**Image Segmentation using Voronoi Partitioning**

* P is a function of *position* and *intensity*
  + As a first go, let’s only consider intensity
* Intensity must hold more weight than position – consider for example a rock solid boundary between two intensity levels. Sites near the boundary must choose definitively the correct material.
  + BUT – what about noise? If you have a pixel on the wrong side of an interface, it needs to figure it out. Could come from refining sites
* For all else equal in terms of position, P must depend on ideal intensities of materials, and somehow use range of acceptable values (and other considerations?) to determine how smoothly probability tails off
* We will assume no extremely pathological cases: for example, 50% of pixels of one intensity, 50% of other
* Are the probabilities problem-dependent? Or should it always behave a certain way, given the ideal value (and possibly range)?
* What should initial seeding be? Just voxel centers?
  + How long would partition take compared to split and merge? Split and merge will require less partitions, more calculations
* When do we need more sites?
  + P of neighboring cells of different materials are close
  + P in cell of material j is low
* Where do we put new sites?
  + Centroid of boundary facets who share two different materials
* What is our stopping criterion for addition of new sites?
  + Based on resolution tolerance? We already have a tolerance for meshing…