Data to Structural Models

Structural models will be derived from structural data obtained primarily from 3D imaging modalities, including electron tomography, multi-photon and confocal microscopy, and whole-body medical imaging modalities like CT and MRI.

The course will include: (1) automated and manual segmentation and annotation strategies; (2) improving the quality of surface meshes and generating volumetric meshes with GAMer; (3) using Hex-Blender to construct 3D models; and (4) developing high-order finite-element meshes, including patient-specific organ models with Continuity. The resulting meshes will be suitable for a range of biophysical modeling applications from stochastic Monte Carlo and Brownian Dynamics models to subcellular and whole-cell transport models to whole-organ biomechanics and electrophysiology that will be the topics of future NBCR training programs. In consultation with the course organizers, those accepted into the program will be encouraged to bring and work with their own data sets.

To register for this workshop please visit nbcr.ucsd.edu