1. Introduction

nPOD utilizes two databases to provide information about our donors and allow for online sample ordering. This document gives a basic guide for how to navigate the Online Pathology database and use it to select cases of interest.

We recommend using our Online Pathology site (Aperio eSlide Manager) to view *basic* donor information along with slides that have been screened by the nPOD Organ Processing and Pathology Core (OPPC). Use DataShare to order samples and view *detailed* information about each donor's admission and clinical history, as well as lab results, HLA, demographics, and more. **Please note:** DataShare is only available to investigators with an approved application (Apply to Join nPOD).

Online Pathology is a great resource for choosing paraffin and OCT blocks of interest; OPPC has scanned H&E slides for nearly all available blocks, as well as slides stained by IHC for insulin, glucagon, somatostatin, CD3, CD45, and Ki-67. Once you have chosen cases and sample blocks, use DataShare to request slides, vials, or cells.

2. nPOD Online Pathology – Aperio eSlide Manager

2.1. After you log in to Online Pathology, you will see both icons and menu options listing Cases, Specimens, and eSlides (Figure 1). The *Cases* option shows all nPOD cases as well as cases from other sources (various alphanumeric IDs, see Clinical History or Supplemental Notes for source). The *Specimens* option lists sample types linked to cases, but is not a good place to search for information or slides. Opening *eSlides* displays all slide images and uploaded snapshots. Clicking on *Slide ID* will display case details while clicking on *Image ID* will open the slide image in Aperio WebScope or ImageScope (Figure 3).
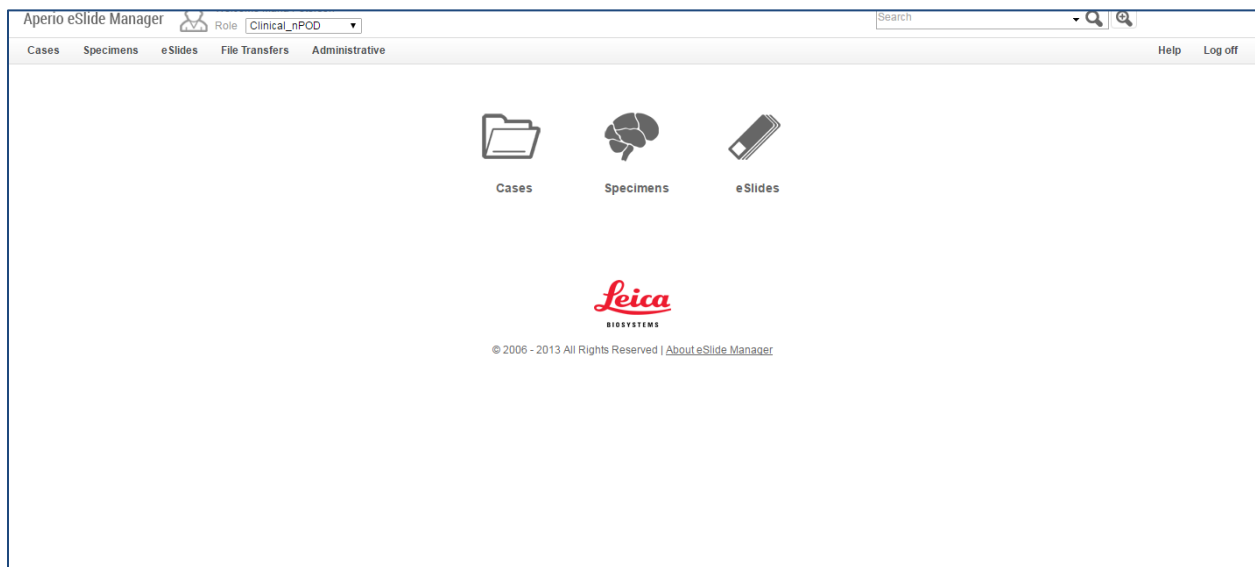

Figure 1. Main Page

2.2. Open Cases by clicking on either the icon or menu option. nPOD Cases are listed by Case ID (6xxx) and may be sorted by any of the column headings (Figure 2).

Figure 2. Cases Main Page. Database can be sorted by clicking on column headings or the Sort link on the top left of the page.

Figure 3. eSlides Main Page. Clicking Slide ID (left, yellow box) will open case details for each slide. Clicking Image ID (right, red box) will open the slide image in either WebScope or ImageScope. You may need to scroll all the way to the right to see Previous/Next page buttons and Image ID.

2.3. Open a Case by clicking on the folder icon to view case demographics, specimens, and slides (Figure 4). Click on the "+" to open a Specimen and view slide thumbnail images.

Figure 4. Case Details Page

2.4. To open an image, click on the Image ID (Figure 5). To open multiple images at one time, click on each check box, then choose "View Images" on the specimen-level menu bar. Opening images will automatically launch ImageScope, WebScope, or the default image viewing program.

Note: For Mac Users, WebScope will be automatically launched. For PC Users, please download and install free Aperio ImageScope software. ImageScope is compatible with Firefox 47 and Internet Explorer 9 or 11. If you have Firefox 48, you will need to downgrade to version 47 and disable the auto-update option in order to use ImageScope. Otherwise, images will open automatically in WebScope.

Figure 5. Viewing images from eSlides in Case Specimen folder. Use checkboxes to open multiple images or click on Image ID to open a single image.

2.5. The advanced search function in eSlide Manager allows you to search for eSlides, Cases, or Specimens by a number of fields. Click the 🔍 icon in the upper right corner of the screen, then use the drop down menus to choose your search criteria. In the figure below, the search will show all eSlides stained for Ki67+Insulin for all cases where the donor is T1D, older than 15 years old, with a BMI less than 25 kg/m^2 (Figure 6). Searches may be saved for future use.

Figure 6. Advanced search for eSlides, Cases, and Specimens in eSlide Manager

3. Viewing eSlides in ImageScope

3.1. ImageScope and WebScope allow the user to change the image magnification (using zoom slider or mouse scroll wheel), generate annotations, take image snapshots, and synchronize multiple images. Many of these features may be turned on or off in the 'Image' or 'View' menus or using the ribbon icons.

3.2. The two images open in Figure 7 are H&E and Ki67+Insulin from consecutive sections of the same block. Use 'Keep Open' under the 'Image' menu and 'Tile Horizontal' under the 'Window' menu to view images in the

configuration seen below. Then use the manual or smart synchronize button to pan or zoom in both images at the same time.

3.3. In the figure of ImageScope below, 1= zoom slider, 2= rotate image (open from 'Image' menu), 3= image thumbnail, 4= magnifier (use the mouse to hover over the area desired for magnification), 5= take/e-mail snapshot and image adjustment, 6= synchronize images and show/hide thumbnail, magnifier, zoom, 7= annotation tools (Figure 7).
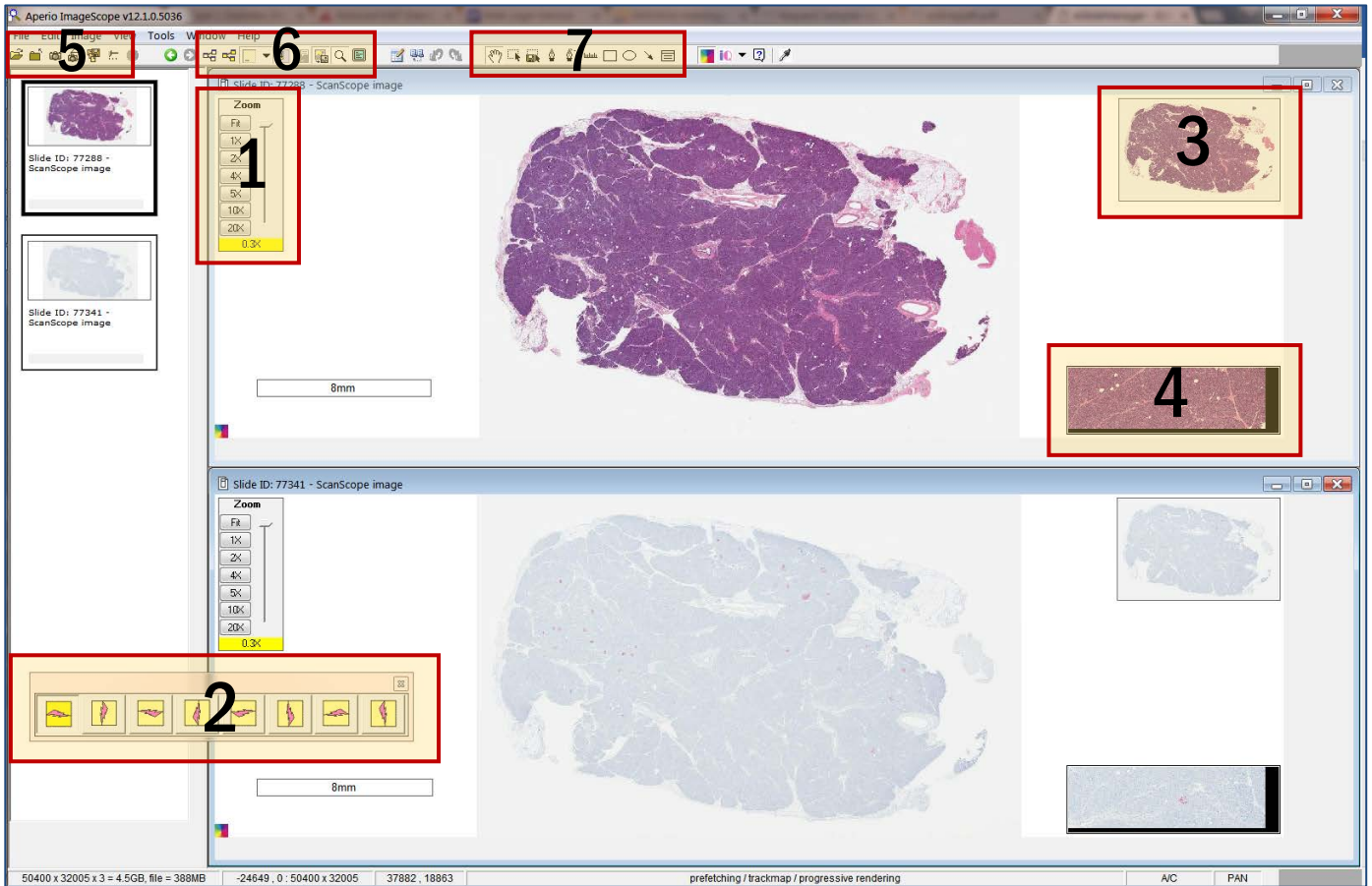

Figure 7. ImageScope features. 1= zoom slider, 2= rotate image, 3= image thumbnail, 4= magnifier, 5= save snapshot, 6= synchronize images and show/hide thumbnails, 7= annotation tools.

3.4. In the figure of WebScope below, 1= zoom slider, 2= save snapshot, 3=annotation tools, 4= image thumbnail, 5= open in ImageScope (Figure 8).
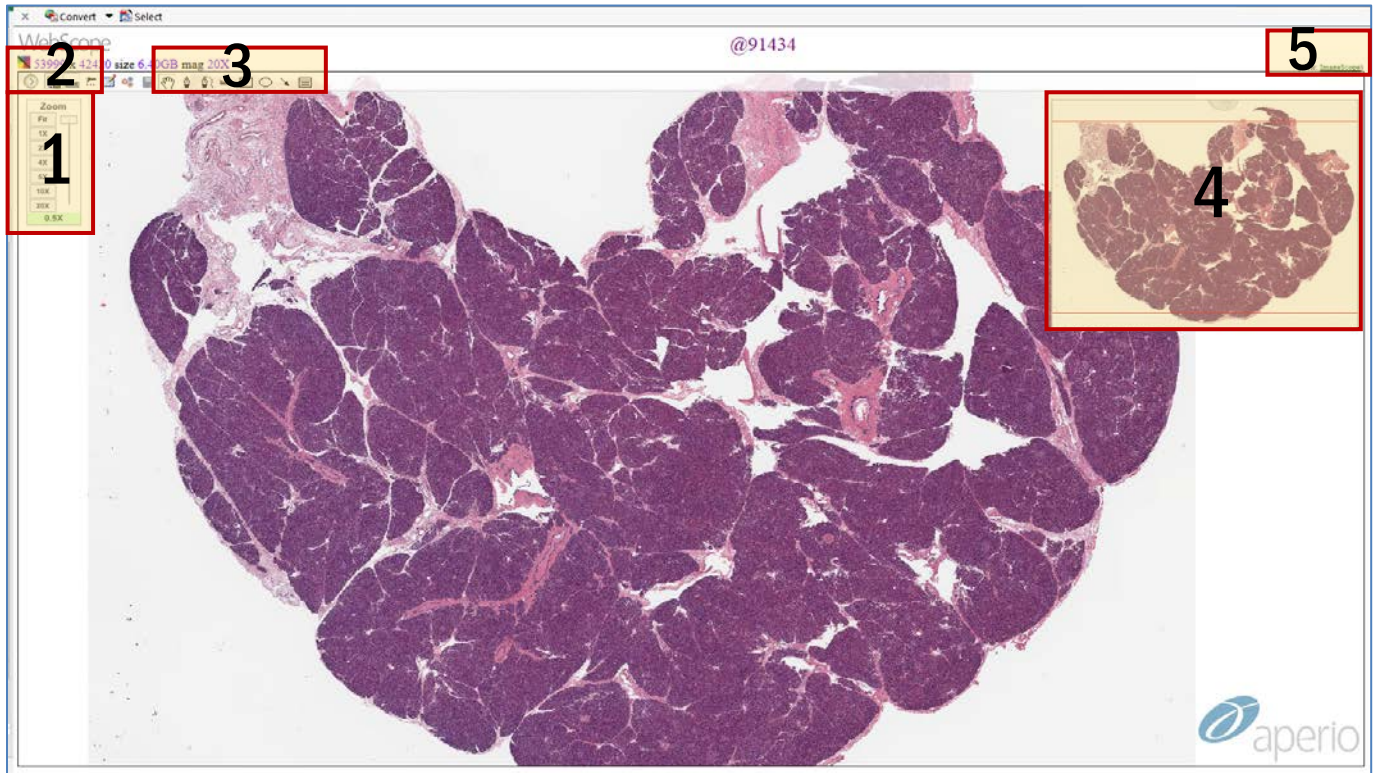

Figure 8 WebScope features. 1= zoom slider, 2= save snapshot, 3=annotation tools, 4= image thumbnail, 5= open in ImageScope.

Please note:

If images or data from nPOD's Online Pathology database are used in your publications, please use standard nPOD nomenclature to refer to the images. Please also include an acknowledgement of the nPOD project in the manuscript. For more information, please review our Terms of use for nPOD Online Pathology Images. Furthermore, you are highly encouraged to seek institutional ethics or IRB review committee regarding any study you undertake when utilizing the information from this database for your research.