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On the Cover

MicroUniverse. Image by Ivan Surovtsev, Yale University. Winner of 2nd place (tied) in ASCB's Green Fluorescent Protein (GFP) Image & Video Contest. Living systems displays spatial patterns at wide range of length and organization scales. Even at the single-cell level, patterns are present as protein gradients and in the regular arrangement of cytoskeletal structures, macromolecular complexes, and organelles. Intracellular patterning serves important functions, helping cells to organize their intracellular space, sense their geometry, and partition their cellular content. How intracellular patterns are established often remains elusive. Shown in this image are filamentous bacterial *Escherichia coli* cells (blue) with fluorescently labeled plasmids (green) and ParA protein (red). ParA together with plasmid-bound ParB protein converts random chromosome fluctuations into direct active transport and spatial patterning of the plasmids (without cytoskeletal filaments or motor proteins) inside the cell to ensure that both daughter cells inherit plasmids (and genes encoded on plasmids).