

Segmenting bacteria and fungal spores

When segmenting small objects, e.g. bacteria or fungal spores, Spots don't always work well. E.g, the fungi may vary in size too much, so no singular spot size will fit. Or, the cell wall may be sharply labelled, whilst the inner parts of the cells are not, in which case the Spots finder will fail (it will just place Spots on the bright periphery). In such cases, you can try the following:

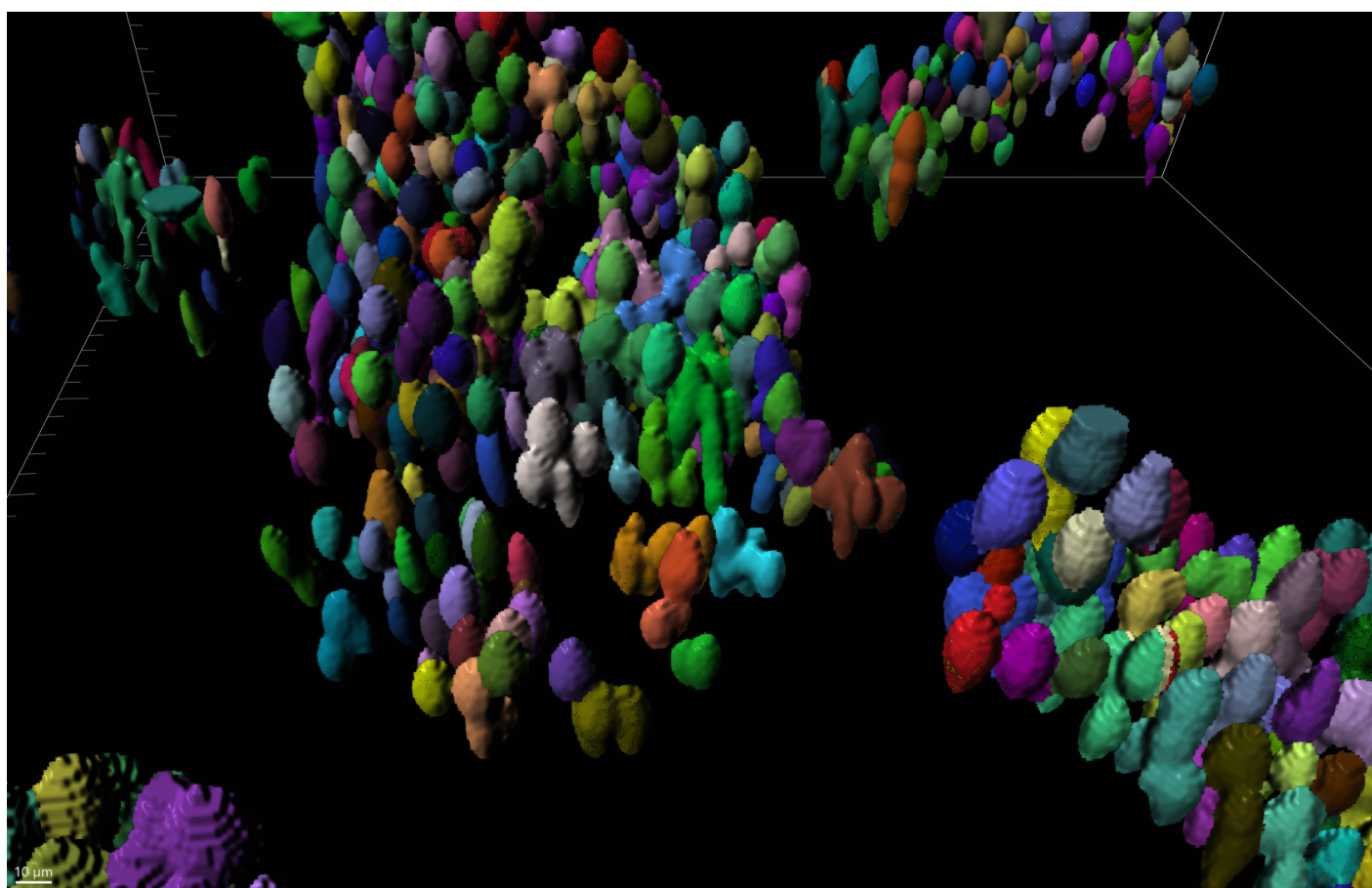
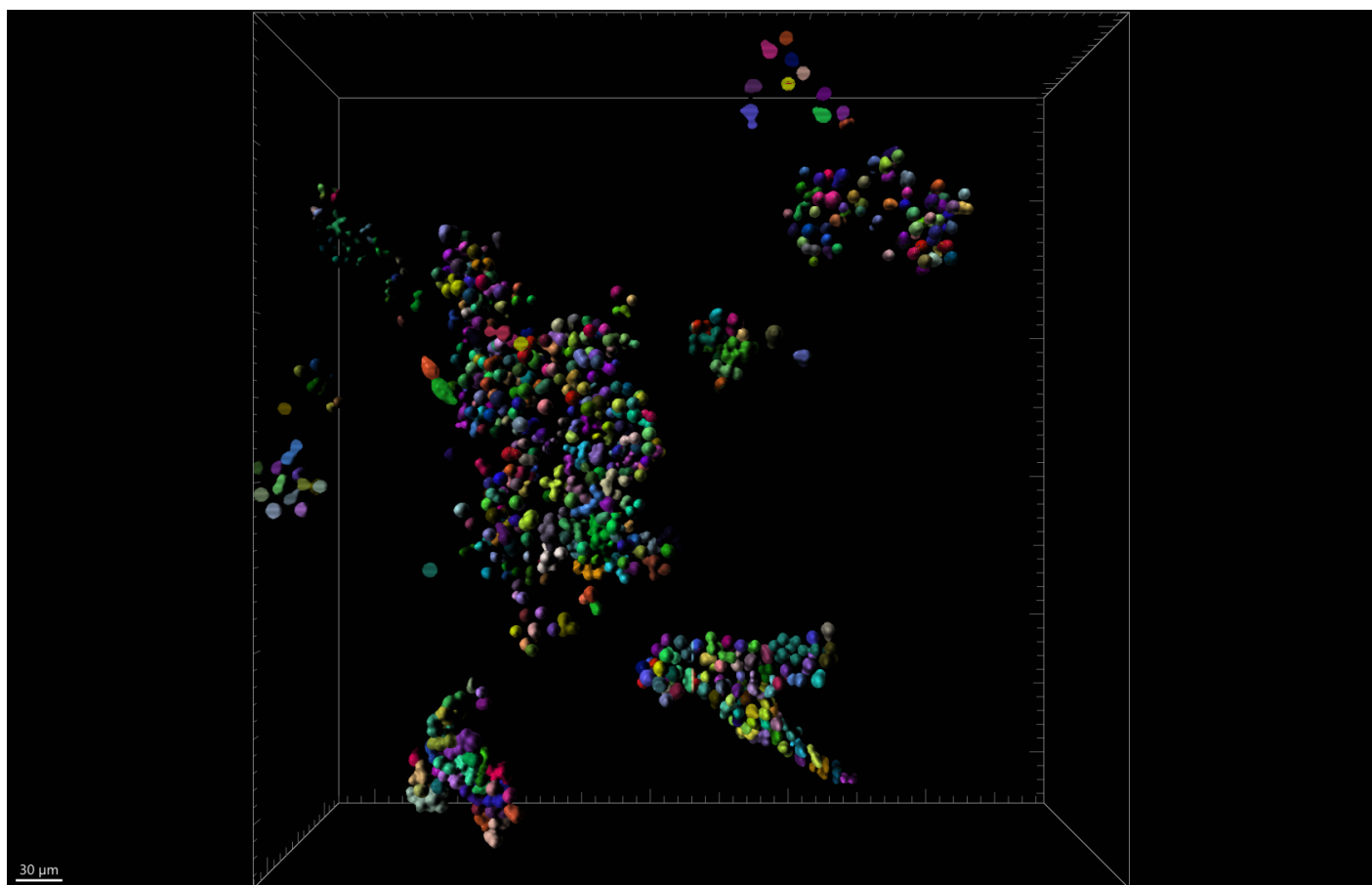
1. Segment the small objects as Surfaces. Do your best to separate the individual objects, but also make sure that you segment everything you need. Do not worry too much about merged objects, we will separate them later.
2. Set up a Cells object on the same channel, but use the now-existing Surfaces representation of the small objects as input ("Imported from Surfaces = true"). Choose the Cell mode where there are only cell membrane labels provided ("Cell Type = Cell Body", see image below; i.e., no nuclei, no intracellular vesicles). Set the Cells size accordingly, and let it segment. The results will be surprisingly good, nicely separating the objects that were merged in the Surfaces representation.

Create Yeast from Cells Object

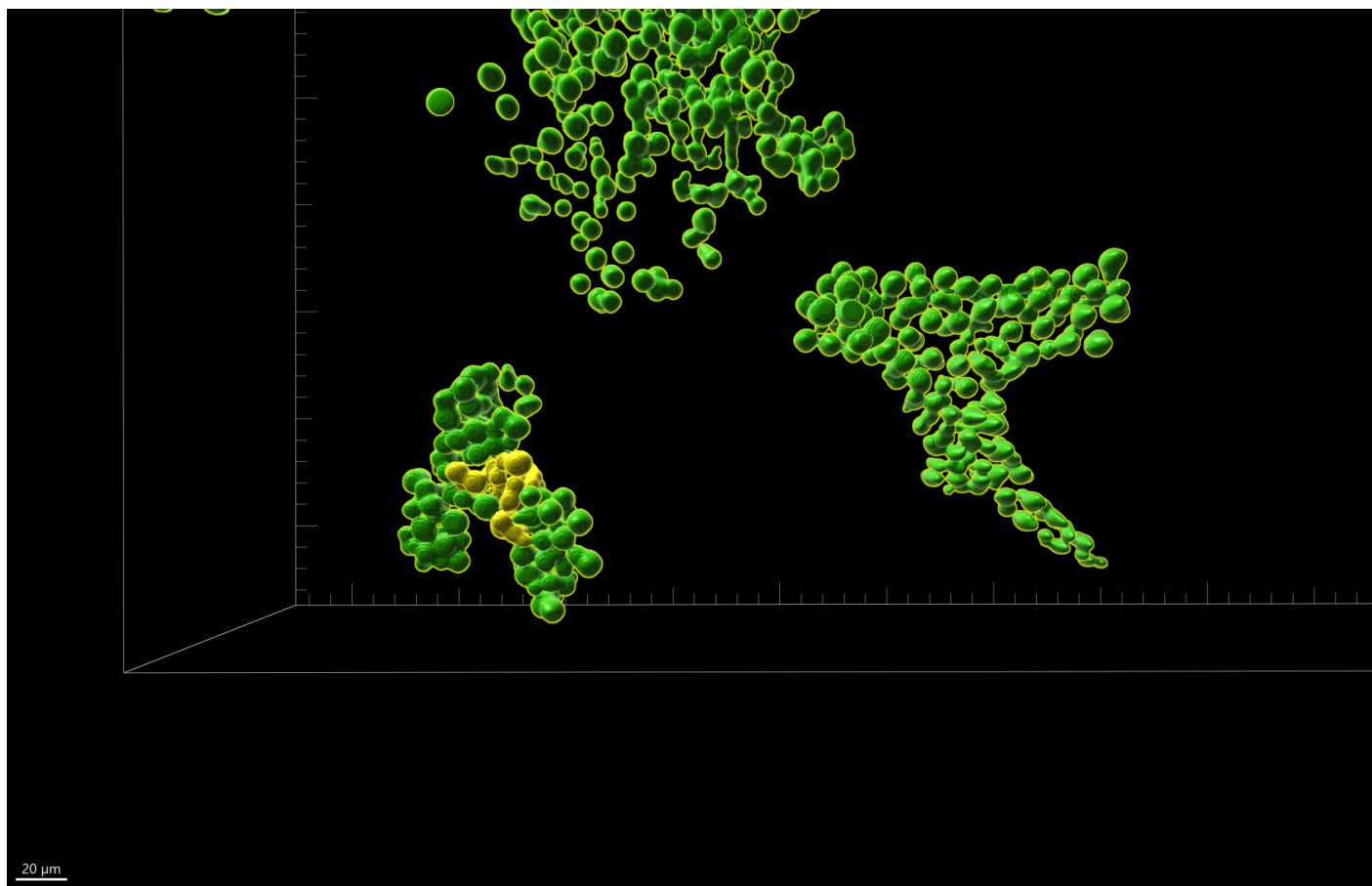
Parameters

Detect Nucleus = false
Detect Vesicle = false
Enable Region of Interest = false
Track Cells (over time) = false
[Cells Detection]
Imported from Surfaces = true
Cell Type = Cell Body
Cell Source Channel = 1
Cell Smooth Enable = true
Cell Smooth Filter Width = 0,500 μm
Cell Background Subtraction = true
Cell Background Subtraction Width = 2,00 μm
[Filter Cells]
"Cell Number of Voxels" above 200

Segmented yeast as Cells:



Segmented yeast as Surfaces:



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