

Hadrien Oliveri

Postdoctoral Researcher

CURRENT AFFILIATIONS

- Postdoctoral Research Associate – Mathematical Institute, Oxford Centre for Industrial and Applied Mathematics, University of Oxford, Oxford, OX2 6GG, United Kingdom
- Fulford Junior Research Fellow – Somerville College, University of Oxford, Oxford, OX2 6HD, United Kingdom

PERSONAL DETAILS

<i>Nationality</i>	French
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<i>Institutional</i>	www.maths.ox.ac.uk/people/hadrien.oliveri
<i>Goo. Schol.</i>	scholar.google.com/citations?user=t-GO214AAAAJ&hl=fr&oi=ao
<i>Twitter</i>	twitter.com/HadrienOliveri
<i>ResearchGate</i>	www.researchgate.net/profile/Hadrien-Oliveri

MAIN SCIENTIFIC INTERESTS

Mathematical and computational modelling of biological systems · Growth and mechanics · Biological development

RESEARCH EXPERIENCE

Postdoctoral research associate (current position)

2019-2023

University of Oxford, Mathematical Institute, Oxford Centre for Industrial and Applied Mathematics

Supervisor: Prof. Alain Goriely.

EDUCATION

Ph.D. in computer science

2015-2019

University of Montpellier / Inria

“On the role of mechanical feedback in plant morphogenesis” (<https://hal.inria.fr/tel-02176096>).

Advisors: Dr. Christophe Godin, Dr. Jan Traas.

M. Eng. in computer science and applied mathematics

2012-2015

Grenoble Institute of Technology, Ensimag

Specialisation: Mathematical modelling, image and simulation.

Classes préparatoires aux grandes écoles

2010-2012

Lycée Vaugelas, Chambéry

Two-year preparation for national competitive entrance exams leading to French *grandes écoles*, specialising in mathematics and physics.

LANGUAGES

French (mother tongue) · English (professional proficiency) · Italian (very good level)

OTHER ACADEMIC ACTIVITIES

- Peer-reviewer for *PNAS* (1 review), *Physical Review E* (2 reviews), *PLoS Computational Biology* (1 review) and *Brain Multiphysics* (1 review).
- University of Oxford / Mathematical Institute – Co-organiser of the weekly internal seminar of the *Oxford Centre for Industrial and Applied Mathematics* (ongoing).

TEACHING

- University of Oxford, Michaelmas term 2021 – Tutor for *Solid Mechanics*, supervised by Prof. Dominic Vella (Mathematical Institute).
- University of Oxford – Co-supervision of a postgraduate student, with Prof. Alain Goriely, Prof. Derek Moulton (Mathematical Institute), and Dr. Chris Thorogood (Oxford Botanic Garden) – *Dynamics of prey trapping in the carnivorous plant Nepenthes*.
- University of Oxford – Group supervisor for *Case Studies in Mathematical Modelling* supervised by Prof. PK Maini (2021) – <https://courses.maths.ox.ac.uk/node/51630>.
- Workshop *Modeling Shape and Size in Biological Development* (Lorentz Centre, Leiden) – Assisted supervision of a working group with Prof. PK Maini (2020).

GRANTS & FELLOWSHIPS

Fulford Junior Research Fellowship (non-stipendiary)
Somerville College, University of Oxford

2021-2023

AWARDS & ACHIEVEMENTS

- Best ECR presentation – 6th *Oxford International Neuron and Brain Mechanics Workshop*, Oxford, United Kingdom, April 2021.

PEER-REVIEWED PUBLICATIONS

*These authors contributed equally.

SELECTED PUBLICATIONS

- Oliveri & Goriely (2021). Mathematical models of neuronal growth. *Biomechanics and Modeling in Mechanobiology* (in press).
- Oliveri, Franze & Goriely (2021). Theory for durotactic axon guidance. *Physical Review Letters* [Editor's Suggestion]. <https://doi.org/10.1103/PhysRevLett.126.118101>.
- Moulton*, Oliveri* & Goriely* (2020). Multiscale integration of environmental stimuli in plant tropism produces complex behaviors. *Proceedings of the National Academy of Sciences*. <https://doi.org/10.1073/pnas.2016025117>.
- Zhao*, Du*, Oliveri*, Zhou*, Ali*, Chen, Feng, Wang, Lü, Long, Schneider, Sampathkumar, Godin, Traas & Jiao (2020). Microtubule-mediated wall anisotropy contributes to leaf blade flattening. *Current Biology*. <https://doi.org/10.1016/j.cub.2020.07.076>.

- **Oliveri**, Traas, Godin & Ali (2019). Regulation of plant cell wall stiffness by mechanical stress: a mesoscale physical model. *Journal of Mathematical Biology*. <https://dx.doi.org/10.1007/s00285-018-1286-y>.

OTHER PUBLICATIONS

- Boudissa, Bahl, **Oliveri**, Chabanas & Tonetti (2021). Virtual preoperative planning of acetabular fractures using patient-specific biomechanical simulation: a case-control study. *Orthopaedics & Traumatology: Surgery & Research*. <https://doi.org/10.1016/j.otsr.2021.103004>.
- Boudissa, Noblet, Bahl, **Oliveri**, Herteleer, Tonetti & Chabanas (2021). Planning acetabular fracture reduction using a patient-specific biomechanical model: a prospective and comparative clinical study. *International Journal of Computer Assisted Radiology and Surgery*. <https://doi.org/10.1007/s11548-021-02352-x>.
- Ali, **Oliveri**, Traas & Godin (2019). Simulating turgor-induced stress patterns in multilayered plant tissues. *Bulletin of Mathematical Biology*. <https://doi.org/10.1007/s11538-019-00622-z>.
- Boudissa, **Oliveri**, Chabanas & Tonetti (2018). Computer-assisted surgery in acetabular fractures: Virtual reduction of acetabular fracture using the first patient-specific biomechanical model simulator. *Orthopaedics & Traumatology: Surgery & Research*. <https://doi.org/10.1016/j.otsr.2018.01.007>.
- **Oliveri**, Boudissa, Tonetti & Chabanas (2017). Planning acetabular fracture reduction using patient-specific multibody simulation of the hip. In Medical Imaging 2017: Image-Guided Procedures, Robotic Interventions, and Modeling. *International Society for Optics and Photonics*. <https://doi.org/10.1117/12.2250380>.
- Boudissa, Chabanas, **Oliveri** & Tonetti (2015). Virtual fracture reduction of the acetabulum using a rigid body biomechanical model. *Revue de Chirurgie Orthopédique et Traumatologie*. <https://doi.org/10.1016/j.rcot.2015.09.119>.

CONFERENCE TALKS, EXTERNAL SEMINARS & POSTERS

- An optic ray theory for nerve durotaxis. *5th Soft Tissue Modelling Workshop*, Glasgow, United Kingdom, June 2021. http://www.softmech.org/events/headline_791379_en.html
- An optic ray theory for nerve durotaxis. *6th Oxford International Neuron and Brain Mechanics Workshop*, Oxford, United Kingdom, April 2021. <https://youtu.be/fk8A8rXChUU>
- A multiscale mathematical theory for plant tropism. Department of Mathematical Sciences, University of Durham, Durham, United Kingdom, March 2021. <https://www.dur.ac.uk/research/events/?eventno=S6658>
- Stress-based regulation of multicellular plant growth: a finite element modeling approach applied to planar leaf morphogenesis (poster). *19th International Conference on Systems Biology*, Lyon, France, Octobre 2018. <https://hal.archives-ouvertes.fr/hal-01897027>
- Morphogenesis of plant organs: understanding the emergent behavior of stress-sensing tissues. *9th international plant biomechanics conference*, Montreal, Canada, August 2018. <https://www.plantbiomech2018.com/>.
- Force-sensing at the cell wall: a multiscale physical model. *Meeting of the French groupement de recherche PhyP*, Marseille, France, June 2017. <https://gdrphyp.wordpress.com/>.

OTHER PERSONAL INTERESTS

Plants · Guitar · Chess