

## **Introduction**

EURANDOM was founded as an international institute on June 30, 1997 by the Netherlands Organisation for Scientific Research (NWO) and Eindhoven University of Technology (TU/e) and has been operational since the summer of 1998. Basic funding came from NWO and TU/e, until December 31, 2007.

As the first postdocs arrived during the second half of 1998, we decided to celebrate the 10th anniversary in 2008.

## **Mission Statement**

The mission of EURANDOM is to foster research in the stochastic sciences and their applications. It achieves this mission:

- ▲ by recruiting and training talented young researchers and helping them to find their way to tenured positions in academia and industry;
- ▲ by carrying out and facilitating research through postdoctoral and graduate appointments, visitor exchange and workshops;
- ▲ by taking initiatives for collaborative research at the European level.



## **The role of stochastics**

Stochastics, consisting of statistics, probability theory and stochastic operations research, is a mathematical discipline that plays an important role in our technological society. We are more and more faced with organisations, systems and processes so complex that a description and analysis in terms of random elements is more appropriate and effective than a fully deterministic approach. Accordingly, stochastics is becoming increasingly important in other disciplines, like physics, chemistry, biology, economics and telecommunication.

Stochastics is internationally flourishing. Consequently, there is a great need to train a new generation of mathematicians with a strong knowledge of the foundations of stochastics, a good insight into the applicability of stochastics in diverse areas, and an open attitude toward newly developing theories and applications.

## **Research at EURANDOM**

Research at EURANDOM covers stochastics and its applications, as well as its interfaces with other disciplines. The core business of EURANDOM is fundamental research in an international environment, carried out by a select and non-tenured staff of junior researchers and senior advisors, supplemented with an extensive programme of seminars, workshops and visitors. In spite of its modest size, EURANDOM is engaged in many activities on a local, national and international scale, making it into an important research facility in Europe.



## **Workshops and visitors**

One of the key instruments of EURANDOM in realising its mission is its workshop and visitor programme. This programme offers young scientists a well developed training opportunity. Workshops gather top researchers in the field. Sometimes concentrated mini-courses are given, in some cases junior researchers play a special role in a workshop. With the visitors they frequently develop a close cooperation.

## **Research programmes**

The scientific activities of EURANDOM are organised in three research programmes, which all are central in the area of stochastics. Programmes have two to four themes. In addition to the three programmes other projects may be running. In 2006 a new project as a follow-up of the Battery Management programme started: Integrated Batteries (i-BAT).

### **Queueing and Performance Analysis (QPA)**

- ▲ Performance Analysis of Production Systems
- ▲ Performance Analysis of Communication Systems
- ▲ Queueing Theory
- ▲ Multivariate Risk Modelling

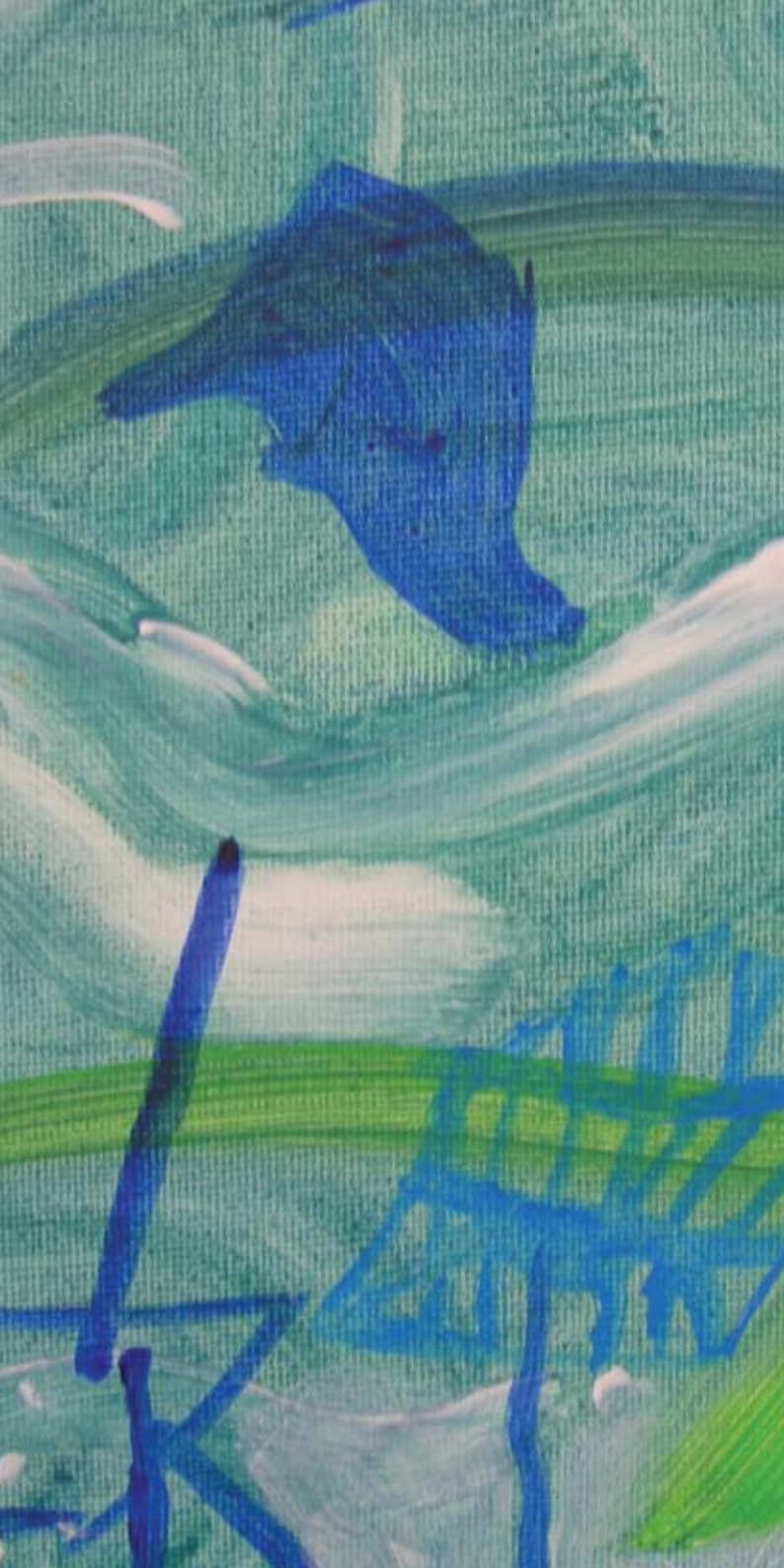
### **Random Spatial Structures (RSS)**

- ▲ Critical Phenomena
- ▲ Disordered Systems
- ▲ Combinatorial Probability

### **Statistical Information and Modelling (SIM)**

- ▲ Statistical Signal and Image Analysis
- ▲ Statistics in Biology

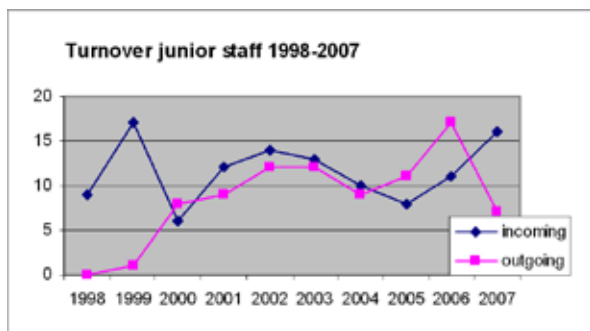
Research at EURANDOM is thematic and interdisciplinary.



## Scientific staff

At any time about 25 junior researchers are working at EURANDOM. Each programme hosts in average eight postdocs and graduate students, supervised by senior scientific advisors, and guided by an international steering committee. Since its start, 100 PD's and PhD's have been working at EURANDOM (excluding the employed researchers). Most of the researchers found tenured positions in academia or industry after leaving the institute.

About one third of the former employees found a position at a Dutch university or in a research group of a Dutch industry. About 2/3rd has secured tenured positions in academia or industry.



## Board, Scientific Council and Directors

### Board

- ▲ Dr.ir. J.M.M. Ritzen  
(chair, January 2004-December 2007)
- ▲ Prof.dr.ir. C.J. van Duijn  
(member since April 2005)
- ▲ Prof.dr. F.A. van der Duyn Schouten  
(member since May 2006)



## **Scientific Council**

- ▲ Professor J. Beirlant  
(Katholieke Universiteit Leuven, Belgium)
- ▲ Professor E. Bolthausen  
(University of Zürich, Switzerland)
- ▲ Professor S. Borst  
(Eindhoven University of Technology, The Netherlands & Bell Labs, Lucent Technologies, Murray Hill, United States of America)
- ▲ Professor D. Dawson (chair),  
(Carleton University, Ottawa & McGill University, Montreal, Canada)
- ▲ Professor F. Delbaen  
(ETH Zürich, Switzerland)
- ▲ Professor A. Frigessi  
(University of Oslo, Norway)
- ▲ Professor P. Green  
(University of Bristol, United Kingdom)
- ▲ Professor A. Greven  
(Friedrich-Alexander-Universität, Erlangen-Nürnberg, Germany)
- ▲ Professor P. Hall  
(Australian National University, Canberra, Australia)
- ▲ Professor P. Massart  
(Université Paris Sud XI, Orsay, France)
- ▲ Professor V. Schmidt  
(Universität von Ulm, Germany)
- ▲ Professor N. Veraverbeke  
(Hasselt University, Diepenbeek, Belgium).

## **Directors**

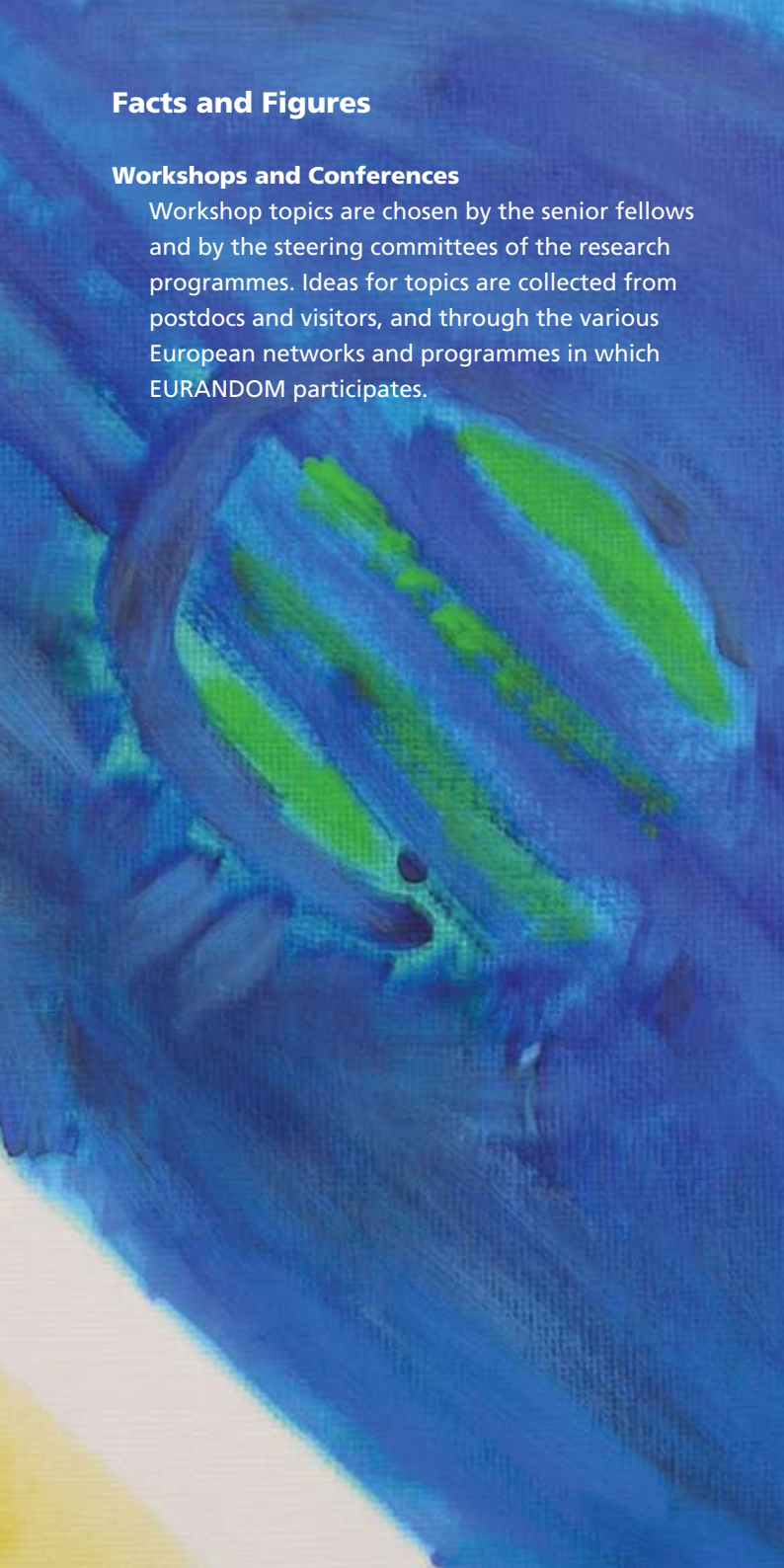
Professor O.J. Boxma, scientific director  
(since October 2005);

Drs. C.M.M. Cantrijn, managing director  
(since December 2006).

## Facts and Figures

### Workshops and Conferences

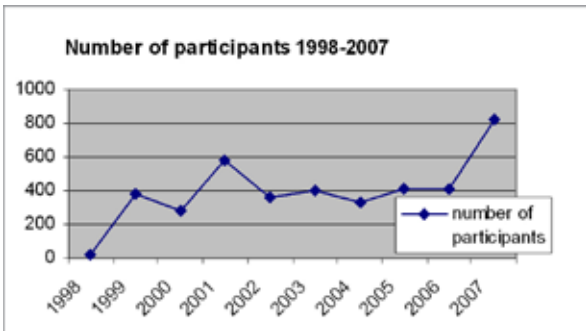
Workshop topics are chosen by the senior fellows and by the steering committees of the research programmes. Ideas for topics are collected from postdocs and visitors, and through the various European networks and programmes in which EURANDOM participates.



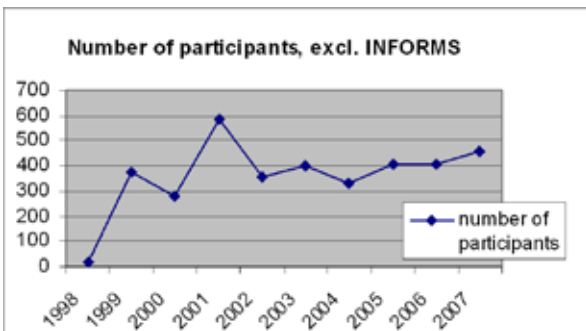
## Workshops and Conferences 2007

March 19-23	RSS
YEP IV (Young European Probabilists) - "Random Graphs and Complex Networks"	
March 23	General
Stieltjes afternoon on the work of the Fields medal 2006 winners	
April 16-18	QPA-MVR
Mathematical Methodologies for Operational Risk	
June 18-22	RSS
Random Polymers	
July 9-11	QPA
Applied Probability INFORMS Conference	
July 12	QPA
3rd Korea-Netherlands Workshop on Queueing Theory and its Applications to Telecommunicati- ons Systems	
September 10-13	RSS
Sandpile Models and Related Fields	
September 24-26	SIM
Algorithms in Complex Systems	
October 8-12	SIM
YES I (Young European Statisticians) - "Shape Restricted Inference"	
October 17-19	QPA
YEQT I (Young European Queueing Theorists) "Queueing Theory without limits: transient and asymptotic analysis"	
November 2 & 3	RSS
BRG-meeting	
November 15 & 16	QPA
E-Quality	
December 10 & 11	QPA-MVR
Multivariate Risk Management	





- ▲ Number of workshops in 2007: 13
- ▲ Total number of participants in 2007: 822



- ▲ Without the INFORMS participants, which number influences the average strongly: 461

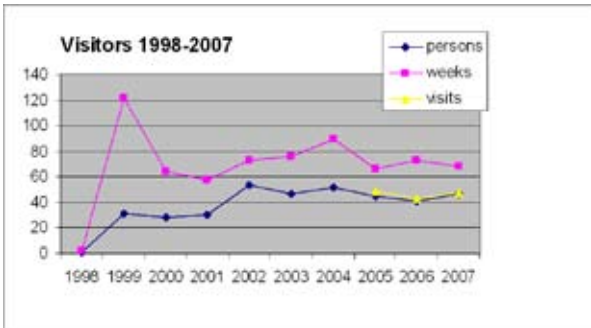
### Lectures and seminars

Lectures and seminars are organised on a regular basis within the framework of each of the three research programmes. Sometimes seminars are joint events, e.g. the Informal Meetings of Eindhoven Statisticians with TU/e and the national Mark Kac seminar.

- ▲ Total number of lectures and seminars in 2007: 114.

## Visitors

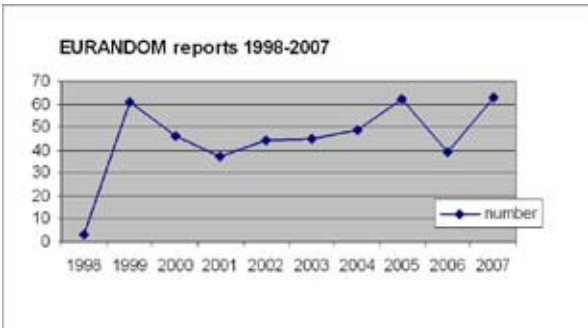
In 2007 46 researchers visited EURANDOM, from several days up to 2 months.



- ▲ Total number of visitors in 2007: 46
- ▲ Total number of visits in 2007: 47
- ▲ Total duration of stay in weeks: 68

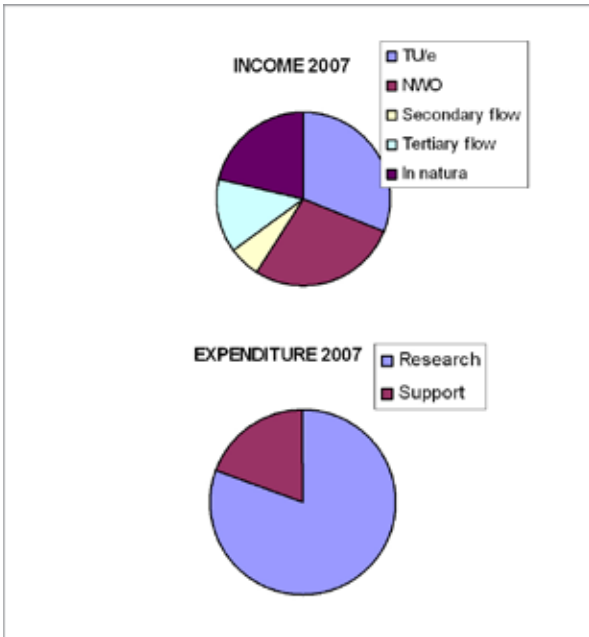
## Publications

In 2007, 62 EURANDOM Reports were written, while 93 publications appeared in international refereed journals.



## Finance

The following figures report on income and expenditure:



*Research includes costs of salary of postdocs and graduate students, scientific director, senior fellows, EURANDOM chair, computing, library, workshops & visitors and travel costs.*

*Support includes salary of the administrative staff and managing director, housing, depreciation and general costs.*

## **Location**

EURANDOM is located on the campus - Laplace building - of Eindhoven University of Technology (TU/e), the Netherlands. The TU/e campus is situated close to the centre and the railway station of Eindhoven.

## **Facilities**

EURANDOM provides office space and computing facilities. Lecture rooms and a modest library annex common room are also available. Full scale libraries may be found on the campus of the TU/e.

The TU/e campus offers facilities such as a sports centre, a language lab and restaurants, also available for EURANDOM staff.

Postdocs and long-term guests can be accommodated in one of the University guest houses. All employees are allowed to join the TU/e collective health insurance and can get help with procedures concerning visa, work permit etc.



Prof.dr.ir. Onno Boxma,  
Scientific Director  
Eindhoven, June 2007