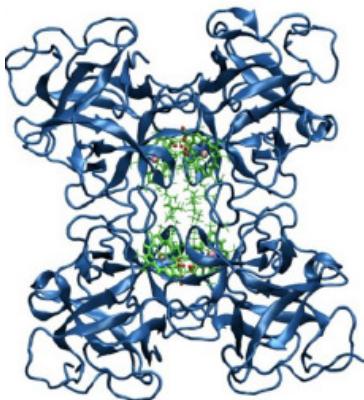


**Graduate student position will be available, starting in the Fall 2023 / Winter 2024**

**(preferred), in the groups of Professors Valter Zazubovits / Re Mansbach**

**Department of Physics, Concordia University, Montreal, Canada.**



We are an experimentalist (VZ) and computational biophysicist (RM) interested in a variety of topics. VZ group in particular is studying photosynthesis and related phenomena, mostly by means of optical spectroscopy. We also are interested in combining experimental and theoretical / computational approaches.

**Figure:** WSCP protein we are modeling currently.

#### **Molecular Dynamics Simulations of Pigment-protein Complexes Involved in Photosynthesis.**

Experimental techniques such as single molecule spectroscopy and persistent spectral hole burning offer information on protein energy landscapes and available conformational changes. These small conformational changes manifest in optical experiments as shifts of the spectral lines of the pigment molecules embedded into the protein. However, it is not known what particular structural elements in the proteins are responsible for small structural changes / spectral shifts. MD simulations starting from known protein structures and related computational techniques may answer this question. We are looking for a graduate student with primary interests in theoretical (bio)physics, computer programming and computations to conduct MD simulations and possibly to also implement more advanced approaches to modeling our experimental data and QM tunneling in general. The project may involve collaboration with researchers at the University of South Carolina, USA. Interest in optical spectroscopy experiments is a plus.

Concordia Department of Physics is a growing department in a university with rapidly increasing rating. We offer research-based M.Sc. and Ph.D. programs. Our faculty members conduct research in the areas of Condensed Matter Physics (theoretical and experimental), Molecular Biophysics, Medical Physics / Imaging, Photonics, Theoretical High Energy Physics, Computational Physics and Physics Education.

Successful applicants will be offered financial packages consisting of RA, TA and various awards of at least 20,000 CAD per year (often more), for 4 years (Ph.D.) or 2 years (M.Sc.). International students will be offered tuition remissions or other awards to compensate for the international tuition fees.

Please contact Professor Valter Zazubovits; [valter.zazubovits@concordia.ca](mailto:valter.zazubovits@concordia.ca) for more information.