

CURRICULUM VITAE

Hervé Turlier

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Education:

Ph.D.	Theoretical biophysics , Sorbonne Université (FR) <i>With unanimous jury congratulations.</i>	Dec 2013
M.S.	Liquid and soft matter physics , Ecole Polytechnique (FR) <i>Obtained with highest honours.</i>	Aug 2010
B.S.(Eng)	Physics and mechanics , Ecole Polytechnique (FR) <i>Obtained with highest honours.</i>	Aug 2009

Scientific Career:

CNRS researcher	Oct 2020 - present
Research group leader Center for Interdisciplinary Research in Biology, Collège de France (Paris, FR).	Oct 2017 - present
Post-doctoral fellow <i>Physical & numerical modelling of the early mouse embryo morphogenesis.</i> Dr. François Nédélec's lab – European Molecular Biology Laboratory (Heidelberg, DE).	Feb 2014 - Oct 2017
Graduate Researcher (Ph.D. Thesis) <i>Shaping the cell: theories of active membranes.</i> Ph.D. advisors: Prof. Jean-François Joanny and Dr. Jacques Prost. Physico-Chimie Curie Laboratory, Institut Curie (Paris, FR).	Sep 2010 - Jan 2014
Undergraduate Researcher (B.S. Thesis) <i>Physics of granular jet impacts.</i> Prof. Sidney Nagel's lab – James-Franck Institute – University of Chicago (Chicago, IL, USA).	Apr 2009 - Sep 2009

Research Interests:

- Physical modeling of cell, embryo and tissue morphogenesis
- Modeling of cell and tissue mechanics; mechanobiology
- 3D simulations, discrete geometry and finite-element methods
- Multiscale, multiphysics modeling
- Mechanical inference and inverse problems in biology
- Machine-learning for biology

Honors and Awards:

• Laureate of a Human Frontier of Science Program (HFSP) research grant	Mar 2025
• Claude Paoletti Prize - awarded by the CNRS	Nov 2021
• Laureate of an ERC Starting grant	Jan 2021
• Joachim Herz Foundation fellowship for interdisciplinary science	Oct 2015
• Laureate of a Marie Skłodowska-Curie postdoctoral Fellowship	May 2015
• Young Researcher Prize of the Bettencourt-Schueller Foundation	Apr 2015
• Biophysical Journal Paper of the Year Award 2014	Feb 2015

Research Grants:

- Human Frontier of Science Program - k\$300 Sep 2025 - Aug 2028
Evolutionary biophysics of spiralian asymmetric divisions
- Inserm PEPR program SaFe (women's health, couples's health) - 200k€ Sep 2025 - Aug 2028
- Transatlantic partnership (Albertine Fdn) - with K. Cavanaugh (UCSF) Oct 2024 - Sep 2026
- 4-year ANR grant - with C. Baroud - 210k€ for my team Jan 2024 - Dec 2027
- Inserm impulsion program *MecaCell3D* - 115k€ for my team. Mar 2023 - Feb 2025
- 3-year ANR grant - with A. McDougall - 106k€ for my team Mar 2023 - Feb 2025
- 3-year grant from ITMO cancer - with V. Lallemand - 183k€ for my team Dec 2022 - Nov 2025
- 2-year grant from Labex Memolife - with V. Lallemand - k€50 for my team Sep 2021 - Aug 2023
- **ERC Starting grant - Project DeepEmbryo** - k€1,958 Jan 2021 - Dec 2025
Reverse-engineering the development of embryos with physics-informed machine learning
- 2-year grant from the Paris Convergence Institute Qlife - k€75 for my team Oct 2020 - Sep 2022
Project in collaboration with Prof. Orion Weiner at the Quantitative Biology Institute, UCSF
- Laureate of the call "Discovery" from the EMBRC-France Sep 2020 - Aug 2021
- 2-year grant from the Paris Convergence Qlife Institute - k€100. Oct 2018 - Sep 2022
Project on human embryo mechanics in collaboration with J-L. Maître & C. Patrat (MD)
- 3-year grant from the Bettencourt-Schueller Foundation – k€300 Jan 2018 - Dec 2020
- **ATIP-Avenir Program** – k€180 Jan 2018 - Dec 2020

Selection of three major recent publications (*corresponding author)

(1) S. Ichbiah, F. Delbary, A. McDougall, R. Dumollard, H. Turlier* (2023). Embryo mechanics cartography: inference of 3D force atlases from fluorescence microscopy. *Nature Methods*, 20, 1989-1999. [Citations: 27](#)

Highlighted by a *News & Views* article from Dr F. Graner ([doi:10.1038/s41592-023-02102-8](https://doi.org/10.1038/s41592-023-02102-8)).

We have developed a 3D method to infer tensions at cellular interfaces in tissues and embryos directly from fluorescence microscopy images. This method enables the creation of true mechanical maps of a tissue based solely on its microscopy imaging, which could be combined with genetic expression maps to infer the mechano-biochemical couplings involved in development. This work has led to the creation of foambryo, an open-source software for 3D tension inference that received strong interest within the scientific community.

(2) H. De Belly, S. Yan, H.B. da Rocha, S. Ichbiah, J.P. Town, Sager, P.J., H. Turlier*, C. Bustamante* & O.D. Weiner* (2023). Cell protrusions and contractions generate long-range membrane tension propagation. *Cell*, 186, 3049-3061. [Citations: 69](#)

Highlighted by *Preview* article by Prof. K. Keren ([doi:10.1016/j.cell.2023.05.033](https://doi.org/10.1016/j.cell.2023.05.033))

We have developed a mechanical model to describe the propagation of tension along a cellular membrane attached to the underlying cortical layer. This model predicts that tension diffuses along the surface, governed by the density of attachment to the cortex. It explains why membrane tension can be transmitted through an intrinsic deformation of the cortex to the opposite pole of the cell, enabling mechanical signal transmission—for instance, during cell migration. Conversely, it also accounts for the rapid attenuation of tension in response to extrinsic forces, such as membrane tube extrusion. This simple yet effective model resolves a long-standing scientific debate within the community. Additionally, we have introduced an innovative method based on optimal transport to infer the velocity profile of cortical flows on the cell surface from videos capturing intensity variations along the membrane.

(3) J.G. Dumortier, M. Le Verge-Serandour, A.F. Tortorelli, A. Mielke, L. de Plater, H. Turlier*, J.L. Maître*. (2019). Hydraulic fracturing and active coarsening position the lumen of the mouse blastocyst. *Science*, 365(6452), 465-468. [Citations: 212](#)

Highlighted by a *News & Views* article from Profs. M. Arroyo et X. Trepat ([doi:10.1126/science.aay2860](https://doi.org/10.1126/science.aay2860)).

We have uncovered the physical mechanism behind the formation of the blastocoel cavity in the preimplantation mouse embryo. A myriad of microcavities (also known as lumens) emerge through hydraulic fracturing of cell contacts and subsequently mature via a process similar to Ostwald ripening, but driven by hydraulic flows. Our model explains how the radial symmetry breaking in mammalian blastocyst formation arises from an asymmetry in surface tensions between two cell types: the trophectoderm and inner cell mass.

Complete list of publications (*corresponding author)

22. A. Pasqui, S. Madhavi, B. Vianay, A. Colin, A. McDougall, R. Dumollard, Y. A. Miroshnikova, E. Labrune, **H. Turlier*** (2025). Self-supervised Z-Slice Augmentation for 3D Bio-Imaging via Knowledge Distillation. [arXiv:2303.10440v1](#) Submitted
21. K. Yamamoto, S. Ichbiah, J. Pinto, F. Delbary, N. Goehring, **H. Turlier*** & G. Charras* (2025). Dissecting the subcellular forces sculpting early *C. elegans* embryos. **Developmental Cell** (accepted) [bioRxiv:2023.03.07.531437](#) Citations: 8
20. H. De Belly, A. Fernandez-Gallen, E. Strickland, D.C. Estrada, P.J. Zager, J.K. Burkhardt, **H. Turlier***, O. Weiner*. (2024). Long range mutual activation establishes Rho and Rac polarity during cell migration. In revision. [bioRxiv:2024.10.01.616161](#).
19. J. Firmin, N. Ecker, D. Rivet Danon, V. Barraud Lange, **H. Turlier**, C. Patrat, J-L. Maître. (2024). Mechanics of human embryo compaction. **Nature** 629, 646-651. Citations: 28
18. A. Rosfelter, G. De Labbey, J. Chenevert, S. Schaub, R. Dumollard, Z. Machaty, L. Besnardeau, C. Hebras, **H. Turlier***, D. Burgess* & A. McDougall* (2024). Reduction of cortical at mitotic entry facilitates aster centration. **Journal of Cell Science** 137(7). Citations: 1
17. E. Nikalayevich, G. Letort, G. de Labbey, E. Todisco, A. Shihabi, **H. Turlier**, R. Voituriez, M. Yahiatene, X. Pollet-Villard, M. Innocenti, M. Schuh, M-E. Terret, M-H. Verlhac (2024). Aberrant cortex contractions impact mammalian oocyte quality. **Developmental Cell** 59(7), 841-852. Citations: 9
16. S. Ichbiah, F. Delbary, **H. Turlier*** (2023). Differentiable rendering for 3D fluorescence microscopy. [arXiv:2303.10440v1](#). Resubmitted to International Conference on Computer Vision Citations: 3
15. S. Ichbiah, F. Delbary, A. McDougall, R. Dumollard, **H. Turlier*** (2023). Embryo mechanics cartography: inference of 3D force atlases from fluorescence microscopy. **Nature Methods**, 20, 1989-1999. Citations: 27
 ➤ Highlighted by a News & Views article from Dr F. Graner (doi:10.1038/s41592-023-02102-8).
14. H. De Belly, S. Yan, H.B. da Rocha, S. Ichbiah, J.P. Town, Sager, P.J., **H. Turlier***, C. Bustamante* & O.D. Weiner* (2023). Cell protrusions and contractions generate long-range membrane tension propagation. **Cell**, 186, 3049-3061. Citations: 53
 ➤ Highlighted by a Preview article from Prof. K. Keren (doi:10.1016/j.cell.2023.05.033).
13. H. Borja da Rocha, J. Bleyer & **H. Turlier***. (2022). A viscous active shell theory of the cell cortex, **Journal of the Mechanics and Physics of Solids**, 164, 104876. Citations: 24 (arXiv:2110.12089)
12. M. Le-Verge-Serandour & **H. Turlier***. (2021). Blastocoel morphogenesis: a biophysics perspective, **Seminars in Cell & Developmental Biology** 130, 12-23. Citations: 12 (arXiv:2106.14509)
11. M. Le-Verge-Serandour & **H. Turlier*** (2021). A hydro-osmotic coarsening theory of biological cavity formation. **PLoS Computational Biology** 17(9): e1009333. Citations: 30
10. J.G. Dumortier, M. Le Verge-Serandour, A.F. Tortorelli, A. Mielke, L. de Plater, **H. Turlier***, & J.L. Maître*. (2019). Hydraulic fracturing and active coarsening position the lumen of the mouse blastocyst. **Science**, 365(6452), 465-468. Citations: 212
 ➤ Highlighted by a Perspective article from Prof. X. Trepat & M. Arroyo (doi:10.1126/science.aay2860).
9. **H. Turlier***, T. Betz* (2019). Unveiling the active nature of living-membrane fluctuations and mechanics. **Annual Reviews of Condensed Matter Physics** 10: 213-32. Citations: 57
8. **H. Turlier***, T. Betz* (2018). Fluctuations in active membranes, in *Physics of Biological Membranes*, Editors : P. Bassereau and P. Sens, Springer, pp. 581-619. (arXiv:1801.00176). Citations: 18
7. J-L. Maître, **H. Turlier**, R. Illukkumbura, B. Eismann, R. Niwayama, F. Nédélec & T. Hiiragi (2016). Asymmetric division of contractile domains couples cell positioning and specification. **Nature** 536: 344-348. Citations: 388
 ➤ Highlighted by a News & Views article from Prof. A-K Hadjantonakis (doi:10.1038/nature18920).
6. **H. Turlier**, D.A. Fedosov, B. Audoly, T. Auth, N.S. Gov, C. Sykes, J-F. Joanny, G. Gompfer & T. Betz (2016). Equilibrium physics breakdown reveals the active nature of red blood cell flickering. **Nature Physics** 12: 513-519. Citations: 333
 ➤ Highlighted by a News & Views article from Prof. A.S. Smith (doi:10.1038/nphys3703)
 ➤ Highlighted by an article from Prof. K. Kroy in the German physical society journal 04/2016 (p.20)
5. **H. Turlier**, J.-L. Maître (2015). Mechanics of tissue compaction. **Seminars in Cell & Developmental Biology** 47: 110-117. Citations: 56

4. J-L. Maître, R. Niwayama, **H. Turlier**, F. Nédélec, & T. Hiragi, (2015). Pulsatile cell-autonomous contractility drives compaction in the mouse embryo. *Nature Cell Biology* **17**(7): 849-855. Citations: 360
3. P. Bun, J. Liu, **H. Turlier**, Z. Liu, K. Uriot, J-F. Joanny & M. Coppey-Moisan (2014). Mechanical Checkpoint For Persistent Cell Polarization in Adhesion-Naïve Fibroblasts. *Biophysical Journal* **107**(2): 324-335. Citations: 17
 > Highlighted by a New & Notable article from Dr. A. Das (doi:10.1016/j.bpj.2014.06.008).
2. **H. Turlier***, B. Audoly, J. Prost, J-F. Joanny, Furrow Constriction in Animal Cell Cytokinesis. *Biophysical Journal* **106**(1): 114-123 (2014). Citations: 195
 > Highlighted by a New & Notable article from Prof. S. Ramaswamy (doi:10.1016/j.bpj.2013.11.3671).
 > Best Biophysical Journal paper of the year 2014.
1. J. Ellowitz, **H. Turlier**, N. Guttenberg, W. Zhang, S.R. Nagel, Still water: dead zones and collimated ejecta from the impact of granular jets. *Physical Review Letters* **111**: 168001 (2013). Citations: 21

Invited talks in international conferences:

26. CIRM Workshop: (Blind) Inverse problems in imaging, Marseille, FR - to be held in Sep 2025.
25. Coarse-graining Tissue Mechanics, Ljubljana, Slovenia - to be held in Sep 2025.
24. Mathematics and Mechanics of Biological Tissues, Padova, Italy - to be held in Jun 2025.
23. The 85th Fujihara Seminar: The Mechanics of Life Across Scales, Awaji, Hyōgo, JP - May 2025.
22. Catalan Society of Biology annual meeting, Barcelona, ES - Feb 2025.
21. American Society for Cell Biology annual meeting, San Diego, CA, USA - Dec 2024.
20. Physics of the Early Embryonic Cell Divisions workshop, Sussex, UK - Nov 2024.
19. BIRS-IMAG workshop From Evolution to Bioengineering of Biological Patterning Mechanics, University of Granada, ES - Jun 2024.
18. QBI-QLife Symposium on Artificial Intelligence Across Biological Scales, UCSF, CA, USA - Dec 2023.
17. Dynamics of Self-Organisation in Animal and Plant - Kavli Institute for Theoretical Physics, University of California Santa Barbara, USA - Jul 2023.
16. Artificial Intelligence in Biology & Health - Institut Pasteur, Paris, FR - Jul 2023.
15. Workshop MePhy day - "Mechanics and physics of biological surfaces" - Paris, FR - Mar 2023.
14. Aspen Center for Physics - Aspen, CO USA - Jun 2022.
13. Workshop "Artificial cell" - Fondation des Treilles, Tourtour, FR - Dec 2021.
12. MiFoBio (Microscopy for Biology), mechanobiology session – Hyères, FR – Nov 2021.
11. Cell & Tissue Hydraulics Mini-Symposium – MBI Singapore, SGP – Oct 2021.
10. Journée François Jacob, Collège de France – Paris, FR – Oct 2021.
9. Annual IBSAM colloquium, **keynote speaker**, University of Brest – Brest, FR – Jun 2021.
8. Virtual meeting 'Mechanics of developmental biology' – Paris, FR – Jun 2020.
7. Symposium 'Physics of living systems across scales' – Paris, FR – Mar 2020. (Cancelled Covid-19)
6. Recent Advances in Mechanics and Mathematics of Materials Workshop – Rome, IT – Nov 2019.
5. Mechanics of Cell Aggregates – International workshop – Torino, IT – Sep 2019.
4. Workshop "Contribution of cell mechanics to cell fate determination and tissue integrity" - Fondation des Treilles, Tourtour, FR - Oct 2018.
3. American Physical Society March meeting 2015 – San Antonio, TX, USA – Mar 2015.
2. 59th Biophysical Society Meeting, Awards Symposium – Baltimore, MD, USA – Feb 2015.
1. 4th COMBINE meeting (COmputational Modeling in Biology Network) – Paris, FR – Sep 2013.

Selected talks in international conferences:

- 9th European Cell Mechanics Meeting (CellMech) - Marseille, FR - Sep 2023.
- GDR IMABIO 20 years colloquium - Institut de physique du globe, Paris, FR - Jul 2023.
- New Microscopies in Cell Biology - Institut Jacques Monod, FR - Dec 2022
- 19th International Congress of Developmental Biology – Algarve, PT – Oct 2022.
- GDR CellTiss (Physique de la cellule au tissu) – Hyères, FR – Nov 2019.
- 8th World Congress of Biomechanics – Dublin, IR – Jul 2018.
- Growth, Form & Self-Organization in Living Systems – Dundee, UK – Oct 2017.
- Dynamics of Living Systems – EMBO Workshop – Cargèse, FR – Sep 2017.
- 7th European Cell Mechanics Meeting (CellMech)– Windermere, UK – Jul 2017
- CompSysBio Advanced Lecture Course on Systems Biology – Aussois, FR – Mar 2017.
- Biological Physics Circle Meeting – Institut Pierre-Gilles de Gennes, Paris, FR – May 2016.
- International Workshop on numerical methods and applications in fluid-structure interactions – Laboratoire Jean Kuntzman – Grenoble, FR – Nov 2014.

- BIOMS Workshop “Modeling cellular processes” – Université d’Heidelberg, DE – Oct 2014.
- German Physical Society Spring Meeting – Université Technologique de Dresde, DE – Apr 2014.
- Symposium “Physics of the embryo” – Université de Göttingen, DE – Oct 2013.
- 6th Workshop “Nano and Micro Environments for Cell Biology” – Grenoble, FR – May 2013.
- Biological Physics Circle Meeting – Institut Curie, Paris, FR – May 2012.

Invited talks in scientific seminars:

49. University of Osaka - Osaka, JP - to be held June 2025.
48. University of Tokyo - Tokyo, JP - to be held May 2025.
47. EMBL Barcelona - CRG Barcelona Collaboratorium - Barcelona, ES - to be held Mar 2025.
46. Institute of Science and Technology - Vienna, AT - to be held Feb 2025.
45. Center for Integrative Biology (CBI) - Toulouse, FR - Jan 2025.
44. LAAS-CNRS - Toulouse, FR - Oct 2024.
43. Institut Pasteur Quantitative biology seminar - Paris, FR - Apr 2024.
42. Cambridge Morphogenesis Webinar Series - Online - Jan 2024.
41. Physics meets biology, Rice University in France - Paris, France - Oct 2023.
40. MecaCell3D impulsion program kickoff meeting - Marseille, France - Sep 2023.
39. Biological physics & Physical biology seminar (online) - USA - Jun 2023.
38. Università Di Pavia - Paris, FR - Jun 2023.
37. Qlife annual meeting - Paris, FR - Mar 2023.
36. Polytechnic University of Catalunya (UPC) - Barcelona, ES - Feb 2023.
35. EMBRC Talks - online, FR - May 2022.
34. Ecole Normale Supérieure biophysics seminar - Ecole Normale Supérieure, FR - Apr 2022.
33. Laboratory Jean-Perrin - Sorbonne Université, FR - Mar 2022.
32. Theory group seminar - Institut Curie, FR - Mar 2022.
31. Labex DEEP seminar (virtual) - Institut Curie, FR - Jul 2021.
30. Theory of Living Systems webinar - University of New South Wales-EMBL Australia, AUS - Jun 2021.
29. Theoretical Biophysics seminar (virtual) - University of Erlangen (FAU), DE - May 2021.
28. Solid Mechanics laboratory seminar (virtual) - Ecole Polytechnique, FR - May 2021.
27. Theory of Living Matter seminar (virtual) - University of Cambridge, UK - May 2021.
26. Groupement de recherche (GDR) Biology of reproduction (virtual) - Paris, FR - Apr 2021.
25. Physics of Living Matter seminar (virtual) - Jülich Forschungszentrum, DE - Feb 2021.
24. Bioinformatics seminar (virtual) - Ecole Normale Supérieure, FR - Feb 2021.
23. CIRB seminar (virtual) - Collège de France, FR - Feb 2021.
22. University Paris-Sud – Laboratoire FAST – Orsay, FR – Feb 2020.
21. Institut Curie – Physico-chimie Curie – Paris, FR – Dec 2019.
20. **Keynote speaker** – *Forces in Biomolecular System (SFB)* retreat – Munich, DE – Jul 2019.
19. University of Münster – ‘*Pioneers in Cell Dynamics & Imaging*’ series – Münster, DE – Jun 2019.
18. Institut Pasteur – *MorphoClub seminar* – Paris, FR – Jan 2019.
17. Scientific retreat on ascidian early development – Montpellier, FR – Oct 2018.
16. Laboratoire de Biologie du Développement de Villefranche-sur-Mer, FR – Oct 2018.
15. Laboratoire Matière et Systèmes Complexes (MSC) – Paris, FR – Oct 2018.
14. University of Warwick – *MathSys seminar* – Warwick, UK – Jun 2018.
13. Technical University of Munich (TUM) – *SFB Seminar* – Munich, DE – Jun 2018.
12. Centre de recherche en Biologie Moléculaire de Montpellier (CRBM) – Montpellier, FR – Jun 2018.
11. University of California San Diego (UCSD) - San Diego, Californie, USA – Dec 2017.
10. California State University Fullerton (CSUF) - Fullerton, Californie, USA – Dec 2017.
9. CIRB, Collège de France – *International call for group leaders* – Paris, FR – Feb 2017.
8. Laboratoire d’Hydrodynamique de l’X - Ecole Polytechnique, Palaiseau, FR – Dec 2016.
7. Institut de Biologie du Développement de Marseille Luminy (IBDM) – Marseille, FR – Nov 2016.
6. Institut de Génétique et de Biologie Moléculaire et Cellulaire (IGBMC) – *International call for group leaders* – Strasbourg, FR – Sep 2016.
5. University of Cambridge – Department of Applied Mathematics and Theoretical Physics (DAMTP) – Cambridge, UK – Jul 2016.
4. Scientific retreat of MBI Singapore and Institut Curie – Aussois, FR – Jul 2016.
3. INRIA Rocquencourt – Modeling & scientific computing seminar – Rocquencourt, FR – Apr 2015.
2. University of Heidelberg – Institute for Theoretical Physics seminar – Heidelberg DE – May 2014.
1. Jülich Forschung’s Zentrum – Institute of Complex Systems – Jülich, DE – Dec 2012.

Scientific supervision:**Current**

- **Fabrice Delbary** - Permanent researcher in mathematics (inverse problems) May 2024 - ...
- **Matthieu Perez** - Software engineer Mar 2021 - ...
- **Nicolas Ecker** - Post-doctoral fellow in biophysics Apr 2021 - ...
- **Alessandro Pasqui** - PhD in physics at PSL University Sep 2021 - ...
- **Eric Miranda Neiva** - Marie Skłodowska-Curie post-doctoral fellow in biomechanics Nov 2021 - ...
- **Daniel Gonzalez Suarez** - PhD in developmental biology at Sorbonne Université Oct 2022 - ...
(co-supervision with A. McDougall)
- **Salvish Goomanee** - Research engineer (artificial intelligence) Nov 2022 - ...
- **Andreu Fernández Gallén** - Marie Skłodowska-Curie post-doctoral fellow in biophysics Jan 2023 - ...
- **Jim Catacora** - Post-doctoral fellow in reinforcement learning for morphogenesis. Apr 2024 - ...
- **Martina Gatti** - Master thesis student in finite elements for cell morphogenesis Apr 2024 - ...
- **Sajjad Mahdavi** - Research engineer (artificial intelligence) May 2024 - ...
- **Maria-Cristina Brad** - Research engineer (microscopy, computer vision) Oct 2024 - ...
- **Anshuman Sinha** - PhD student (inverse physical problems, computer vision) Nov 2024 - ...

Past

- **Ghislain de Labbey** - PhD in physics at PSL University Sep 2021 - Sep 2024
- **Sacha Ichbiah** - PhD in physics at PSL University Sep 2020 - Sep 2023
- **Gilberto Nakamura** - Post-doctoral fellow in physics May 2022 - Jun 2023
- **Anne Rosfelter** - PhD in developmental biology at Sorbonne Université Sep 2019 - Feb 2023
(co-supervision with A. McDougall)
- **Joana Leite** - PhD in bioengineering at Porto University, PT Oct 2017 - Dec 2022
(co-supervision with A. Carvalho)
- **Hudson Borja da Rocha** - Post-doctoral fellow in biomechanics Sep 2018 - Oct 2022
- **Mathieu Le-Verge-Serandour** - PhD in physics at PSL University Sep 2018 - Dec 2021
- **Fabrice Delbary** - Post-doctoral fellow in applied mathematics Feb 2018 - Oct 2021
- **Mathieu Le-Verge-Serandour** - Master 2 internship Physics of complex systems Jan - Aug 2018
- **Romain Basalgète** - Master 2 internship - Theo. Phys. Ecole Normale Supérieure Apr - Jul 2019
- **Gauthier Weissbart** - Master 2 internship Syst. Biol. University Paris-Saclay Jan - Jun 2019
- **Mingmeng Geng** - Master 1 internship - App. maths, Ecole Polytechnique Mar - Aug 2020
- **Kevin Sounanthanam** - Master 2 internship - Bioinformatics, Sorbonne Université Feb - Jul 2020
- **Sacha Ichbiah** - Master 2 internship - Ecole Polytechnique Apr - Jun 2020
- **Pierre Terpereau** - Master 2 internship in physics at Université Paris Sud Apr - Jul 2021
- **Ghislain de Labbey** - Master 2 internship in physics at Ecole Normale Supérieur Feb - Jul 2021

Teaching & educational management:

- Since Jan 2022: 27 hours - Physics of multicellular systems - 2nd year of Master (International Centre for Fundamental Physics and its Interfaces ICFP) at Ecole Normale Supérieure (Paris).
<https://github.com/hturlier/M2ICFP>
- Feb 2022 - PSL-Qlife winter school in quantitative biology 'Active matter in biology' - Organization/teaching of a practical course (7h) on cytoskeletal dynamics simulations.
- Member of the Scientific Board of the PSL-Qlife winter schools in quantitative biology 'Cell dynamics in developmental systems' in 2021 and 2024.

Organization of conferences, workshops and scientific schools:

8. **Conference:** From Soft Matter to Biophysics - Les Houches Physics School - 5 days - Feb 16-21 2025.
7. **Workshop:** Finite Elements for Cell and Tissue Morphogenesis - Fréjus, FR - 5 days - Sep 9-13 2024.
6. **Workshop:** From Genes to Shape: Evolutionary Morphogenesis of the embryo - 5 days - Sep 2-6 2024.
5. **Seminar:** Deep-learning for biology: promises, challenges and pitfalls - Fondation des Treilles - 5 days - Jun 10-15 2024.
4. **Conference:** From Soft Matter to Biophysics - Ecole de Physique des Houches, FR - 6 days - Jan 29-Feb 3rd 2023.
3. **School:** Modeling Cellular Processes in Space and Time 3 - EMBO Practical Course - 1 week - Porquerolles Island, FR - Oct 2016.
2. **School:** Modeling Cellular Processes in Space and Time 2 - 1 week - Porquerolles Island, FR - Oct 2015.
1. **School:** Modeling Cellular Processes in Space and Time - 1 week - Porquerolles Island, FR - Oct 2014.

Professional services:

2023-2025 Director of the cell & developmental biology department at CIRB, Collège de France.

Editorial activity

- NPJ Biological Physics and Mechanics editorial board member
- Open Research Europe - Developmental biology collection
- SciPost Editorial College fellow
- NPJ Biological Physics and Mechanics special Collection "*Modeling the Dynamics of Life: New Frontiers in Biological Physics and Mechanics*" to be opened Dec 1st 2024.

Scientific evaluation committees

- **2024 ANR scientific evaluation committee, panel CE45** (Interfaces: mathematics, digital sciences – biology, health)
- Member of the jury of the Paoletti Prize 2022 (CNRS).

PhD juries and thesis committees

- PhD jury of Marc Karnat (dir: JF. Rupprecht), 12/2023, Université Aix Marseille.
- PhD jury (President) of Waleed Mirza (dir: M. Arroyo), 02/2023, Polytechnic University of Catalunya, Barcelona (UPC).
- PhD jury of Raphaël Conrardin (dir: B. Chopard), 09/2022, University of Geneva.
- PhD thesis jury of Florent Wijanlo (dir: J-M. Allain), defended on 12/2019, Ecole Polytechnique.
- PhD thesis committee of Etienne Moisson, Laboratoire Matière et Systèmes Complexes, 2017-2020.

Peer review for scientific journals and grant agencies

Agence Nationale pour la Recherche (ANR), Research Foundation Flanders (FWO), UK Research and Innovation (UKRI), Science, Nature, Nature Physics, Nature Computational Science, Nature Communications, Nature Cell Biology, Physical Review Letters, Physical Review E, eLife, PloS Computational Biology, Development, Biophysical Journal, Soft Matter, BioEssays, Human Reproduction, NPJ Medicine, Philosophical Transactions B, Seminars in Cell & Developmental Biology, Cells and Development...

Outreach and communication:

- Since 2021, half a day every year in a French high-school, as part of the educational program Déclics.
- Interview in Nature in 2024 by Michael Eisenstein on the topic: "Push and pull: how to measure the forces that sculpt embryos".
- Interview in Nature Methods in 2023 by Vivien Marx on the topic "How to build a virtual embryo".
- Interview in 2019 in the French science magazine Science et Vie, following our publication in Science on the hydraulic fracturation in mouse embryos.

Member of scientific societies:

- French physical society (SFP) since 2014.
- French society for Developmental Biology (SFBD) since 2020.
- American Society for Cell Biology (ASCB) since 2024.