

1.3 Coordinate augmentation features

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2015-07-16

Several coordination augmentation features have been implemented. While the previous two vignettes showed off some of them, this one summarizes all available newly generated coordinate features.

```
features <- c("Image.Count_Cells$",
             "Nuclei.AreaShape_Area$",
             "Nuclei.AreaShape_FormFactor$",
             "Cells.Location_Center_X$",
             "Cells.Location_Center_Y$",
             "Cells.AreaShape_Area$",
             "Cells.Intensity_MeanIntensity_CorrPathogen$",
             "Cells.Intensity_StdIntensity_CorrPathogen$",
             "Nuclei.Intensity_MeanIntensity_CorrPathogen$",
             "Nuclei.Intensity_StdIntensity_CorrPathogen$")
data.red <- PlateData(PlateLocation("J107-2C"), select=features)

## reading plate chache file.
## assuming 9 images per well:
## max length: 3456, fraction of full length features: 0.995
## removing 598 unmatched features.

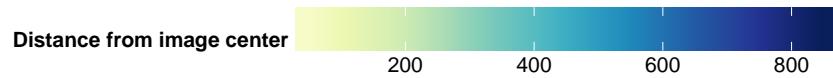
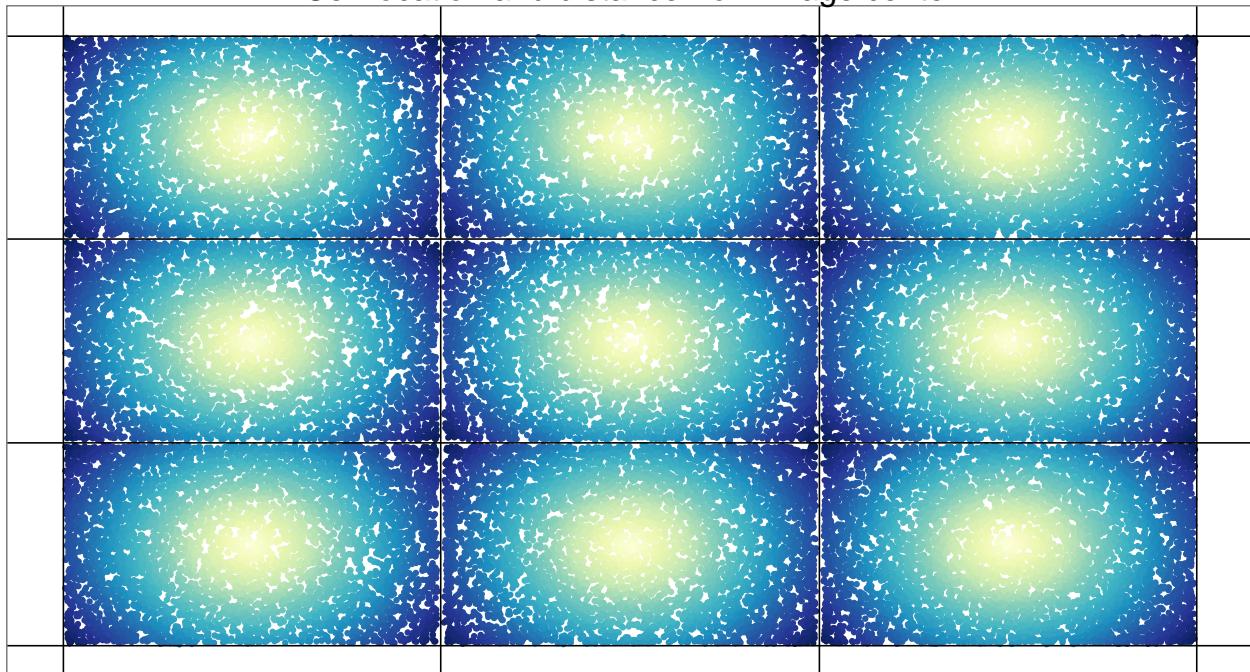
data.aug <- augmentImageLocation(data.red)
data.aug <- augmentCoordinateFeatures(data.aug, 5, c(14, 10), TRUE, TRUE)

## ellipse sizes: 289536, 579072, 868608, 1158144 (within images)
## and: 2635088, 5270176, 7905264, 10540352 (within wells)
## facet size: 99 (x), 104 (y)
## including distance to image center.
## calculating densities.
## Loading required package: rgl
##
## Attaching package: 'rgl'
##
## The following objects are masked from 'package:knitr':
##
##     hook_rgl, hook_webgl
##
## Loading required package: rpanel
## Loading required package: tcltk
## Package `rpanel', version 1.1-3: type help(rpanel) for summary information

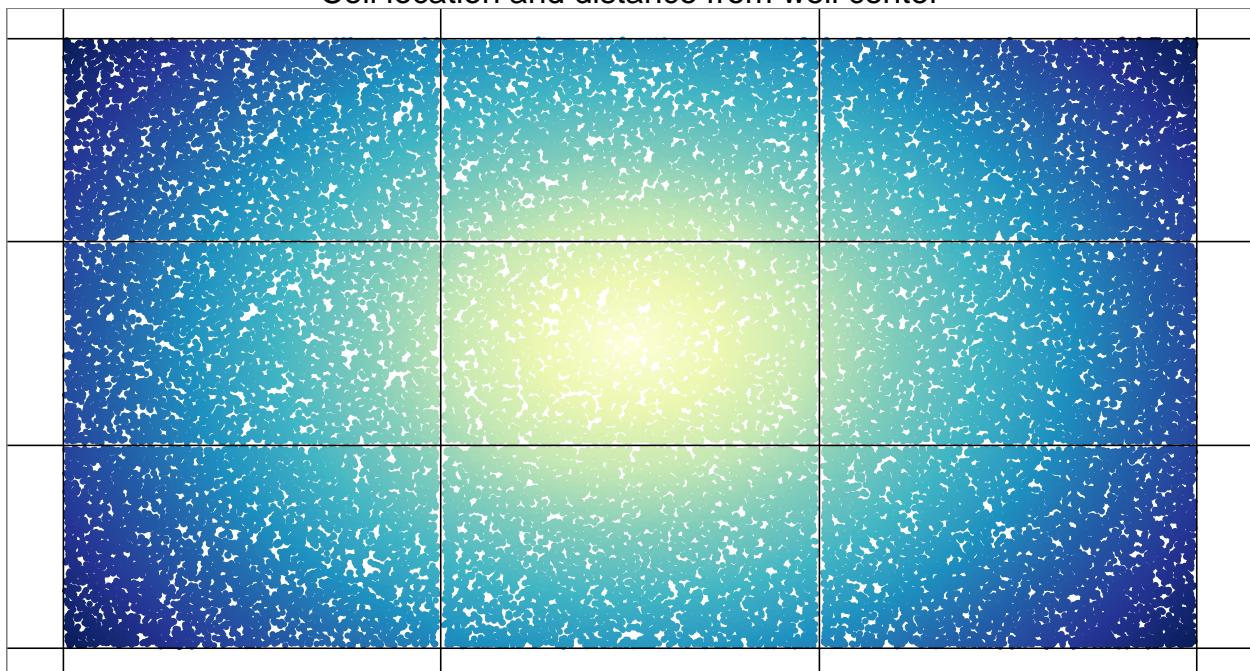
## Warning in FUN(X[[i]], ...): not estimating densities with less than 2
## cells.

## Warning in FUN(X[[i]], ...): not estimating densities with less than 2
## cells.
```

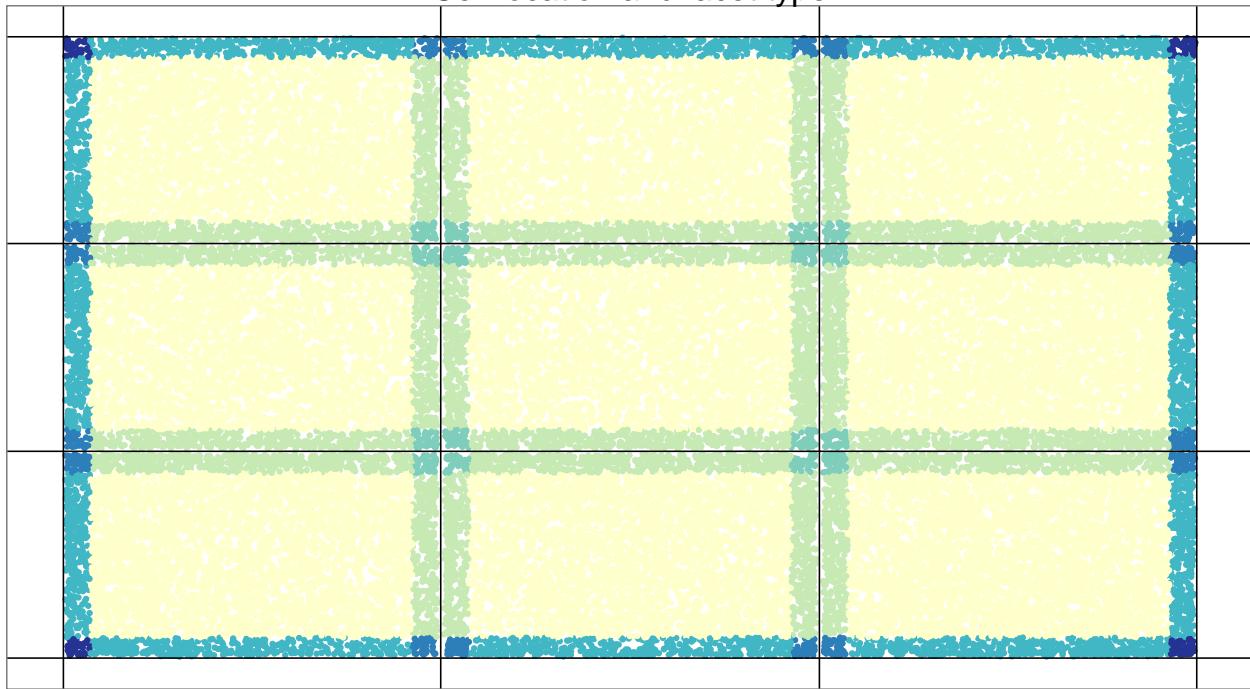

Cell location and distance from image center



Cell location and distance from well center



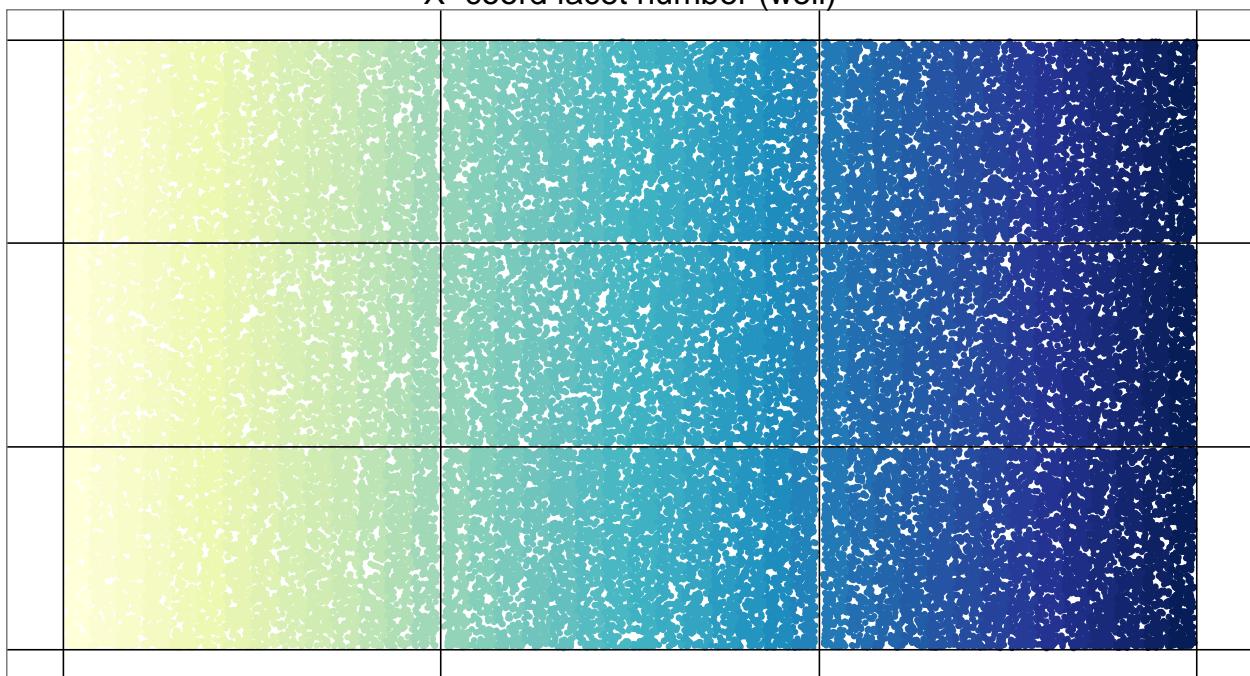
Cell location and facet type



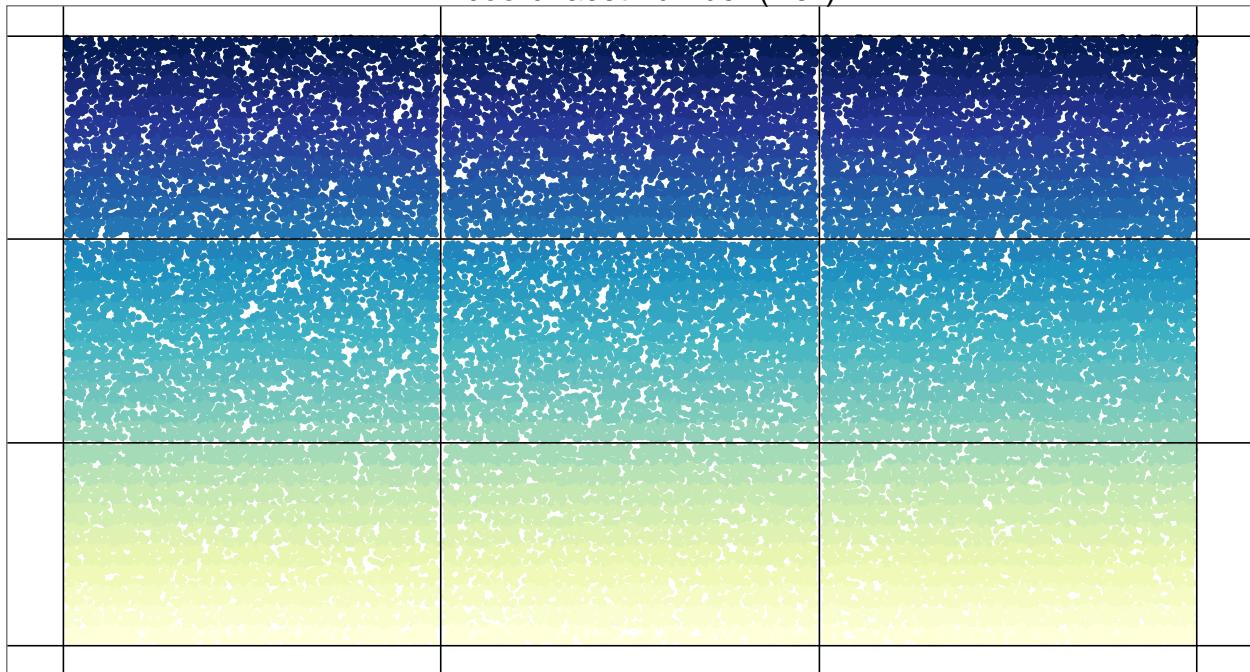
Facet type

no border	inward edge	both borders
inward border	outward border	outward edge

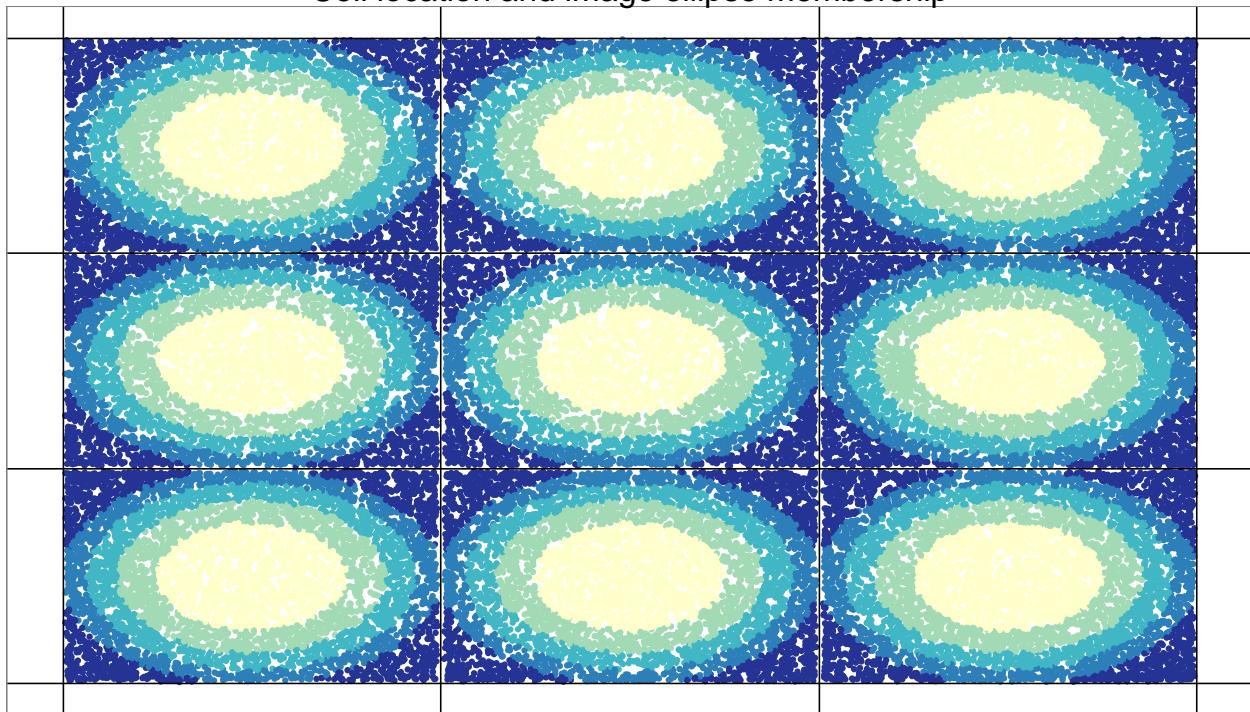
X-coord facet number (well)



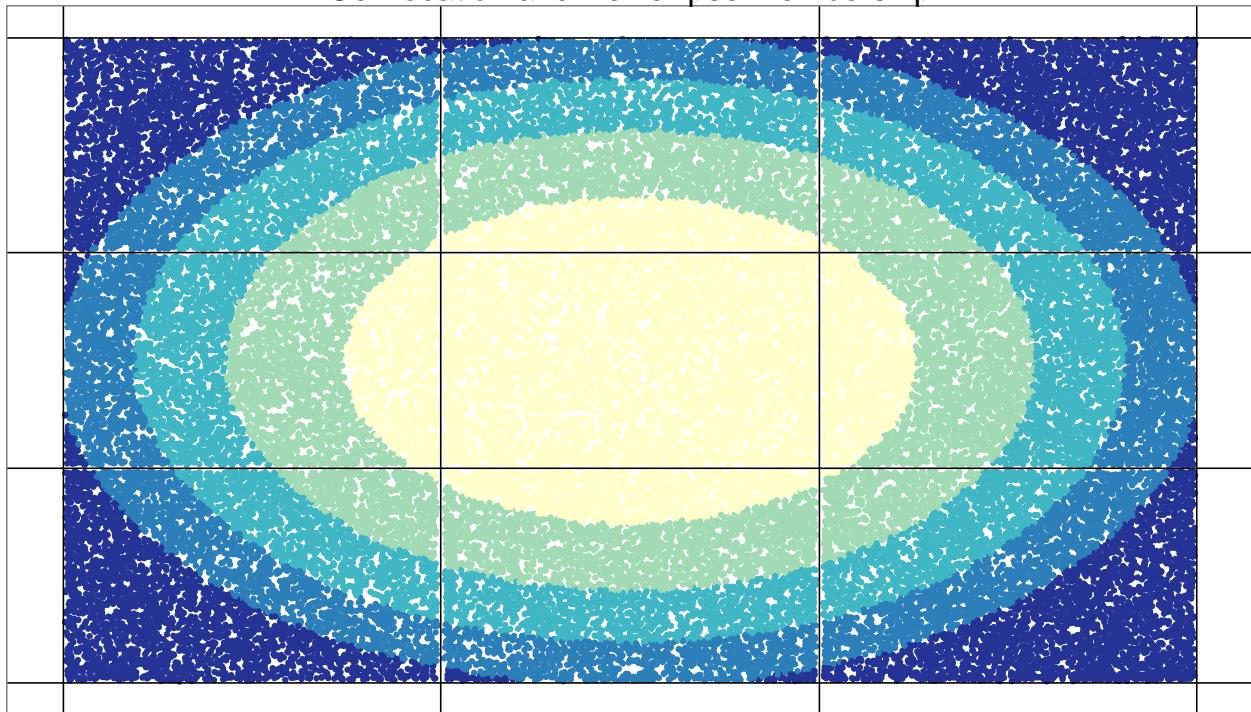
Y-coord facet number (well)



Cell location and image ellipse membership

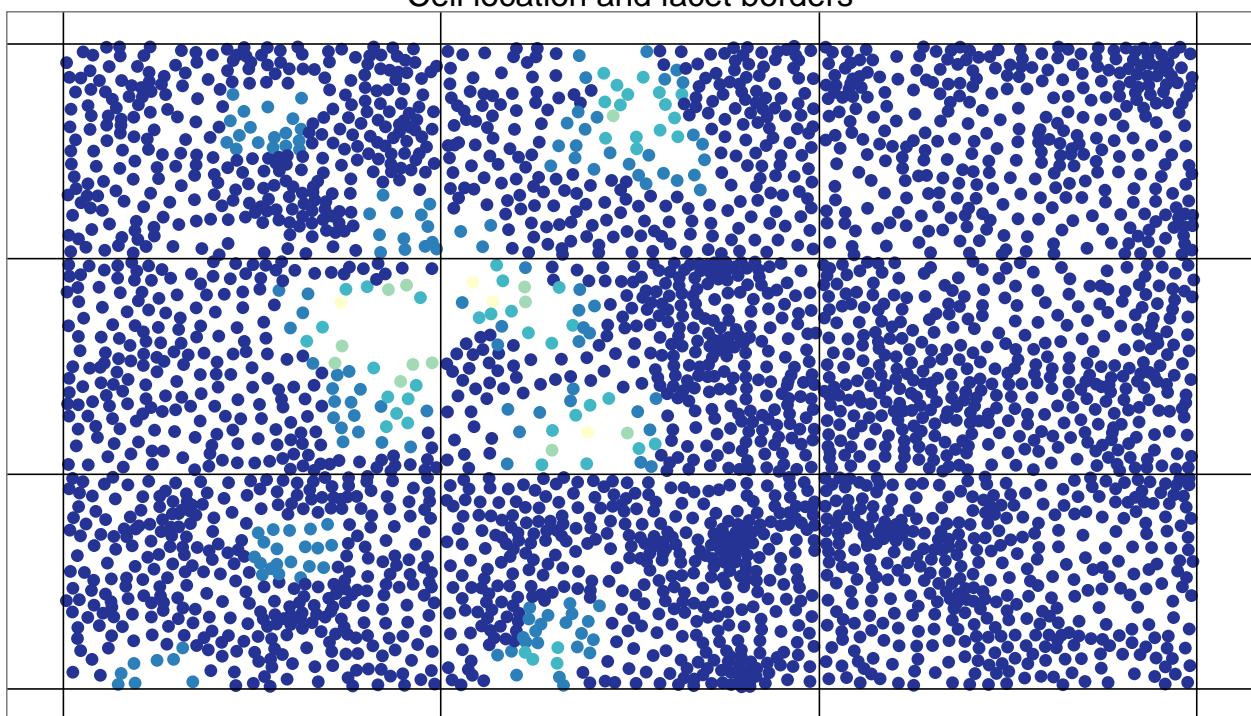


Cell location and well ellipse membership



Ellipses ■ 1 ■ 2 ■ 3 ■ 4 ■ 5

Cell location and facet borders



Non-empty neighbor facets ■ 4 ■ 5 ■ 6 ■ 7 ■ 8

Cell location and cell density

