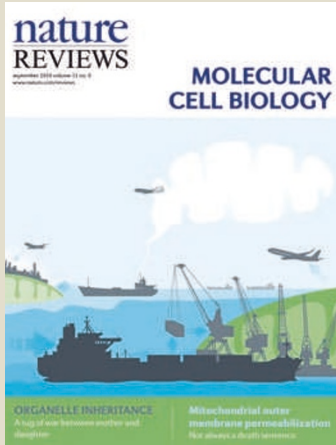




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► **COVER:** 'Mitochondrial import' by Vicky Summersby, inspired by the Review on p655



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Mitochondria are made up of specialized regions, including the outer membrane, intermembrane space, inner membrane and matrix. This enables their involvement in cellular processes such as energy production, signalling and cell death. On page 621 Tait and Green focus on the mitochondrial outer membrane and discuss how its permeabilization leads to the release of pro-apoptotic proteins from the intermembrane space — the crucial caspase activation event in the mitochondrial apoptotic pathway. Thus, the integrity of this membrane is highly controlled, primarily through interactions between pro- and anti-apoptotic B cell lymphoma 2 proteins.

To carry out their cellular functions, proteins also need to get into different mitochondrial compartments. On page 655, Schmidt, Pfanner and Meisinger describe how proteomic studies have identified numerous new transport components and pathways for mitochondrial protein import and revealed that protein translocases are connected to cellular machineries that function in bioenergetics and mitochondrial morphology. Fagarasanu, Mast, Knoblach and Rachubinski draw parallels to mitochondria on page 644 as they discuss the molecular mechanisms of organelle inheritance based on data from studying peroxisomes in yeast.

Finally, on page 668, Guo, Yang and Schimmel discuss how tRNA synthetases have evolved new functions by progressively adding domains that have no connection to aminoacylation. The *Nature Reviews Molecular Cell Biology* editorial team has also evolved, and we say a big goodbye and thank you to Arianne Heinrichs, who led the journal from strength to strength for 8 years. Please join us in welcoming Alison Schuldt as the new Chief Editor. She comes to us after 9 years as a senior editor at *Nature Cell Biology*, and we look forward to seeing her vision for the journal unfold!

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