

## EDITORIAL

# preLights – curating preprints for the biological community since 2018

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In line with its aim of supporting the biological community, The Company of Biologists hosts three community sites. One of these, preLights (<https://prelights.biologists.com/>), has been helping to stimulate and shape discussions around biological preprints for almost six years now. At the heart of preLights is a dynamic community of early-career researchers who meticulously curate and showcase preprints spanning a wide range of biological fields. These dedicated ‘preLighters’ also initiate informal, engaging and inclusive discussions with preprint authors. By providing a curated platform for preprints, preLights not only accelerates the sharing of the latest research findings but also allows scientists to spot emerging trends in various disciplines.

Since its launch in early 2018, the preLights community has been steadily growing to now include over 450 preLighters, 1450 subscribers, 7700 X/Twitter followers and 622 Mastodon followers. Almost 1450 preLights posts have been published on the preLights website to date. Over the course of this year alone, our preLights community has highlighted a high number of preprints that are of interest to the wider biological community. Notably, many of these have been in the broad, fast moving field of cell biology.

Here, we feature a few noteworthy posts prepared by some of our preLighters focussing on two fields of research that will be covered by Journal of Cell Science in upcoming special issues: ‘Cell and Tissue Polarity’ and ‘Imaging Cell Architecture and Dynamics’.

## preLights in the field of ‘Cell and Tissue Polarity’

Earlier this year, Sudeepa Nandi, a PhD student at the Tata Institute of Fundamental Research, India, highlighted a preprint that used mouse hair follicles to study tissue dynamics and architecture ([doi:10.1242/prelights.33688](https://doi.org/10.1242/prelights.33688)). This preprint described the role of coordinated mechanical contributions from dermal fibroblasts and polarised epithelial myosin activity in generating the placode structure. In this context, the asymmetry in myosin distribution plays a role in epithelial cell elongation and curvature.

The role of cell polarity in directing cell (and tissue) growth was also covered in a preLights post ([doi: 10.1242/prelights.34535](https://doi.org/10.1242/prelights.34535)) written by two postdocs: Marc Somssich (Max Planck Institute for Plant Breeding Research, Germany) and Gwendolyn K. Kirschner (King Abdullah University of Science and Technology, Saudi Arabia). They highlighted two preprints that independently described how plant roots manage to grow with gravity. After a search of ~20 years, these two studies identified the repolarisation of LAZY proteins as the missing link between amyloplast movement and auxin redistribution in root gravitropism.

Rodrigo Senovilla-Ganzo, a PhD student at the Achucarro Basque Centre for Neuroscience, Spain, chose to highlight a preprint that examined antero-posterior polarity at the level of the organism in adult echinoderms ([doi:10.1242/prelights.34443](https://doi.org/10.1242/prelights.34443)). The

preprint authors used spatial transcriptomics to shed light on the echinoderm body plan. Rodrigo notes that the authors have managed to overthrow current theories about patterning in echinoderms and have left the door open for a new paradigm in echinoderm body plan evolution.

## preLights in the field of ‘Imaging Cell Architecture and Dynamics’

Kanika Khanna – currently the Scientific Program Leader at the Gladstone Institute of Virology, USA – highlighted a study that quantified the damage caused by cryogenic focused ion beam milling to biological specimens ([doi:10.1242/prelights.34034](https://doi.org/10.1242/prelights.34034)). Importantly, the preprint discusses how this information can be leveraged to prepare samples for *in situ* structure determination. According to Kanika, this information will be very important for researchers working at the interface of both cryo-EM method development and structural cell biology.

Nadja Hümpfer, a PhD student at Freie Universität Berlin, Germany, covered a preprint that features an upcoming imaging technology able to circumvent the diffraction limit of fluorescent microscopy, ultrastructure expansion microscopy (U-ExM) ([doi:10.1242/prelights.34838](https://doi.org/10.1242/prelights.34838)). This microscopy technique is cost effective, easy to implement with already established staining protocols, increases the spatial resolution and provides ultrastructural context. In the preprint that Nadja highlighted, the authors used U-ExM to investigate the cellular organization of *Plasmodium falciparum* asexual reproduction in erythrocytes. Nadja underlines how the resulting *Plasmodium* atlas could become a powerful resource for researchers in the field, especially once the imaging data is made publicly available.

More recently, two preprints were highlighted in which advanced imaging techniques were used to visualise highly dynamic cellular processes. Roberto Amadio, PhD student at the University of Trieste and ICGEB, Italy, covered a preprint investigating the regulation of actin dynamics by means of super-resolution microscopy and various fluorescent reporters ([doi:10.1242/prelights.35841](https://doi.org/10.1242/prelights.35841)). In Roberto’s preLights post, first author Xiang Le Chua shares some of the challenges in imaging these highly dynamic events in real time. Uwe Töpfer, Postdoctoral Research Fellow at UBC Vancouver, Canada, picked a preprint that looked into another dynamic process: basement membrane development during the morphogenesis of hair follicles ([doi:10.1242/prelights.35875](https://doi.org/10.1242/prelights.35875)). To study this at the highest possible resolution, the authors developed a planar-sagittal multiview imaging approach. Uwe points out that the novel mouse model and imaging techniques used in this study provide a new perspective on basement membrane development in mammals.

## Follow preLights and stay up to date on the latest preprints on your favourite topic

We have highlighted only a few specific preprints/preLights from 2023 here, but it is worth noting that preLights covers a diverse

preLights Community Manager.

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**Box 1. Thanks to our preLighters in the field of cell biology**

This year, a large group of preLighters have contributed to posts that fall into the 'cell biology' category of preLights. We'd like to take this opportunity to thank them all: Saanjvati Adhikari; Roberto Amadio; Matheus Atella de Oliveira; Pierre Caron; Leeba Ann Chacko; Emily Chan; Jade Chan; Jessica Chevallier; Aniruddha Das; Matthew Davies; Martin Estermann; Cláudia Gil; Carly Gultinan; Nadja Hümpfer; Rob Hynds; UofA IMB565; Andreas van Impel; Ines Jmel-Boyer; Girish Kale; Yohalie Kalukula; Kanika Khanna; Gwendolyn K. Kirschner; Barbora Knotkova; Martyna Kosno-Vega; Sanjay Sunil Kumar; Robert Mahen; Diego Martínez; Kritika Mehta; Anastasia Moraiti; Sudeepa Nandi; Audrey Noireterre; Marcus Oliveira; Divya Pathak; Patrick Penndorf; Teodora Piskova; Megane Rayer; Marina Scherthanner; Rodrigo Senovilla-Ganzo; Marc Somssich; Monica Tambalo; Jessica L. Teo; Uwe Töpfer.

preprints that span different fields of cell biology. To stay informed about the latest preLights in your field, you can [register on our website](#). Additionally, keep an eye out for our Preprint Highlights, published in JCS four times per year, with the last one featured in [Volume 136, Issue 21](#).

For early-career researchers passionate about science writing, networking with like-minded people, and, of course, exploring the world of preprints, we invite you to reach out! If you are, or know of, an early-career researcher with such interests, don't hesitate to message us at [prelights@biologists.com](mailto:prelights@biologists.com). We are always happy to welcome more people to our friendly, collaborative and international community and look forward to continuing to bring you the latest insights from the world of cell biology.