Déborah Boyenval

Postdoctoral Fellow

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Born 02/12/1994

Academic Background

Jan. 2024 - Jan. 2025	**Postdoctoral Fellow**, *Influence of aging on hematopoietic cell differentiation: from single-cell data to eXplicative formal models*, Laboratoire Bordelais de Recherche en Informatique (Bordeaux, France). with Loïc Paulevé
Oct. 2018 - Dec. 2022	**PhD in Computer Science**, *Formal modelling of cyclic biological behaviours with checkpoints: the cell cycle regulation*, Laboratoire d'Informatique Signaux et Systèmes de Sophia Antipolis, Institut de Biologie de Valrose, Université Côte d'Azur, *Fondation Université Côte d'Azur Ph.D thesis award 2024*. Supervised by Gilles Bernot, Jean-Paul Comet and Franck Delaunay
Jan.-Jun. 2018	**Master 2 Internship**, *Mathematical modeling of sex-specific chronotoxicity of an anticancer drug: the irinotecan*, INSERM U935 Villejuif, Team Chronotherapy and Cancer Supervised by Annabelle Ballesta
Fev.-Jun. 2017	**Master 1 Internship**, *Study and qualitative modelling of a pathway for the synchronisation of peripheral circadian clocks by the suprachiasmatic nucleus*, Laboratoire d'Informatique Signaux et Systèmes de Sophia Antipolis, Institut de Biologie de Valrose, Université Côte d'Azur Supervised by Gilles Bernot, Jean-Paul Comet and Franck Delaunay
2016 – 2018	**Master in Life Sciences, Université Côte d'Azur**, *Major in Biology, Informatics and Mathematics (BIM)*, Université Côte d'Azur
Jun. 2016 Jul. 2016	**Bachelor Internship**, *Study of the reciprocal link between the nervous system and the immune system*, Institut de Pharmacologie Moléculaire et Cellulaire, Université Côte d'Azur Supervised by Pr. Nicolas Glaichenhaus and Franck Ceppo
2013 – 2016	**Bachelor in Life Sciences, Université Côte d'Azur**, *Specialization in Biology, Informatics and Mathematics (BIM) in the 3rd year*, Université Côte d'Azur

Teaching

Oct. 2021 - Sept. 2022	**Part-time ATER**, Université Côte d'Azur
2018 – 2021	**Teaching Assistant**, *1st and 2nd year BSc, MSc*, Web Introduction and Application, System and Network Administration, Database Theory and SQL, Imperative Programming and Python, Algorithms for Biology, Université Côte d'Azur

Publications

Publications

2022	**Sex and Circadian Timing Modulate Oxaliplatin Hematological and Hematopoietic Toxicities**, *Dulong Sandrine, Souza Lucas, Machowiak Jean, Peuteman Benoit, Duvallet Gaelle, Boyenval Déborah, Roth Elise, Asgarova Afag, Chang Yunhua, Li Xiao-Mei, Foudi Adlen, and Ballesta Annabelle, Pharmaceutics, vol. 14, pp. 2465, Nov, 2022*

Proceedings

2024	**BoNesis: a Python-based declarative environment for the verification, reprogramming, and synthesis of Most Permissive Boolean networks**, *Stéphanie Chevalier, Déborah Boyenval, Gustavo Magaña-Lopez, Théo Roncalli, Athénaïs Vaginay, Loïc Paulevé*, 18th International Conference on Computational Methods in Systems Biology (CMSB 2024), June, 2024
2020	**What is a cell cycle checkpoint? The ToTemBioNet answer**, *Boyenval Déborah, Bernot Gilles, Collavizza Hélène, and Comet Jean-Paul*, 18th International Conference on Computational Methods in Systems Biology (CMSB 2020), Sep, 2020

Oral Communications

Talks

September 2022	**Formal modeling of biological cyclic behavior with checkpoints: the case of the cell cycle with CTL Model-checking**, *Women In Machine Learning and Data Science*, UPMC Paris VI
March 2022	**A discrete modelling study devoted to the formalization and verification of mammalian cell cycle checkpoints**, *Lifeware Public Seminar*, Inria Saclay
November 2021	**Mammalian cell cycle: formalizing phases**, *GT-Bioss Annual Day, Lyon*
June 2021	**Logical modelling in biology through the case study of the cell cycle and its checkpoints**, *Public Seminar of the Institute of Biology of Valrose*, Nice
November 2020	**Study of cell cycle checkpoints: specification and verification**, *GT-BIOSS Mensual Seminars*, Remote
September 2020	**What is a cell cycle checkpoint, The TotemBioNet answer**, *CMSB 2020*, Remote
April 2021	**From phase characterization toward observable properties verification**, *Public PhD Seminar, NeuroMod Institute*, Sophia Antipolis

Poster Sessions

July 2021	**JOBIM 2021**, *Logical and incremental formalization of cell cycle checkpoints*, Remote
November 2019	**Modelife Annual Meeting**, *Introduction of Priorities in Biological Regulatory Networks*, Frejus France
June 2019	**Summer School Formal Modeling of Biological Regulatory Networks**, *A discrete cell cycle model, From phase characterization toward observable properties verification*, Porquerolles

Modeling skills

Formal modeling	Design of biological regulatory network, CTL model-checking, Hoare logic, Prolog, René Thomas' formalism, Synthesis of boolean networks, Answer-Set Programming
ODE system	Parameter estimation (CMAES), Sensitivity Analysis, Circadian data analysis
Statistics	Trajectory inference, RNA velocity analysis, Application on hematopoetic systems
Omics	Analysis of multimodal omics data (sc-RNA-seq and CITE-seq)
Biological background	Cancer biology, Cell cycle regulation, Circadian system, PK-PD of certain anti-cancer drugs

Programming skills

Programmation	Python, Prolog, R, Matlab, Java, SQL, HTML3/CSS5/PHP/Javascript/Ajax, Shell, LATEX, Git

Tools	Moodle (Creation of online teaching materials), PyMol
Biological Databases	Protein DataBank, Genome browsers (Ensembl, UCSC), Uniprot, Prosite, Reactome, CollectTRI

Associative

2018 – 2019 **Fablab manager**, *UCA Valrose campus*, Support for 3D printing projects (Ultimaker)

2019 – 2021 **Treasurer of ADAMS-DS4H (Association of Doctoral And Master's Students of DS4H)**, Search for financial partnerships, organisation of academic events (CV and poster workshops) and federative events (integration party and sports events)

Languages

Native French, Fluent English