

Ouriel CAEN

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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. 01 70 64 99 73.
- Prof. Jean-Christophe Baret. jean-christophe.baret@u-bordeaux.fr. 05 56 84 56 34.
- Dr. Yegor Domanov. YDOMANOV@rd.loreal.com. 01 58 31 73 28.