Cytoplasmic Activation
Fertilized Frog Egg

1. Egg
   - animal/vegetal poles—radial symmetry

2. Fertilization of egg
   - bilateral symmetry

3. How get three dimensional body plan
   - sperm enters animal pole
   - cortical cytoplasm rotates (30 degrees)
   - core cytoplasm (yolk) does not change
   - Gray crescent evident (bilateral symmetry)
   - rearranged cytoplasmic components

4. Molecular mechanism for movement
   - microtubule assembly—between cortical/inner cyto.
   - ATPase kinesin as motor
   - rotation complete microtubule disassembly