

Interview with the Guest Editor – Jenny Russinova

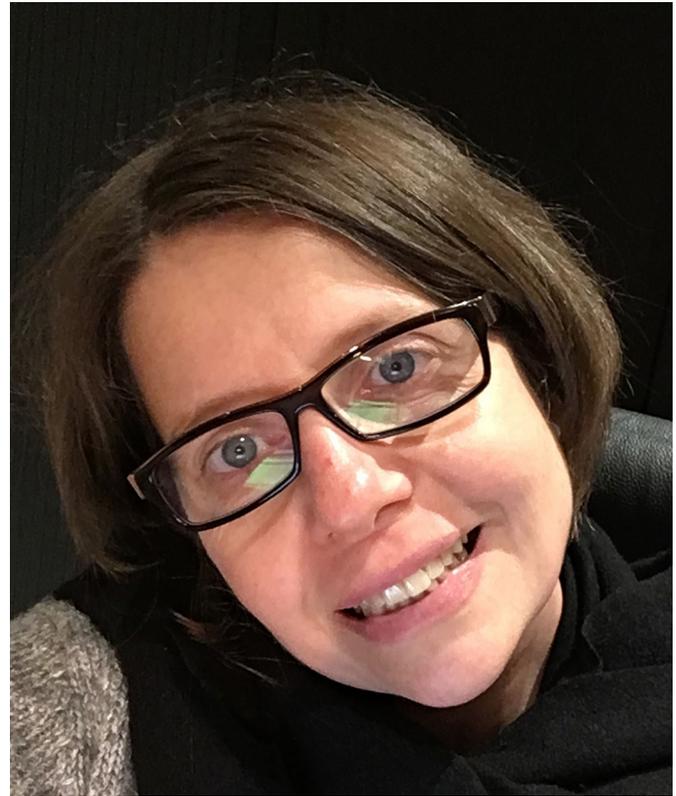
Jenny Russinova graduated in biotechnology from the University of Sofia, Bulgaria, and subsequently obtained her PhD at De Montfort University, Leicester, UK, where she worked on gene expression in plant embryogenesis. Jenny then moved to the Netherlands to do her post-doctoral studies at Wageningen University, Wageningen, in the laboratory of Sacco de Vries. There, she worked on cellular regulation, mechanisms and localization of plant receptor-like kinases. In 2006, she started her own research group at the Vlaams Instituut voor Biotechnologie (VIB) at Ghent University, Belgium, focusing on brassinosteroid signaling regulation in plants. Jenny is the Guest Editor for the 2018 plant cell biology Special Issue in *Journal of Cell Science*.

What are your research interests?

My team is interested in understanding how plant steroid hormones – in particular brassinosteroids – actually promote growth. Brassinosteroids are important hormones for the task of improving crops, because they increase the yield when they are applied to plants. Being small molecules, they bind to cell surface receptors, and this activates downstream signalling and ultimately transcription factors, which leads to growth promotion. It is a well-studied signalling pathway, but we want to address this from a cell biology perspective: how are the subcellular compartmentalisation and the location of different signalling components of receptor complexes on endomembranes regulating these signalling pathways? How does this contribute to signalling in plants? We try to understand the molecular players involved in endomembrane trafficking in plants and we are interested in endocytosis, secretion and recycling. It's tackling a question of developmental biology from a cell biology angle.

What attracted you to endomembrane trafficking in plants?

I always knew I would work with plants as they were with me from a young age – I remember spending my summer holidays with my grandmother, looking for the different plants in the fields and trying to identify them in the books of my mother, learning all the Latin names of plants. I always wanted to become a plant biologist. After my PhD, I was interested in plant embryogenesis and I was then very lucky to meet Sacco de Vries, at the time a pioneer in studying embryogenesis in plants, and I decided to do my post-doc in his lab. They had identified somatic embryogenesis receptor kinase 1 (SERK1), which is a member of a small family of five receptors. One of its homologues is also a co-receptor of BRI1, which is the main brassinosteroid receptor in plants. When I came to Sacco's laboratory, we wanted to set up a cell biology approach to study these receptors. We set up a model system and looked at protoplasts, and we were one of the first labs that did fluorescence-lifetime imaging microscopy (FLIM) measurements to demonstrate the interactions of receptors in living cells. We also did a lot of confocal microscopy to look at endocytosis. At the time, the endocytosis field



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working on mammalian cells was really moving forward, so that got me interested, and I continued with this research question later as an independent researcher in Belgium.

What recent findings do you find exciting and where do you think plant cell biology is heading?

I'm fascinated to see how plant cell biology is developing, considering that during my post-doc people were still really sceptical about using plants. Some people didn't even believe that endocytosis exists in plant cells! A lot of geneticists and developmental biologists now appreciate the importance of cell biology approaches, be it to visualise proteins or to study dynamics in the cell. They generate fluorescence-based sensors and visualise protein–protein interaction dynamics – it's a lot of quantitative cell biology. I'm also particularly interested to see what the gene-editing technology will bring to the plant cell biology community. We already see a lot of possibilities, like being able to modify and tag endogenous proteins, which will be very important in the future. Simultaneously, there's a push to reset the boundaries of cellular imaging and there are also reports of super-resolution imaging. All this can be difficult in plant cells and will take time, but the imaging of single cells and enhancements in image resolution will see improvements.

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Jenny enjoys travelling and visiting interesting places. This picture is taken at the Great Wall of China, Mutianyu, near Beijing.

Why did you accept the invitation to become a Guest Editor for Journal of Cell Science?

I always liked Journal of Cell Science and its sister journal Development. I published in Journal of Cell Science in 2010 and I'm really proud of this publication. It is a very strong cell biology journal with high visibility in the mammalian and yeast fields, rather than just the plant field, and highly respected – so I felt honoured to be invited as a Guest Editor. One of the things that motivated me a lot was that there are comparatively fewer plant papers published in general cell biology journals like Journal of Cell Science, so it was a challenge to help increase the visibility of the plant community and to encourage a lot of my colleagues to publish in Journal of Cell Science. At conferences with classic mammalian cell biology, plant cells are hardly mentioned – I wanted to draw attention to the fact that plant cell biology exists, has very strong potential and should be placed on the map, together with other model systems.

What did you hope to get out of this role?

As with my previous editing experience, this has really been a learning curve – how to evaluate manuscripts in detail, how to be

critical but also constructive, to be able to provide suggestions and help people improve their work. I also had the opportunity to learn a lot about different topics and technologies; I think being an editor helps you to improve your own publications and work, and it's an extremely good source of information.

What was your role in handling manuscripts for Journal of Cell Science?

I handled all the manuscripts that were submitted for the Special Issue. I had to read the manuscripts, evaluate their quality and decide whether they would be suitable or not for this issue. Of course, as an editor, I was involved in the reviewing process – to appoint suitable reviewers for the papers, to decide on the manuscript's future based on the reviewer comments and my personal evaluation, and to provide constructive advice to the authors for the revisions, or explain the reasons for a negative outcome.

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You mentioned one learns a lot as an editor. Would you therefore also advise early-career scientists to engage in reviewing and editing as soon as possible?

Yes, I would definitely recommend that young scientists or group leaders review manuscripts. I think this is a crucial service to the community. As I said, you learn a lot about how to improve the quality of your own work and how to look critically at what you do and what is going on in your lab. Of course not every young researcher will have the possibility to act as an editor, but as a reviewer you will still get an idea of how to evaluate and edit manuscripts. You will also get to interact with a lot of different researchers by doing so, which is great for someone at the early stages of their career.

Jenny Russinova was interviewed by Manuel Breuer, Features & Reviews Editor at Journal of Cell Science. This piece has been edited and condensed with approval from the interviewee.