

# Dragonfly Workshop Program

December 12 and 13, 2018

Room ABB 163, McMaster University

Invited Presenter: Dr. Nicolas Piché, CSO of Object Research Systems, Inc.

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8:45	<b>Registration</b>
9:00	<b>Part One: Basics of Dragonfly</b> 1.1 Load 3D image data 1.2 Navigation basics: 2D MPR & 3D volume rendering (window leveling, LUT, lighting/shadow/focus, etc.) 1.3 Navigation advanced: clip box, shape, visual plane 1.4 Presentation: annotation, animation, screenshot, overlay
9:45	<b>Part Two: Basic Segmentation Tools</b> 2.1 Basic ROI tools (range, brushes, snap, smart grid, etc.) 2.2 ROI operations (boolean, morphology, etc.) 2.3 Otsu & Watershed
10:15	<b>Break</b>
10:30	<b>Part Three: Image Processing</b> 3.1 Image filtering (smoothing, edge detection, etc.) 3.2 Artifact correction (curtain/strip, shading, etc.) 3.3 Slice Registration for FIB-SEM
11:30	<b>Part Four: Quantification &amp; Multi-ROI Analysis</b> 4.1 Connectivity-based Multi-ROI 4.2 Quantification measurements 4.3 Classes: selection of objects
12:15	<b>Lunch</b>
13:00	<b>Part Five: AI-based Tools</b> 5.1 Segmentation Classifier with Machine Learning <ul style="list-style-type: none"><li>- Pixel based or region based</li><li>- Random forest and more engines</li><li>- Features</li></ul> 5.2 Deep Learning <ul style="list-style-type: none"><li>- Import/build a model</li><li>- Train the model</li><li>- Demos:<ul style="list-style-type: none"><li>• Super Resolution</li><li>• Denoising</li><li>• Segmentation</li></ul></li></ul>
15:00	<b>Break</b>
15:15	<b>Part Six: More add-on modules</b> <ul style="list-style-type: none"><li>- Auto Process</li><li>- Macro builder/player</li><li>- Mosaic stitcher, dataset merger</li></ul>
16:15	<b>Final Words</b>

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