



Canadian Association
of Physicists

Association canadienne
des physiciens et physiciennes

Contribution ID: 3344 Type: **Oral Competition (Graduate Student) / Compétition orale (Étudiant(e) du 2e ou 3e cycle)**

(G*) Vesicle Viewer: Online visualization and analysis of small-angle scattering from lipid vesicles

Wednesday, 8 June 2022 15:15 (15 minutes)

Large volumes of complex experimental data require time, expertise, and equally complex tools to process. This creates a barrier, where experienced researchers and new students alike lack the resources required to maximize the utility of their results. Vesicle Viewer is a free online tool designed to break down those barriers, and assist researchers at all levels in processing critical information contained in small-angle scattering (SAS) data.

Small-angle X-ray and neutron scattering are among the most powerful experimental techniques for investigating the structure of biological membranes. Vesicle Viewer utilizes a modified scattering density profile (SDP) analysis called EZ-SDP in which key bilayer structural parameters, such as area per lipid and bilayer thickness, are easily and robustly determined. Notably, included is a model able to describe an asymmetric bilayer, whether it be chemically or isotopically asymmetric.

Through the strategic application of well-established python libraries, this easy-to-use data visualization tool can allow researchers at any level to take full advantage of their SAS data and maximize the use of limited resources.

Find this web-based application, available for anyone to use, here: <https://vesicleviewer.dmarquardt.ca/>.

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Session Classification: W3-3 Cell and Membrane Biophysics (DPMB) | Biophysique de la cellule et des membranes (DMPB)

Track Classification: Technical Sessions / Sessions techniques: Physics in Medicine and Biology / Physique en médecine et en biologie (DPMB-DPMB)