

**Do microtubules influence the distribution of nuclei in giant *Dictyostelium* cells ?**  
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The control of cell size is one of the most important characteristics of a cell (Ginzberg *et al.*; 2015). Essential cellular functions, the associated signal transduction pathways and reactions to environmental conditions are significantly influenced by the cell size. Also proliferation by cell division is linked to the cell size. Therefore, a specific size for each cell type is determined by nature. Experiments on the eukaryotic model organism *Dictyostelium discoideum* pointed out that after fusion of cells to a multinuclear giant cell, the latter is able to separate again into different-sized but mononucleated cells (Neujahr *et al.*, 1998). To gain further insight into this process, this work was focused on the basics of cellular organelle distribution in giant cells. Therefore, electropulse-induced giant cells of three different *D. discoideum* strains expressing fluorescent fusion-proteins were created, imaged and analyzed. By examination of the nuclei and centrosomes in comparison to modeling data, it could be confirmed for the first time that these cellular compounds are randomly distributed in the multinuclear cells and not dependent on each other, as previous work in the workgroup suggested. In addition, an influence of the cytoskeletal microtubules on the distributions of nuclei and centrosomes in giant cells could not be detected in this work, even though microtubules were shortened by the polymerization inhibitor thiabendazole in comparison to untreated cells.