

# CURRICULUM VITAE

Thibaut Brunet – Principal Investigator, Unit of Evolutionary Cell Biology and Evolution of Morphogenesis

Institut Pasteur, CNRS UMR3691, Université Paris-Cité, 25-28 rue du docteur Roux, 75015 Paris, France

Email: [thibaut.brunet@pasteur.fr](mailto:thibaut.brunet@pasteur.fr) / Phone: (+33) 01 76 53 53 06 / ORCID: [0000-0002-1843-1613](https://orcid.org/0000-0002-1843-1613)

URL: <https://research.pasteur.fr/en/team/evolutionary-cell-biology-and-evolution-of-morphogenesis/>

Google Scholar: <https://scholar.google.es/citations?user=5Ck0fykAAAAJ&hl=en>

Up to date on Dec 27, 2023

---

## CURRENT AND PAST ACADEMIC POSITIONS

---

- 2022-present** Principal investigator, Evolutionary Cell Biology and Evolution of Morphogenesis Unit  
Institut Pasteur, Paris, France
- 2016-2021** Postdoctoral fellow in Prof. Nicole King's laboratory  
University of California, Berkeley and the Howard Hughes Medical Institute, California, USA
- 2011-2016** PhD student (2011-2015) and "bridging" postdoctoral fellow (2015-2016)  
Prof. Detlev Arendt's laboratory  
European Molecular Biology Laboratory, Heidelberg, Germany

---

## EDUCATION

---

- 2023** Habilitation à Diriger des Recherches – Université Paris-Saclay
- 2015** PhD (Dr. Rer. Nat.) – University of Heidelberg, Germany
- 2011** Masters in Molecular and Cell Biology, Speciality in Developmental Biology – Ecole Normale Supérieure de Paris and Université Pierre et Marie Curie, Paris, France
- 2010** Agrégation de Sciences de la Vie, de la Terre et de l'Univers
- 2008** Bachelor in Biology, Ecole Normale Supérieure de Paris and Université Pierre et Marie Curie, Paris, France
- 2005-2007** Classes préparatoires BCPST (Biology, Chemistry, Physics and Earth Sciences) – Lycée Henri-IV, Paris, France

---

## GRANTS AND AWARDS

---

- 2023** ANR (Agence Nationale de la Recherche) collaborative grant, 150 k€  
"INCOMPLETE" with J.-R. Huynh (Collège de France, Paris, France) and Arnaud Echard (Institut Pasteur, Paris, France)
- 2023** Vallee Foundation Scholar Award, 310 k€
- 2022** Young Researcher Award, French Society for Cell Biology, 5 k€
- 2022** European Research Council (ERC) Starting Grant "EvoMorphoCell", 1.5 M€
- 2021** Institut Pasteur G5 start-up package
- 2017** Human Frontier Science Program (HFSP) long-term postdoctoral fellowship
- 2016** European Molecular Biology Organization (EMBO) long-term postdoctoral fellowship
- 2011** European Molecular Biology Laboratory (EMBL) pre-doctoral fellowship
- 2007** "Allocation élève normalien", Ministère de l'Éducation Nationale, France (ranked 1<sup>st</sup> out of 872 candidates)

---

## SUPERVISION OF PHD STUDENTS AND POSTDOCTORAL FELLOWS

---

<b>2023-present</b>	Uzuki Horo, PhD student, Université Paris-Cité Funded by a competitive Pasteur Paris Université (PPU) fellowship
<b>2023-present</b>	Diede De Haan, EMBO long-term postdoctoral fellow
<b>2023-present</b>	Eva Pillai, EIPOD postdoctoral fellow (co-supervised with Alba Diz-Muñoz and Detlev Arendt, EMBL Heidelberg, Germany)
<b>2022-present</b>	Maite Freire Delgado, PhD student, Université Paris-Cité Funded by a competitive BioSorbonne Paris Cité (BioSPC) PhD fellowship
<b>2022-present</b>	Núria Ros-Rocher, Marie Skłodowska-Curie postdoctoral fellow
<b>2022-present</b>	4 Masters 1 interns/1 Masters 2 intern/1 Erasmus student (all successfully graduated)

---

## INVITED PRESENTATIONS

---

**2024: Invited seminars:** Institut de Génomique Fonctionnelle de Lyon, Institut de Génétique et Développement de Rennes, Institut de Biologie-Valrose (Nice)

**Invited conference presentations:** 4D Cellular Physiology Symposium (Janelia Farm), Journées André Picard (Observatoire Océanologique de Banyuls-sur-Mer), EuroEvoDevo Conference (Helsinki), Vallee Laureate Meeting (Lago Maggiore)

**2023: Invited seminars:** University of Basel, Queen Mary University of London, Institut de Biologie du Développement de Marseille

**Invited conference presentations:** American Society for Cell Biology/EMBO meeting (Boston), European Developmental Biology Congress (Paris), EMBO Workshop on Cell Polarity and Membrane Dynamics

**2022: Invited seminars:** Michael Sars Centre, EMBL Barcelona, Institut Cochin, Virtual Gastrulation Seminar Series, Institut Jacques Monod

**Invited conference presentations:** 10<sup>th</sup> EMTA International Association Conference (TEMTIA, Paris), Cell La Vie 2 (Paris), Royal Physiographic Society Jubilee Symposium “Cancer, multicellularity and complex systems” (Lund, Sweden), West Pacific Marine Biology Network symposium (virtual), Paris Evolution Day, Mechanobiology in evolution (Heidelberg), Jacques Monod Conference “Metazoan origins” (Roscoff), Collège de France Symposium on Collective and individual cell motility (Paris), Journées Boris Ephrussi (PhD symposium of Sorbonne Universités, keynote lecture)

**2021: Invited seminars:** Institut Curie

**Invited conference presentations:** Paris Cytoskeleton Day, Systems biology of the brain Workshop (University of Freiburg, Switzerland)

**2020: Invited seminars:** Instituto Gulbenkian de Ciencia

**Invited conference presentations:** Self-organization in biological systems (Fondation des Treilles)

**2019: Invited conference presentations:** VII European Congress of Protistology – ISOP meeting, International Choanoflagellate & Friends Workshop

---

## TEACHING (GUEST LECTURES IN UNIVERSITY CLASSES)

---

2024	Evolution of multicellularity Masters 1 class, Université Paris-Cité, Paris, France
2022-2023	Introduction to evolutionary cell biology (3 h/y) and Evolution of multicellularity (3 h/y) Masters 1 class, Ecole Normale Supérieure de Paris, France
2019	Introduction to microbiology (2 h/y) Freshman class, University of California, Berkeley, USA
2012-2016	Introduction to evolutionary biology (7 h/y) Université Paris-XI, Orsay, France
2008-2011	Oral examination (“colles”, 12 h/y) “Classes préparatoires” BCPST, Lycée Henri-IV, Paris, France

---

## PUBLICATIONS

---

Major publications highlighted in grey.

\* equal contribution

1.	<b>Brunet, T.</b> (2023) Cell contractility in early animal evolution. <i>Current Biology</i> <b>33</b> : R966-R985 doi: <a href="https://doi.org/10.1016/j.cub.2023.07.054">10.1016/j.cub.2023.07.054</a>
2.	Ros-Rocher, N. and <b>Brunet, T.</b> (2023) What is like to be a choanoflagellate? Perception, processing and behavior in the closest living relatives of animals. <i>Animal Cognition</i> doi: <a href="https://doi.org/10.1007/s10071-023-01776-z">10.1007/s10071-023-01776-z</a>
3.	Booth, D. S. and <b>Brunet, T.</b> (2023) Cell polarity in the protist-to-animal transition. <i>Current Topics in Developmental Biology</i> <b>154</b> : 1-36 doi: <a href="https://doi.org/10.1016/bs.ctdb.2023.03.001">10.1016/bs.ctdb.2023.03.001</a>
4.	Fung, L., Konkol, A., Ishikawa, B., Larson, B. T., <b>Brunet, T.</b> and Goldstein, R. (2023) Swimming, feeding and inversion in multicellular choanoflagellate sheets. <i>Physical Review Letters</i> <b>131</b> : 168401 doi: <a href="https://doi.org/10.1103/PhysRevLett.131.168401">10.1103/PhysRevLett.131.168401</a>
5.	Reyes-Rivera, J., Wu, Y., Guthrie, B. G. H., Marletta, M., King, N., and <b>Brunet, T.</b> (2022) Nitric oxide signaling controls collective contractions in a colonial choanoflagellate. <i>Current Biology</i> <b>32</b> (11): 2539-2547.e5 doi: <a href="https://doi.org/10.1016/j.cub.2022.04.017">10.1016/j.cub.2022.04.017</a>
6.	Chaigne, A., and <b>Brunet, T.</b> (2022) Incomplete abscission and cytoplasmic bridges in the evolution of eukaryotic multicellularity. <i>Current Biology</i> <b>32</b> (8): R385-R397 doi: <a href="https://doi.org/10.1016/j.cub.2022.03.021">10.1016/j.cub.2022.03.021</a>
7.	<b>Brunet, T.</b> , and King, N. (2021) The single-celled ancestors of animals: a history of hypotheses. (invited book chapter in <i>The Evolution of Multicellularity</i> , edited by Matthew Herron, William Ratcliff and Peter Conlin, CRC Press, 2021) – doi: <a href="https://doi.org/10.20944/preprints202011.0302.v1">10.20944/preprints202011.0302.v1</a>
8.	<b>Brunet, T.</b> , Albert, M., Roman, W., Spitzer, D. C., and King, N. (2020) A flagellate-to-amoeboid switch in the closest living relatives of animals. <i>eLife</i> <b>2021</b> ;10:e61037 doi: <a href="https://doi.org/10.7554/eLife.61037">10.7554/eLife.61037</a>
9.	Hallou, A., and <b>Brunet, T.</b> (2020) On growth and force: mechanical forces in development. <i>Development</i> <b>147</b> : dev187302 doi: <a href="https://doi.org/10.1242/dev.187302">10.1242/dev.187302</a>
10.	<b>Brunet, T.*</b> , Larson, B. T.*, Linden, T. A.*, Vermeij, M. J. A., McDonald, K., and King, N. (2019) Light-regulated collective contractility in a multicellular choanoflagellate. <i>Science</i> <b>366</b> , 326-334 doi: <a href="https://doi.org/10.1126/science.aay2346">10.1126/science.aay2346</a>
11.	Nielsen, C.*, <b>Brunet, T.*</b> , and Arendt, D*. (2018) Evolution of the bilaterian mouth and anus. <i>Nat. Ecol. Evol.</i> <b>2</b> : 1358-1376 doi: <a href="https://doi.org/10.1038/s41559-018-0641-0">10.1038/s41559-018-0641-0</a>
12.	Achim, K., Eling, N., Martinez Vergara, H., Bertucci, P. Y., Musser, J., Vopalensky, P., <b>Brunet, T.</b> , Collier, P., Benes, V., Marioni, J. C., and Arendt, D. (2018) Whole-body single-cell

sequencing reveals transcriptional domains in the annelid larval body. <i>Mol. Biol. Evol.</i> <b>35</b> , 1047-1062 doi: <a href="https://doi.org/10.1093/molbev/msx336">10.1093/molbev/msx336</a>
13. <b>Brunet, T.</b> , and King, N. (2017) The origin of animal multicellularity and cell differentiation. <i>Dev. Cell</i> <b>43</b> , 124-140 doi: <a href="https://doi.org/10.1016/j.devcel.2017.09.016">10.1016/j.devcel.2017.09.016</a>
14. <b>Brunet, T.</b> , Fischer, A.H., Steinmetz, P.R., Lauri, A., Bertucci, P., and Arendt, D. (2016). The evolutionary origin of bilaterian smooth and striated myocytes. <i>eLife</i> <b>5</b> , e19607 doi: <a href="https://doi.org/10.7554/eLife.19607">10.7554/eLife.19607</a>
15. <b>Brunet, T.</b> , and Arendt, D. (2016). Animal Evolution: The Hard Problem of Cartilage Origins. <i>Curr. Biol.</i> <b>26</b> , R685–R688 doi: <a href="https://doi.org/10.1016/j.cub.2016.05.062">10.1016/j.cub.2016.05.062</a>
16. <b>Brunet, T.</b> , and Arendt, D. (2016). From damage response to action potentials: early evolution of neural and contractile modules in stem eukaryotes. <i>Philos. Trans. R. Soc. Lond. B. Biol. Sci.</i> <b>371</b> , 20150043 doi: <a href="https://doi.org/10.1098/rstb.2015.0043">10.1098/rstb.2015.0043</a>
17. Arendt, D., Benito-Gutierrez, E., <b>Brunet, T.</b> , and Marlow, H. (2015). Gastric pouches and the mucociliary sole: setting the stage for nervous system evolution. <i>Philos. Trans. R. Soc. Lond. B. Biol. Sci.</i> <b>370</b> , 20150286 doi: <a href="https://doi.org/10.1098/rstb.2015.0286">10.1098/rstb.2015.0286</a>
18. Fernandez-Sanchez, M.-E., <b>Brunet, T.</b> , Röper, J.-C., and Farge, E. (2015). Mechanotransduction's Impact on Animal Development, Evolution, and Tumorigenesis. <i>Annu. Rev. Cell Dev. Biol.</i> <b>31</b> , 373–397 doi: <a href="https://doi.org/10.1146/annurev-cellbio-102314-112441">10.1146/annurev-cellbio-102314-112441</a>
19. <b>Brunet, T.</b> , Lauri, A., and Arendt, D. (2015). Did the notochord evolve from an ancient axial muscle? The axochord hypothesis. <i>BioEssays</i> <b>37</b> , 836–850 doi: <a href="https://doi.org/10.1002/bies.201500027">10.1002/bies.201500027</a>
20. Lauri, A.* , <b>Brunet, T.*</b> , Handberg-Thorsager, M., Fischer, A.H.L., Simakov, O., Steinmetz, P.R.H., Tomer, R., Keller, P.J., and Arendt, D. (2014). Development of the annelid axochord: insights into notochord evolution. <i>Science</i> <b>345</b> , 1365–1368 doi: <a href="https://doi.org/10.1126/science.1253396">10.1126/science.1253396</a>
21. <b>Brunet, T.*</b> , Bouclet, A.* , Ahmadi, P., Mitrossilis, D., Driquez, B., Brunet, A.-C., Henry, L., Serman, F., Béalle, G., Ménager, C., et al. (2013). Evolutionary conservation of early mesoderm specification by mechanotransduction in Bilateria. <i>Nat. Comm.</i> <b>4</b> , 2821 doi: 10.1038/ncomms3821
22. Shimeld, S.M., Boyle, M.J., <b>Brunet, T.</b> , Luke, G.N., and Seaver, E.C. (2010). Clustered Fox genes in lophotrochozoans and the evolution of the bilaterian Fox gene cluster. <i>Dev. Biol.</i> <b>340</b> , 234–248 doi: <a href="https://doi.org/10.1016/j.ydbio.2010.01.015">10.1016/j.ydbio.2010.01.015</a>