

Annabelle BALLESTA

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French, born on February, 16th 1982.



Research scientist in Applied Mathematics & Biomedicine

Education:

2007-2011	PhD thesis in Applied Mathematics and Pharmacology within the BANG project-team at INRIA (National Research Institute of Computer Science, Rocquencourt, France) and the INSERM (National Research Institute of Health and Medicine) team U776 "Rythmes biologiques et cancer" (Villejuif, France) on: "A combined mathematical and experimental approach for the study of anticancer drug pharmacokinetics-pharmacodynamics and their circadian control".
2006 / 2007	1 year and a half of Master in Applied Mathematics at Université de Montréal (Montréal, Canada) on: "Blood rheology in small vessels"
Nov. 2005	French "Diplôme d'ingénieur" of INSA (National Institute of Applied Science, Rouen, France), department of applied mathematics and computer science.
2004 / 2005	Exchange student at University of Leeds , school of mathematics (Leeds, England) within the ERASMUS program.
2002 / 2005	INSA of Rouen , department of applied mathematics and computer science
2000 / 2002	Preparatory classes Mathematics-Physics at Claude Bernard High School (Paris, France)
1999 / 2000	Scientific French "Baccalauréat" at Descartes High School (Rabat, Maroc), within a two-year expatriation.

Publications:

- A. Ballesta, S. Dulong, A. Okyar, C. Abbara, B. Cohen, F. Levi, J. Clairambault: *A combined biological and mathematical approach for studying the circadian control of the anticancer drug Irinotecan Pharmacokinetics-Pharmacodynamics at a molecular level*, submitted to PloS Computational Biology.
- A. Ballesta, J. Clairambault, S. Dulong, F. Levi: *Theoretical Optimization of Irinotecan-based Anticancer Strategies in case of Drug-induced Efflux*, submitted to Applied Mathematics Letters.
- A. Ballesta, M. Doumic-Jauffret, J. Lopez, P. Gonzalo, G. Gillet: *Modeling Src control on the mitochondrial pathway to apoptosis, implications for cancer therapeutics*, in preparation for submission to PloS Computational Biology.

Scientific Prize:

- "**Prix Delattre**" for the best oral presentation of a PhD student, awarded by the French-Speaking Society of Theoretical Biology (SFBT), may 2009.

Scientific skills:

- Mathematics: ordinary differential equations, partial differential equations, parameter estimation, optimization under control.
- Programming: Matlab, C/C++, Fortran, Biocham.
- Cell biology: cell culture, Western blot, High Performance Liquid Chromatography (HPLC).
- Office skills: LateX, Microsoft Office.
- Multimedia: Final Cut.
- Languages: English (good level), Spanish (beginner).

Professional experience:

- **Associate Engineer** at **ACCENTURE** (Paris, France) (October-December 2005): ticketing for public transportation in Denmark. Programming: C#, html, javascript.
- **Internship** at **DASSAULT SYSTEMES** (Suresnes, France), June-September 2004 : detection of static contact, improvement of the function of the CATIA software by using canonical information of simple geometrical shapes. Programming: C++.
- **Internship** at **INRIA** (Rocquencourt, France), July-August 2003 : detection of symmetries on constraint programming problems. Programming: Prolog.

Teaching:

- **Teaching Assistant** in Mathematics at Université de Montréal (2006-2007).
- **Private tuitions** in Mathematics to two high school students (2005 and 2007-2010).

Conferences:

As Invited speaker:

- December 2009 : *Mathematical Modeling of Biology and Health seminar*, at Institut Camille Jordan, Université Lyon I, Lyon, France.

Oral presentations:

- June 2010: *2nd international congress of the Moroccan Society for Applied Mathematics (SM2A)*, Rabat, Morocco.
- May 2010: *3rd international conference of the French-speaking Society for Theoretical Biology (SFBT)*, Tunis, Tunisia.
- February 2010: *Role and Impact of Mathematics in Medicine*, Institut Henri Poincaré, Paris, France.
- January 2010: *Mathematical Model in Systems Biology*, Tel Aviv, Israel
- November 2009 : *Closing conference of the European project TEMPO*, Paris, France
- June 2009 : *29th seminar of the SFBT*, Saint-Flour, France
- April 2009 : *Spring Workshop on Mathematical Modeling in Biology and Medicine*, Dubrovnik, Croatia
- March 2009 : *seminar of the French-speaking Society of Chronobiology*, Aussois, France
- December 2008 : *Workshop on PK-PD of anticancer drugs : resistance and synergies*, Paris, France
- June 2008 : *Meeting of the European project TEMPO*, Milan, Italie.
- June 2008: *First meeting CRM-INRIA-MITACS*, Université de Montréal, Canada
- June 2008 : *Graduate Summer School in Mathematical Biology* , Vancouver, Canada
- March 2008 : *Meeting of the European project TEMPO*, Oxford, England
- August 2007 : *Modeling, Mathematical Methods and Computer Simulation of Tumor Growth and Therapy*, Dundee, Scotland

Posters:

- October 2009 : *Young scientist conference at Institut Andre Lwoff (IAL)* , Paul Brousse Hospital, Villejuif, France
- October 2009 : *Opening of INSERM Institute of Health Technologies (ITS)*, Paris, France
- October 2008 : *Systems Biology for Medical Applications Summer School*, Tenerife, Spain

Audience:

- June 2009: *Cancer Systems Biology summer school*, Rostock, Germany.
- January 2008: *Marrakesh International Conference and Workshop on Mathematical Biology*, Marrakesh, Morocco.

Communications:

- **Making of the short movie « Soyez sympas, synchronisez! » on my PhD thesis subject, within the festival «Les Chercheurs font leur cinéma »** organized by Université Paris 6 : http://interstices.info/jcms/n_52317/annabelle-ballesta-a-la-decouverte-des-biomathematiques

The festival received the prize “**Le goût des sciences**” awarded by **the French Research Ministry** (2009).

- Interview on my research project for **Interstices**, a website of scientific vulgarization: http://interstices.info/jcms/n_52317/annabelle-ballesta-a-la-decouverte-des-biomathematiques (2010)
- Filmed Interview for **Phosphore** magazine and website, question test for high school students “Are you made to be a research in numeric sciences?” (2008)
- Presentation to winners of the French mathematics contest “Olympiades” of education to become a researcher (2009).
- Animation of INRIA stand at Saclay (France) for the “Fete de la Science” (2008)