

**Required Categories for Job Requisition:**

1. **Job Summary**
2. **Department (RBVI?) Description**
3. **Required Qualifications**
4. **Preferred Qualifications**

**Also need suggested job classification, e.g., Bioinformatics Programmer 2 or 3?**

**Job Summary**

The UCSF Resource for Biocomputing, Visualization, and Informatics has an immediate opening for a software developer to join our team and help us develop the next generation of tools for interactive biological visualization and analysis. UCSF ChimeraX is used by researchers around the world to visualize macromolecular structures, electron microscopy maps, and light microscopy images using traditional displays, stereo displays, and virtual reality. We are looking to enhance ChimeraX's capabilities in the areas of medical imaging (e.g. DICOM images), cryo-EM and light microscopy analysis (e.g. segmentation), and providing support for outside developers. In addition, recognizing that scientific software often requires computational resources that exceed a typical desktop, we would like to expand our web services offerings to ChimeraX users.

**Department Description**

Established in 1970, the UCSF Resource for Biocomputing, Visualization, and Informatics (RBVI) and its precursor, the Computer Graphics Laboratory (CGL), develops cutting-edge interactive software tools and advanced web-based computational resources that provide integrated visualizations and analyses of molecular structures and related nonstructural biological information.

RBVI's tools can be applied to diverse types of biomolecular data, including atomic-resolution coordinates, 3D density maps and light microscopy data, and protein and nucleic acid sequences, annotations, and networks. We focus on unmet software needs for basic and applied biomedical research using highly trained and talented staff, with excellent interdisciplinary knowledge in structural biology, computer visualization, software engineering, and data science. Our primary efforts are in interactive visualization and analysis of structures of molecules and molecular assemblies, protein sequence-structure-function relationships, and network representations of protein similarity, binding interactions, and biological pathways. These areas are critical for addressing important biomedical problems related to health care and disease treatment and prevention.

**Required Qualifications**

- Bachelor's degree in STEM area or equivalent experience
- Proficiency in programming using the Python programming language
- Demonstrated skills in object oriented programming
- Basic background in biological science
- Interest in interactive visualization and graphical analysis

- Interest in applying computational methods to biological/biomedical research problems
- Demonstrated ability to work collaboratively in a team and carefully coordinate development of software with other programmers
- Demonstrated ability to use and apply professional coding practices, such as versioning (git), issue tracking, regression testing, code release cycles, multiple platform support, etc
- Desire to interact and collaborate with scientists/users of our software, both UCSF and remote

### **Preferred Qualifications**

- Background in biological principles of living organisms, including the relationships among sequence, structure and function
- Programming experience with one or more of: C++, Javascript, HTML5, Qt, OpenGL, REST
- Experience with interactive molecular graphics and modeling software
- Familiarity with the principles of structural biology and/or electron microscopy
- Experience with medical imaging data sets and analysis of these data sets
- Good group presentation and writing skills
- Ability to work onsite (UC San Francisco, Mission Bay campus). Work from afar considered for highly experienced candidate.

Suggested job classification: Bioinformatics Programmer 3

### **Job Description:**

- ChimeraX application software development
  - Medical imaging
  - OpenGL rendering of molecules
  - 3D light microscopy (e.g. Hubmap)
  - Cryo-EM (segmentation, validation & integration Phenix R24)
  - Developer support
- Web service implementation

### **Minimum requirements:**

- Bachelor's degree in STEM area or equivalent experience

### **Required skills:**

- Proficiency in programming using the Python programming language
- Demonstrated skills in object oriented programming
- Basic background in biological science
- Interest in interactive visualization and graphical analysis
- Interest in applying computational methods to biological/biomedical research problems
- Demonstrated ability to work collaboratively in a team and coordinate development with other programmers

- Demonstrated ability to use and apply professional coding practices, including versioning (git), issue tracking, regression testing, code release cycles, etc
- Ability to interact and collaborate with the scientific users of our software

**Preferred skills:**

- Basic background in biological principles of living organisms, including the relationship among sequence, structure and function
- Programming experience with one or more of: C++, Javascript, HTML5, Qt, OpenGL, REST
- Experience with interactive molecular graphics and modeling software
- Familiarity with the principles of structural biology and/or electron microscopy
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