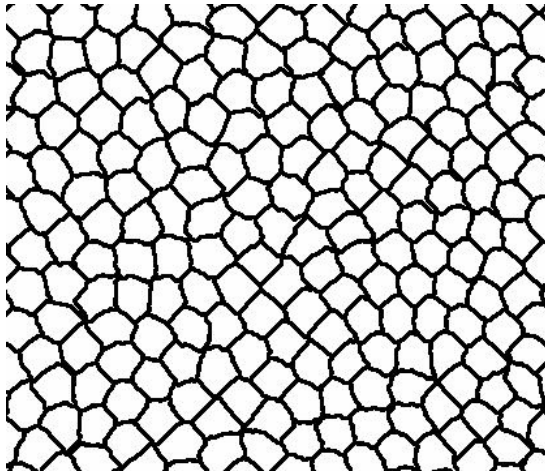


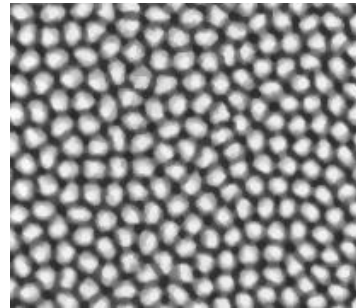
Creating the Nuclear Mask, Continued

By thresholding the watershed domain image, a lattice representing the boundaries between neighboring nuclei is made. After converting the data type of this image, it is possible to multiply this image, pixel by pixel, by the pixel maximum image.

Thresholded Watershed Image



Original Max before smoothing



After multiplication, boundaries between tightly packed nuclei are unambiguous.

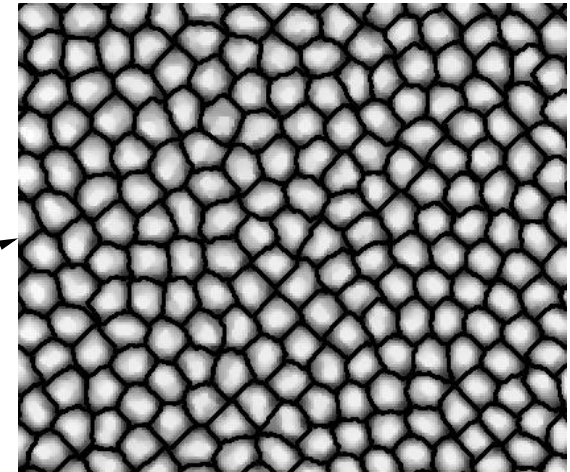
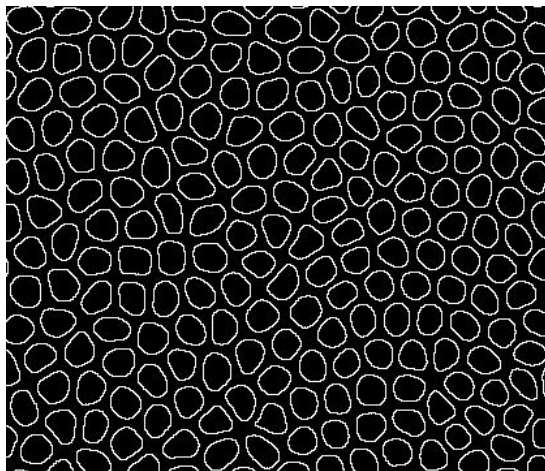
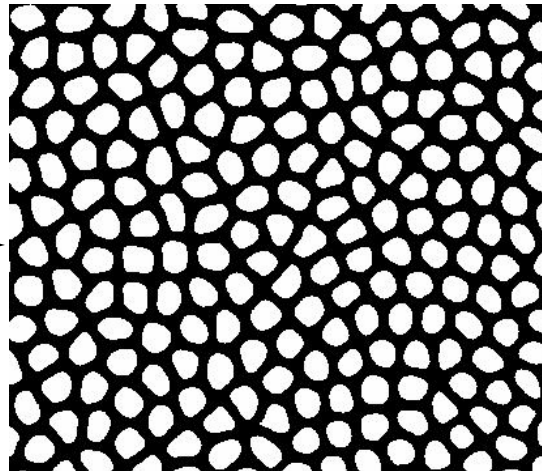


Image Multiplication

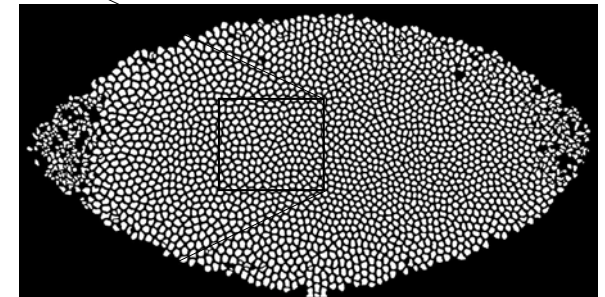
Edge Detection identifies image regions where the maximum brightness gradients are located.



Closing of Holes fills the circles of the nuclear edges with "on" pixels; several cycles of erosion followed by infimum reconstruction removes smaller blobs.



Output: The Final Nuclear Mask Image contains a multitude of white blobs which cover, or mask, each nucleus of the embryo image when the two images are superimposed.



Nuclear Mask is passed to the data collection procedure.

The eroded whole embryo mask is used to gate the result of edge detection to exclude objects at the edge of the embryo from the final output.