Mammalian and yeast cells form stress granules during cold shock. In cold-shocked African green monkey COS7 kidney cells (background image), protein synthesis is arrested and translation initiation factors including eIF3B (cyan), together with poly(A) mRNA, assemble in cytoplasmic stress granules. In addition, the mitochondrial network breaks down in the cold as seen by MitoTracker staining (blue). Nuclei visualized with Hoechst dye are depicted in orange. A three-dimensional reconstruction of stress granules in cold-shocked yeast cells is shown in the bottom left corner. The cyan granules correspond to Pab1-mCherry in two yeast cells. The curves represent polysome profiles of yeast cells during recovery from cold shock. Upon return to optimal temperatures, translation resumes after the disassembly of stress granules. See the article by Hofmann et al. on p. 3786 of this issue of MBoC. (Image: Valeria Cherkasova, University of Heidelberg, and Sarah Hofmann, German Cancer Research Center, Heidelberg)