

## Ouriel CAEN

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### Ouriel Caën

ouriel.caen<at>parisdescartes.fr

27 years old

French, Israeli

LinkedIn

## BIOGRAPHY

Ouriel is a biophysicist who develops new microfluidic technologies to tackle questions related to the emergence of resistance to targeted cancer therapies at the single-cell level. His research involves academic international collaborations (Max Planck Institute, Göttingen, Germany; Bordeaux University, France; EPFL, Switzerland) as well as industrial collaborations (Fluigent, Paris). He is now looking for opportunities in technological transfer.

## EDUCATION

2016-

### TTO eDIAG platform

2012–2016

**Université Sorbonne Paris Cité / FDV International PhD program**, Paris, France.

**Valérie Taly's group, PhD student**

- Directed evolution to highlight new cancer biomarkers using digital microfluidics

Collaboration with the **Group of Jean Christophe Baret, Max Planck Institute of Göttingen (Germany)/ Univ. of Bordeaux (France)**.

2010-2012

**Paris Diderot University, Center for Research and Interdisciplinarity**, Paris, France

**Master of Science (MSc) in Biophysics**

## EXPERIENCE IN INDUSTRY

April–September 2012

**L'Oréal, L'Oréal Research & Innovation / Department of Advanced Research, Skin Biophysics group**,

Aulnay-sous-Bois, France

- Modification of Stratum Corneum thermotropic behaviour by cosmetic formulations

*June–July 2009*

**ENEMA Electronics & Mechanics**, Jerusalem, Israel

- Maximum Power Point Tracking of photovoltaic systems using extremum-seeking Control and Matlab-Simulink modeling

*July–August 2008*

**SNCF, French National Railway Corporation**, Paris, France

- Commercial officer

## **EXPERIENCE IN ACADEMY**

*January - April 2012*

**ESPCI, Patrick Tabeling's group**, Paris, France

- Droplet-based microfluidics for single neuron analysis to study Parkinson's disease in *Drosophila*

*September - January 2011*

**Institut Curie, Jean François Joanny's group**, Paris, France

- Mechanical control of cell flow in multicellular spheroids

*May - November 2011*

**Center for Research and Interdisciplinarity, iGEM competition**, Paris, France

- “TuBe or not TuBe?” 2011: characterization of a new cell-to-cell bacterial communication system (via nanotubes) using synthetic constructs

*June - August 2010*

**Hebrew University of Jerusalem, Hadassah Medical Center, Assaf Zemel's group**, Jerusalem, Israel

- Dynamics of cell spreading, as a function of the kinetics of the lamellipodium-substrate interaction and the matrix rigidity

## **TEACHING/MENTORING**

*October 2015 & 2016*

Design and organization of a two day microfluidics laboratory course for B.Sc. students

*May-July 2016*

Supervision of M.Sc. intern Giorgos Pavlou (Interdisciplinary Approaches to Life Science (AIV) Master Program (M2))

*February-June 2016*

Supervision of M.Sc. intern M.S.S. Jammalamadaka. (Interdisciplinary Approaches to Life Science (AIV) Master Program Student (M1))

*June-July 2014*

Co-Supervision of bachelor intern Siddhansh Agarwal. Mechanical Engineering at Birla Institute of Technology & Science

(BITS),Pilani, India.

Today PhD student at University of Illinois Urbana-Champaign, USA.

*March-May 2013*

Supervision of master intern Aishah Prastowo (Interdisciplinary Approaches to Life Science (AIV) Master 2013 Program Student (M2)).

Today PhD student at Department of Engineering Science, University of Oxford, Oxford, UK.

## AWARDS

*2015*

**ARC foundation**, France

- 1 years PhD fellowship

*2012*

**French National Cancer Institute**, France

- 3 years full PhD fellowship

*2011*

**MIT's International Genetically Engineered Machines competition (iGEM)**, Boston, USA

- First runner-up of European Championship, Best Presentation Prize

## PUBLICATIONS

*2016*

**Accurate high-throughput cell counting using droplet-based microfluidics.** H. Lu#, O. Caen#, J. Vrignon, P. Nizard, J-C. Baret, V. Taly. Scientific reports. In press. #Co-first name.

**Multiplex Detection of Rare Mutations by Picoliter Droplet Based Digital PCR: Sensitivity and Specificity**

**Considerations.** Zonta E, Garlan F, Pécuchet N, Perez-Toralla K, **Caen O**, Milbury C, Didelot A, Fabre E, Blons H, Laurent-Puig P, Taly V. PLoS One. 2016 Jul 14;11(7):e0159094.

*2015*

**Parallelized ultra-high throughput microfluidic emulsifier for multiplex kinetic assays.** Lim J, **Caen O**, Vrignon J, Konrad M, Taly V, Baret JC. Biomicrofluidics. 9(3):034101.

*2014*

**Pipette-and-play: parallelized ultra-high throughput microfluidic emulsifier for quantitative biochemical assays.** J. Lim, **O. Caen**, J. Vrignon, M. Konrad, V. Taly and J.C. Baret.

In: Proceedings of the 18th International Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS), p. 258-260. ISBN: 978-0-9798064-7-6.

**[Digital PCR compartmentalization II. Contribution for the quantitative detection of circulating tumor DNA].** Caen, O., Nizard, P., Garrigou, S., Perez-Toralla, K., Zonta, E., Laurent-Puig, P. and Taly, V.\* Medecine/Sciences. 31(2):180-6.

2013

**Mechanical Control of Cell flow in Multicellular Spheroids.** Morgan Delarue, Fabien Montel, **Ouriel Caen**, Jens Elgeti, Jean-Michel Siaugue, Danijela Vignjevic, Jacques Prost, Jean-François Joanny, and Giovanni Cappello. Phys. Rev. Lett. 110, 138103

## **ORAL COMMUNICATIONS (peer reviewed scientific conferences)**

**Assessing cancer drug resistance at the single-cell level.** NanoBiotech Montreux, Montreux (2016).

**Pipette & play microfluidics: towards simple parallelization.** IFP Energies nouvelles, Paris (2015).

**Pipette-and-play: parallelized ultra-high throughput microfluidic emulsifier for quantitative biochemical assays.**

Conference on Miniaturized Systems for Chemistry and Life Sciences (MicroTAS), San Antonio, Texas (2014).

**Pipette-and-play: parallelized ultra-high throughput microfluidic emulsifier for quantitative biochemical assays.** GDR

Micro Nano Systems-Micro Nano Fluidic. Ecole Polytechnique, Palaiseau - France. (2014).

## **ORAL COMMUNICATIONS (academic & industrial workshops)**

**Pipette & play microfluidics: towards simple parallelization.** IFP Energies nouvelles, Paris. November 5th 2015.

**Pipette & Play microfluidics. Towards simple parallelization.** Fluigent workshop on microfluidics, Fluigent Headquarters, Villejuif, France. July 9th 2014.

**Microfluidics, Cancer and Directed Evolution.** Seminar. Interdisciplinary Fridays, Center for Research and Interdisciplinarity, Paris. France. June 14h 2013.

## **LANGUAGES**

French (Native), Hebrew (Native), English (Full professional proficiency), Arabic (Elementary proficiency)

## **CONTACTS**

- Prof. Valérie Taly. [valerie.taly@parisdescartes.fr](mailto:valerie.taly@parisdescartes.fr). 01 70 64 99 73.
- Prof. Jean-Christophe Baret. [jean-christophe.baret@u-bordeaux.fr](mailto:jean-christophe.baret@u-bordeaux.fr). 05 56 84 56 34.
- Dr. Yegor Domanov. [YDOMANOV@rd.loreal.com](mailto:YDOMANOV@rd.loreal.com). 01 58 31 73 28.