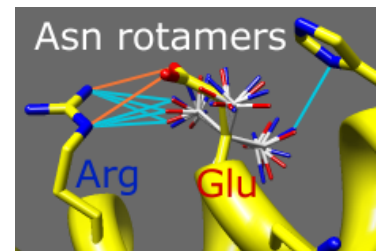


Molecular Visualization with UCSF Chimera: Getting Started

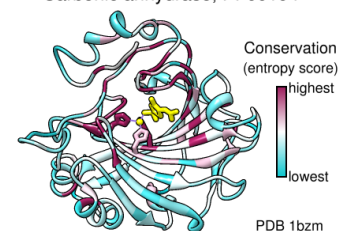
- Presentation (~30 mins):
 - welcome and introductions
 - UCSF Chimera, the big picture
- Hands-on tutorial:
 - **Getting Started - Menu Version** (~35 minutes)
- Optional tutorial (available from **Help** menu):
 - **Getting Started - Command Version** (~25 minutes)

General molecular visualization and analysis (sessions 1 & 2):

- **many display styles and levels of abstraction** (from atomic detail to ribbons to surfaces)
- chemical perception, hydrogen addition, charge assignment
- high-quality H-bond, contact, and clash detection
- measurements: distances, angles, surface areas, RMSDs
- amino acid rotamers, Ramachandran plot
- bond rotation, structure building, **multimer assembly**
- structure superposition and morphing
- showing properties with colors and “worms”
- molecular dynamics trajectory playback and analysis
- interface for screening docking results
- web fetch from numerous databases, including PDB, EDS, EMDB, ModBase, CASTp, Pub3D, VIPERdb, and UniProt



Carbonic anhydrase, PF00194

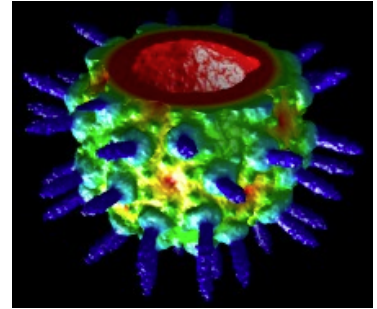
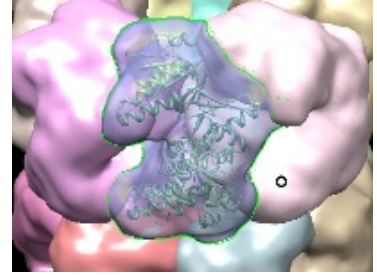


Sequence-structure tools (session 3):

- display of individual sequences and multiple sequence alignments
- sequences automatically associate with structures
- superimposing structures with or without pre-existing alignments
- generating structure-based sequence alignments from superpositions
- calculation of sequence and structure conservation per alignment column
- protein BLAST search via web service
- Modeller comparative modeling via web service or local installation

Electron density maps and other "volume data" (session 5):

- many formats, display as mesh or **solid isosurfaces**
- interactive threshold adjustment
- map zoning around atoms of interest or pseudoatomic "markers"
- many options for smoothing, filtering, segmenting, and editing maps
- fitting of atomic coordinates to maps and maps to maps
- measurements: isosurface area, enclosed volume, map symmetry
- volume planes, time series playback, morphing



Images and movies for presentation and publication (sessions 6 & 7):

- visual effects including fog, silhouettes, shadows, and special backgrounds
- convenient presets (combinations of display settings)
- 2D labels: text, symbols, arrows, and color keys
- structure-derived geometric objects: axes, planes, centroids, ellipsoids
- special nucleotide representations
- morphing and trajectory playback integrated with movie recording

