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JCS PRIZE

2021 winner: Lee Dolat

Michael Way[1,*]

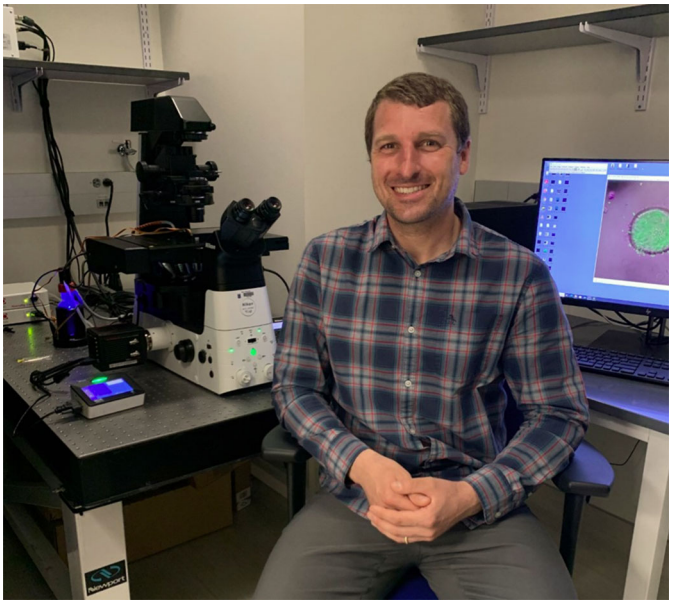
We are pleased to announce that the winner of the 2021 JCS Prize is Lee Dolat for his paper entitled 'An endometrial organoid model of interactions between *Chlamydia* and epithelial and immune cells' (Dolat and Valdivia, 2021).

The prize of £1000 is awarded annually to the first author of the paper that is judged by the Editors to be the best eligible paper published in the Journal of Cell Science that year. To be considered for the prize, the first author must be a student or a postdoc of no more than five years standing.

Lee grew up in Ledyard, Connecticut, and received his undergraduate degree from the University of Connecticut. After graduation, he worked as a research technician at 454 Life Sciences, a small biotech that was an early developer of next-generation DNA sequencing. He then moved to Boston, MA, where he worked as a research technician at Massachusetts General Hospital under the guidance of Dr Mason Freeman and Dr Michael Fitzgerald. Using stratified epidermal keratinocyte organotypic culture systems, he studied the role of the lipid transporter ABCA12 in epidermal lipid homeostasis and barrier function.

For his graduate studies at Drexel University in Philadelphia, PA, Lee joined the laboratory of Dr Elias Spiliotis, whose research focuses on the cell biology of septins, filamentous GTPases that regulate the organization and dynamics of actin, microtubules and cell membranes. In his thesis work, he identified that septins directly bind and bundle actin filaments to regulate the assembly of a contractile stress fiber network, focal adhesion assembly and epithelial cell motility (Dolat et al., 2014; Smith et al., 2015). In a second study, he uncovered a role for septins in macropinocytosis, during which they assemble at contact sites between macropinosomes and endolysosomes in a phosphatidylinositol-specific manner to promote membrane fusion (Dolat and Spiliotis, 2016).

Septins were shown by others to participate in cell autonomous immunity to intracellular pathogens, which inspired Lee to undertake a post-doc in the field of host–pathogen interactions. He then joined the laboratory of Dr Raphael Valdivia – an expert in the molecular genetics and cell biology of *Chlamydia trachomatis* infections at Duke University, Durham, North Carolina, USA. *Chlamydia* are obligate intracellular pathogens that employ an arsenal of secreted effector proteins to enter host epithelial cells and replicate within a membrane-bound vacuole, termed the inclusion. Owing to its unique intracellular lifecycle, however, *Chlamydia* has, until the past decade or so, been difficult to genetically manipulate.



His research now leverages new techniques to genetically modify *Chlamydia*, and polarized 2D and 3D epithelial infection models to identify how *Chlamydia* effector proteins reprogramme epithelial organization, cytoskeletal function and innate immune responses (Dolat and Valdivia, 2021).

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[1]Editor-in-Chief, Journal of Cell Science.

*Author for correspondence (michael.way@crick.ac.uk)