOGY, VISION AND DYNAMICS

 by **Alessandra Carbone** (*University of Paris XII*),
Misha Gromov (*Institut d'Hautes Etudes Scientifiques*
 & *Courant Institute of Mathematical Sciences*) &
Przemyslaw Prusinkiewicz (*University of Calgary*)

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Half a billion years of evolution have turned the eye into an unbelievable pattern detector. Everything we perceive comes in delightful multicolored forms. Now, in the age of science, we want to comprehend what and why we see.

Two dozen outstanding biologists, chemists, physicists, psychologists, computer scientists and mathematicians met at the Institut d'Hautes Etudes Scientifiques in Bures-sur-Yvette, France. They expounded their views on the physical, biological and physiological mechanisms creating the tapestry of patterns we see in molecules, plants, insects, seashells, and even the human brain. This volume comprises surveys of different aspects of pattern formation and recognition, and is aimed at the scientifically minded reader.

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- From Pseudo-Random Numbers to Stochastic Growth Models and Texture Images (L P Yaroslavsky)
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- A Classification of Plant Meristems Based on Cellworks (3D L-Systems). The Maintainance and Complexity of Their Cellular Patterns (J Lück & H B Lück)
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- Mechanical Stress Patterns in Plant Cell Walls and Their Morphogenetical Importance (Z Hejnowicz)
- Tensorial Model for Growth and Cell Division in the Shoot Apex (J Nakielski)
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- 3D DNA Patterns and Computation (N Jonoska)
- Circular Suggestions for DNA Computing (T Head)
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- **Images and Perception:**
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Readership: Biologists, mathematicians and computer scientists.

"This gorgeously produced book gives an important entrée into the emerging world of biological mathematics ... One of the most revolutionary and exciting areas discussed in this book is that of DNA computing and DNA nanotechnology ... Mathematicians should find this book a fascinating introduction as well as a useful source book."

Journal la Gazette des Mathématiciens, 2002

444pp

Pub. date: Apr 2000

ISBN 981-02-3792-8 US\$111 / £76

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 Updated on 31 December 2007