

## Curriculum Vitae

Raphaël CANDELIER

Laboratoire Jean Perrin - Sorbonne Université / CNRS 8237, France

### Professional experience and diplomas

- 2022 – present **CNRS Research Scientist** (CR) and leader of the team *Emergent phenomena* at Laboratoire Jean Perrin, Sorbonne Université, Paris, France
- 2012 – 2022 **CNRS Research Scientist** (CR) on *Larval zebrafish behavior and functional imaging*, at Laboratoire Jean Perrin, Sorbonne Université, Paris, France
- 2017 **Habilitation à diriger les recherches** (HdR), *Larval zebrafish behavior and functional imaging*, Sorbonne Université, Physics Department, Paris, France
- 2009 – 2012 **PostDoc**, *A biomimetic approach to human tactile perception*, École Normale Supérieure (ENS), Physics Dept., Paris, France
- 2006 – 2009 **PhD in Statistical Physics**, *Dynamics and structure close to the Glass and Jamming transitions*, Condensed Matter Physics Dept. (SPEC), CEA Saclay, France. PhD Supervisor : Olivier Dauchot
- 2005 – 2006 **Graduate research assistant**, *Collective behavior of starlings in flight*, Sapienza - Università di Roma, Physics Dept., Rome, Italy
- 2004 – 2005 **Master of Cognitive Sciences** (CogMaster), specialities: social cognition, langage, ENS / EHESS, Paris, France
- 2001 – 2004 **ESPCI Paristech** engineering school, speciality: physics

### Selected publications

1. Evolutionary divergence of locomotion in two related vertebrate species  
*G. Rajan et al.*, Cell Reports (2022), 38, 13, doi:
2. Trans-inhibition of axon terminals underlies competition in the habenulo-interpeduncular pathway  
*M. Zaupa et al.*, Current Biology (2021), doi:
3. From behavior to circuit modeling of light-seeking navigation in zebrafish larvae  
*S. Karpenko et al.*, eLife (2020), 9, e52882, doi:
4. Whole-brain functional imaging with two-photon light-sheet microscopy  
*S. Wolf et al.*, Nature Methods (2015), 12, 5, doi:
5. Interaction ruling animal collective behavior depends on topological rather than metric distance: Evidence from a field study  
*M. Ballerini et al.*, PNAS (2008), 105, 4, doi:

## Fellowships

- 2011 – 2012 PostDoc fellowship, Foundation P.-G. de Gennes, France (< 10% success rate)
- 2009 – 2011 PostDoc fellowship, ANR TRANSTACT, France
- 2006 – 2009 PhD fellowship and monitorial fellowship (< 20% success rate), MESR , France
- 2005 – 2006 Graduate research assistant fellowship, FP6-NEST 12682, INFM-CNR, Italy
- 2003 Undergraduate fellowship, Doshisha University, Kyoto, Japan (< 5% success rate)

## Patents and technological transfer

1. *Development of a semi-automatic feeder for aquatic facilities* (2017). INPI patent number WO/2019/166115, international extension PCT EP2018/080846
2. *Scientific and technical consultant for the Superdyne project* (2016)

## Teaching, formation and science outreach

1. Involvement in many scientific workshops for the general public (2009 - today). Lately with “Ateliers de la découverte” (workshops at LJP for kids from 10 to 17), and Fête de la Science.
2. Paris NeuroCourse spring school (2016-2021): class on functional lightsheet imaging for Ph.D. students and postdocs.
3. Research workshops (*Ateliers de Recherche Encadrés*), Sorbonne Université Fablab (2015 - 2017): supervision of a dozen of licence students over 3 months on experimental research projects.
4. Master Phytem, ENS Cachan (2014-2015): 32 hours/year of practical work in fluid mechanics.
5. Monitor at UPMC (2006-2009): 64 hours/year of tutorial classes in Mathematics (L1) and practical work in Physics (L1).
6. Mini-tutorials classes (*colles*) in French preparatory classes (2003-2008): 60 hours/year at the *Institut Supérieur d'Électronique de Paris* (ISEP).

## Other

1. Ultimate player and spirit captain of the French national team (2021-2023, category grand master)
2. Guest speaker and assistant for practical sessions of ultimate (2021-2025, STAPS Univ. Paris Cité)
3. Winner of the Matlab contest 2012, an international collaborative programming contest with more than 3,000 participants worldwide.
4. Winner of the Mappy challenge 2010, a programming contest on geolocalisation involving 28 French teams.