Nicolas Dray, CRCN (college B1, section 24)

Professional address: Institut Pasteur & CNRS UMR3738
Laboratory of Zebrafish neurogenetics (PI : Laure Bally-Cuif)
Dept of Developmental & Stem Cell Biology
25 rue du Dr Roux, 75015 Paris
Email : nicolas.dray@pasteur.fr

Personal information: Age: 45
Nationality: French
Family status: married, 2 children (2011, 2015)

EDUCATION

2024	HDR. Université Paris-Saclay
2008	Ph.D. in Molecular, Cellular and Developmental Biology - Université Paris-Saclay
2004	M2 in Biology - Université Pierre et Marie Curie
2002/03	L3 and M1 in Oceanography & Marine Biology - Université des Sciences Aix-Marseille
2001	L3 in Biochemistry - Université Denis Diderot

RESEARCH EXPERIENCES

>2015	CNRS Researcher CRCN, Dept. Developmental and Stem Cell Biology & CNRS UMR3738, Institut Pasteur, Paris, France (lab. Laure Bally-Cuif)
2013/15	Post-doctoral fellow, Institute NeuroPSI, Gif-sur-Yvette, France (lab. Laure Bally-Cuif)
2008-13	Post-doctoral fellow, Yale University, USA (lab. Scott Holley)
2004-08	PhD in biology, Université Paris Sud Saclay (PhD dir. G. Balavoine)
2004	Pre-doctoral research training, Université Pierre et Marie Curie (dir: Jean Deutsch)

PUBLICATIONS

> 2018	21 peer-reviewed publications (7 as first or co-first author and 2 as co-corresponding) ORCID: https://orcid.org/0000-0002-2632-6004

MENTORING, TEACHING and PUBLIC OUTREACH ACTVITIES

Supervision: 2 PhD students, 2 post-doc, 1 research engineer, 3 master students, 2 License students

Teaching:

Since 2020	Teaching assistant at the Pasteur Course 'Principles and Applications of Fluorescence Microscopy', Institut Pasteur.
Since 2016	Plenary lecture at a Master 2 course "Neurogenesis and neuronal differentiation", Biophysics Master, Sorbonne University. 3 hrs/year
2018-22	Co-organizer and instructor during a 2-weeks module on morphogenesis during the Pasteur course 'Molecular Biology of the Cell', Institut Pasteur
2018	Instructor at the 'Cajal Advanced Neuroscience Training Programme' organized by the FENS, IBRO, ERA-NET neuron, University of Bordeaux and the Champalimaud Foundation.

Public outreach (since 2019):

Since 2024	Collaboration with the School of Decorative Arts of Paris (ENSAD)
Since 2022	Collaborations with a school of design at Sèvres (creation of support for scientific outreach)
2022	Project 'art & science' in 2 high schools (with the Hauts-de-Seine dpt & the CNRS DR5)
Since 2019	Organizer of a day on ''the role of women in research'' at the Institut Pasteur (with Rev'Elles, an association working with young women in community neighborhoods)
Since 2019	Scientific discussion in a penitentiary (Maison Centrale de Poissy)
Since 2019	Participation in Declics events organized by the Cercle FSER

OTHER SCIENTIFIC OR ADMINISTRATIVE ACTIVITIES

Administrative responsibilities:

2019-24	Member of a working group on gender equality across the Institut Pasteur
Since 2021	Member of the user Committee of the Photonic platform of the Institut Pasteur
2016-20	Steering Committee of QBIO (Quantitative Biology program of the Institut Pasteur)
2018-20	Researcher representative of the Institut Pasteur "Dev. & Stem Cell Biology" Department
2016-18	Member of the Animal Research Ethical Committee (CETEA nº89)

Organization international meetings:

2017	Qbio symposium "mechanical Forces in Biology", Paris, France, June 2017 (100 participants)
2014	Neuroscience Workshop Saclay (NeWS 2014) "emerging imaging technologies in neurosciences", Gif-sur-Yvette, France, December 2014 (120 participants)

10 REPRESENTATIVES PUBLICATIONS (peer-reviewed)

*** first or co-first ‡ (co)-corresponding**

Mancini L, Guirao B, Ortica S, Labusch M, Cheysson F, Bonnet V, Phan MS, Herbert S, Mahou P, Menant E, Bedu S, Tinevez JY, Baroud C, Beaurepaire E, Bellaiche Y, Bally-Cuif L**‡,** Dray N**‡**. *Apical size and deltaA expression predict adult neural stem cell decisions along lineage progression.* **Sciences Advances 9, eadg7519 (2023).**

Dray N***‡**, Mancini L, Binshtok B, Cheysson F, Supatto W, Mahou P, Bedu S, Ortica S, Than-Trong E, Krecsmarik M, Herbert S, Masson J-B, Tinevez J-Y, Lang G, Beaurepaire E, Sprinzak D**‡**, Bally-Cuif L**‡**. *Dynamic spatiotemporal coordination of neural stem cell fate decisions occurs through local feedback in the adult vertebrate brain.* **Cell Stem Cell 228(8), 1457-1472 (2021).**

Herbert S, Valon L, Mancini L, Dray N, Caldarelli P, Gros J, Esposito E, Shorte S, Bally-Cuif L, Levayer R, Aulner N, Tinevez J-Y. *LocalZProjector and DeProj: a toolbox for local 2D projection and accurate morphometrics of large 3D microscopy images*. **BMC Biol 19(1), 1-13 (2021).**

Dray N*, Than-Trong E, Bally-Cuif L. *Neural stem cell pools homeostasis in the vertebrate adult brain: cell-autonomous decisions or community rules?* **BioEssays (review) Dec 9:e2000228 (2021).**

Than-Trong E, Kiani B, Dray N, Ortica S, Simons B, Rulands S, Alunni A, Bally-Cuif L. *Lineage hierarchies and stochasticity ensure the long-term maintenance of adult neural stem cells.* **Science Advances 6:eaaz5424 (2020).**

Guesmi K, Abdeladim L, Tozer S, Mahou P, Kumamoto T, Jurkus K, Rigaud P, Loulier K, Dray N, Georges P, Hanna M, Livet J, Supatto W, Beaurepaire E, Druon F. *Dual-color deep-tissue three-photon microscopy with a multiband infrared laser.* **Light: Science & Applications 7(1):1-9 (2018).**

Furlan G, Cuccioli V, Vuillemin N, Dirian L, Muntasell AJ, Coolen M, Dray N, Bedu S, Houart C, Beaurepaire E, Foucher I, Bally-Cuif L. *Life-Long Neurogenic Activity of Individual Neural Stem Cells and Continuous Growth Establish an Outside-In Architecture in the Teleost Pallium.* **Current Biology 27:3288-3301 (2017).**

Dray N*, Bedu S, Vuillemin N, Alunni A, Coolen M, Krecsmarik M, Supatto W, Beaurepaire E, Bally-Cuif L. *Large-scale live imaging of adult neural stem cells in their endogenous niche*. **Development 142:3592-600 (2015).**

Dray N*, Lawton A, Nandi A, Jülich D, Emonet T, Holley SA. *Cell-Fibronectin Interactions Propel Vertebrate Trunk Elongation via Tissue Mechanics.* **Current Biology 23(14), 1335-1341 (2013).**

Dray N*, Tessmar-Raible K, Le Gouar M, Vibert L, Christodoulou F, Schipany K, Guillou A, Zantke J, Snyman H, Béhague J, Vervoort M, Arendt D, Balavoine G. *Hedgehog signaling regulates segment formation in the annelid Platynereis.* **Science, 329: 339-43 (2010).**