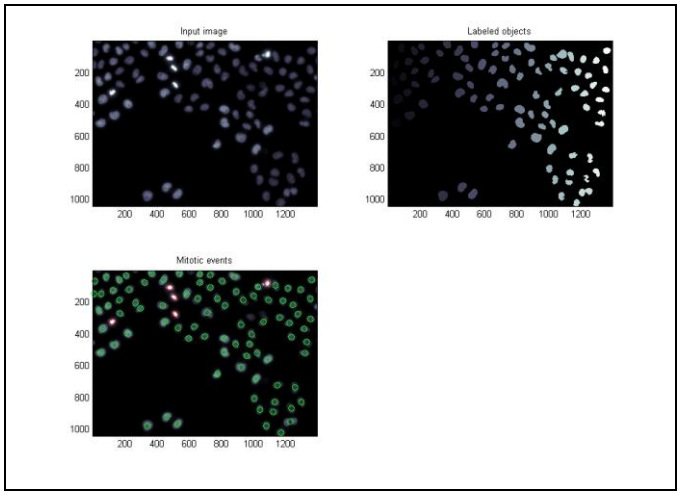
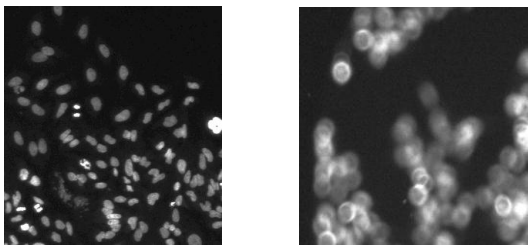
**Feature Extraction (MatLab) – Image Processing Summer School**

1. Detect mitotic events on mitImg1-mitImg3.tif images.
   Hint:
   a. Threshold images and fill holes (**`graythresh`**, **`im2bw`**, eventually manual threshold)
   b. Label objects (**`bwlabel`**)
   c. Extract object properties (**`regionprops`**)
   d. Find those properties, which describes best mitosis (try: area, intensity, std, perimeter), remove too small objects (see **`bwareaopen`** command).
   e. Visualize and store your results

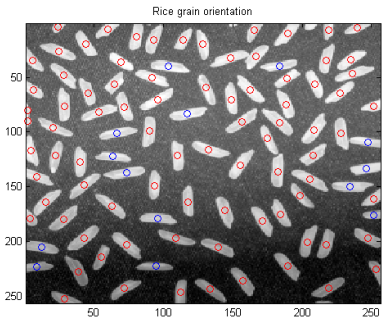
   Homework: separate objects to achieve better statistics (try watershed, or binary morphology).




2. Try to automatically find out-of-focus microscopic images (oof001.tif-oof020.tif). (Hint: extract global std, total variation, or automatic threshold values)



3. Identify rice grains parallel to the horizontal axis (+/- 15°) on rice.png image.



4. Compare textured images. Calculate the gray-level co-occurrence matrices of Texture001.gif-Texture010.gif images (source: Brodatz Textures database). Try the one match best with Texture002.gif. Use sum of squared differences.