



nature publishing group



► **COVER:** 'Chemotaxis' by Vicky Askew, inspired by the Review on p455



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GTPases make up a broad class of proteins that are crucial for various cellular processes, including signal transduction, vesicular transportation and membrane dynamics. On page 464, Paul R. Clarke and Chuanmao Zhang discuss evidence revealing that Ran, a small GTPase of the Ras superfamily, is involved in the regulation of mitosis. In addition to its central role in transporting proteins in and out of the nucleus, Ran directs the assembly of the mitotic spindle, nuclear-envelope dynamics and the timing of cell-cycle transitions.

Septins, another family of GTPases, are also involved in diverse processes, including cell division, cytoskeletal organization and membrane-remodelling events. Since their discovery, over 35 years ago, it has become evident that septins function by forming oligomeric structures, which in turn form higher-order structures. However, most of the molecular details of how these septin structures assemble and of how septins function have remained elusive. On page 478, Yves Barral and colleagues consider recent studies that have analysed the basic structure of septins and septin assembly. Notably, these studies have provided valuable insight into how septins function *in vivo*.

In our first ever Progress article, Daniel M. Davis and Stefanie Sowinski (page 431) discuss transient long-distance connections between cells, known as membrane nanotubes. Interestingly, the heterogeneous nature of membrane nanotubes implies different processes of formation and diverse potential functions. Progress articles concentrate on current papers of outstanding interest that are setting new standards in a field and focus on a single topical aspect of a field, rather than providing a comprehensive literature survey. We hope you enjoy this new article type, and we look forward to publishing more Progress articles in the future.

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