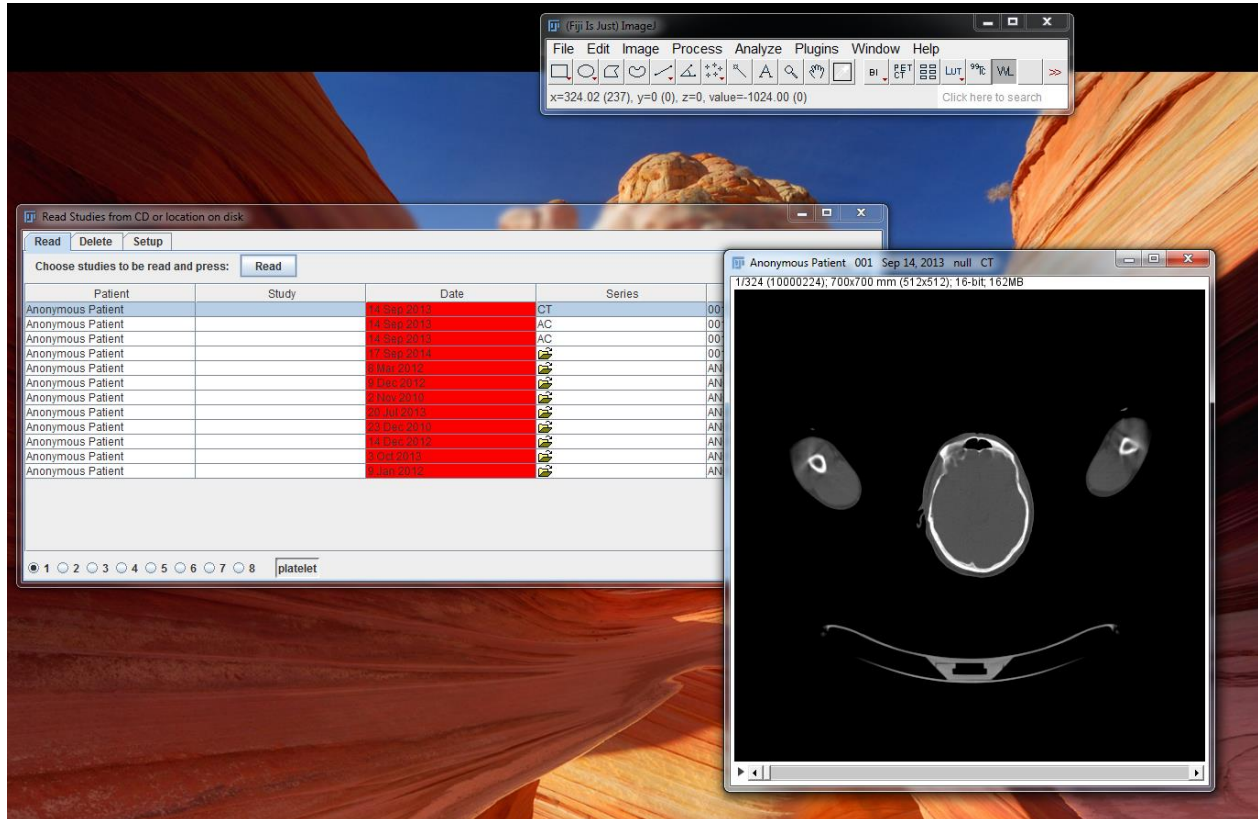


# ***CT Based Segmentation***

## ***Using Beth Israel Plugin for Fiji***

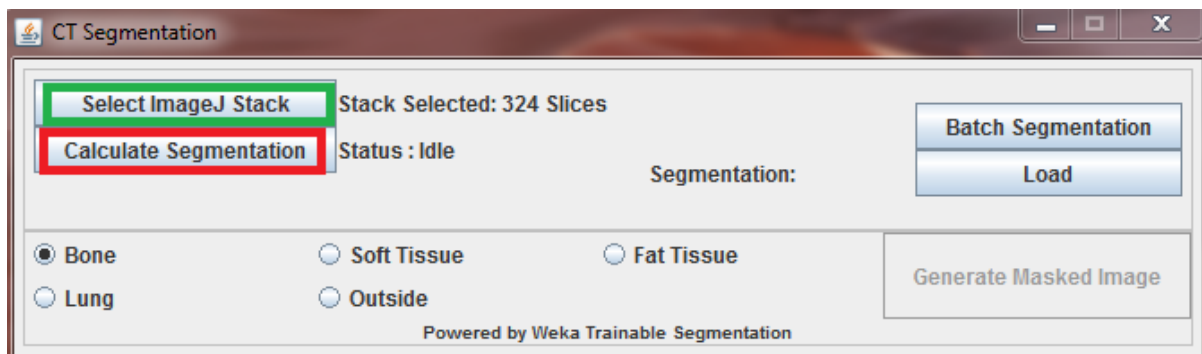
### **1) Open the CT sequence of the PET/CT in Fiji**

Open the CT sequence using “Read From CD” (or “BI database”, see our [manual](#))



### **2) Open CT Segmentation Tool**

Go to Plugin => Tools => CT\_Segmentation

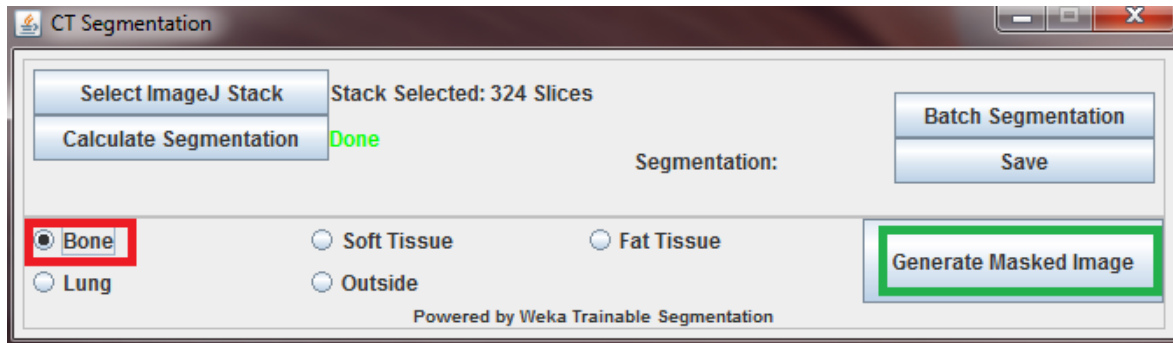


Click “Select ImageJ Stack” to select the original CT to process (the last stack which get focus is selected)

Click “Calculate Segmentation” to do segmentation calculation.

The calculation time is around 2 seconds / slice (in this example the calculation time was around 10 minutes)

### 3) Generate the segmented CT



Once calculation done select the tissue you want to retrieve the segmentation (here bone tissue)

And click on “Generate Masked Image”

A new stack will be opened with only the wanted tissue segmented (let this stack opened).

The “Save” Button allows you to save the segmentation result to open it later without reprocessing the segmentation calculation.

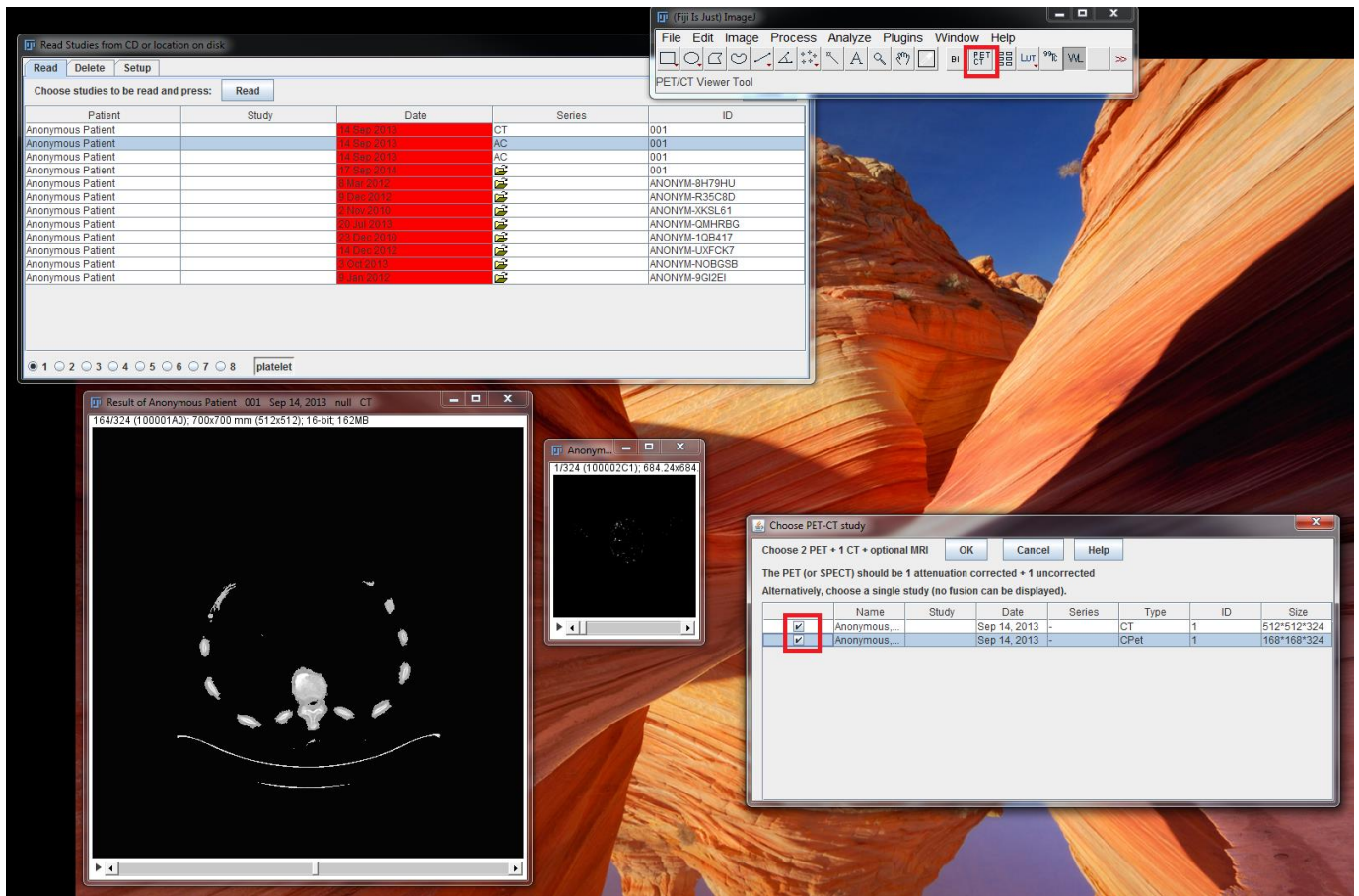
Example of Bone tissue segmentation and Fat tissue segmentation (non-segmented voxel are assigned to -1000UH):



#### 4) Open PET/CT Viewer with the segmented CT and make your final PET segmentation

Open manually the original PET sequence using “Read From CD”

Open the PET/CT Viewer and select the PET and the modified CT

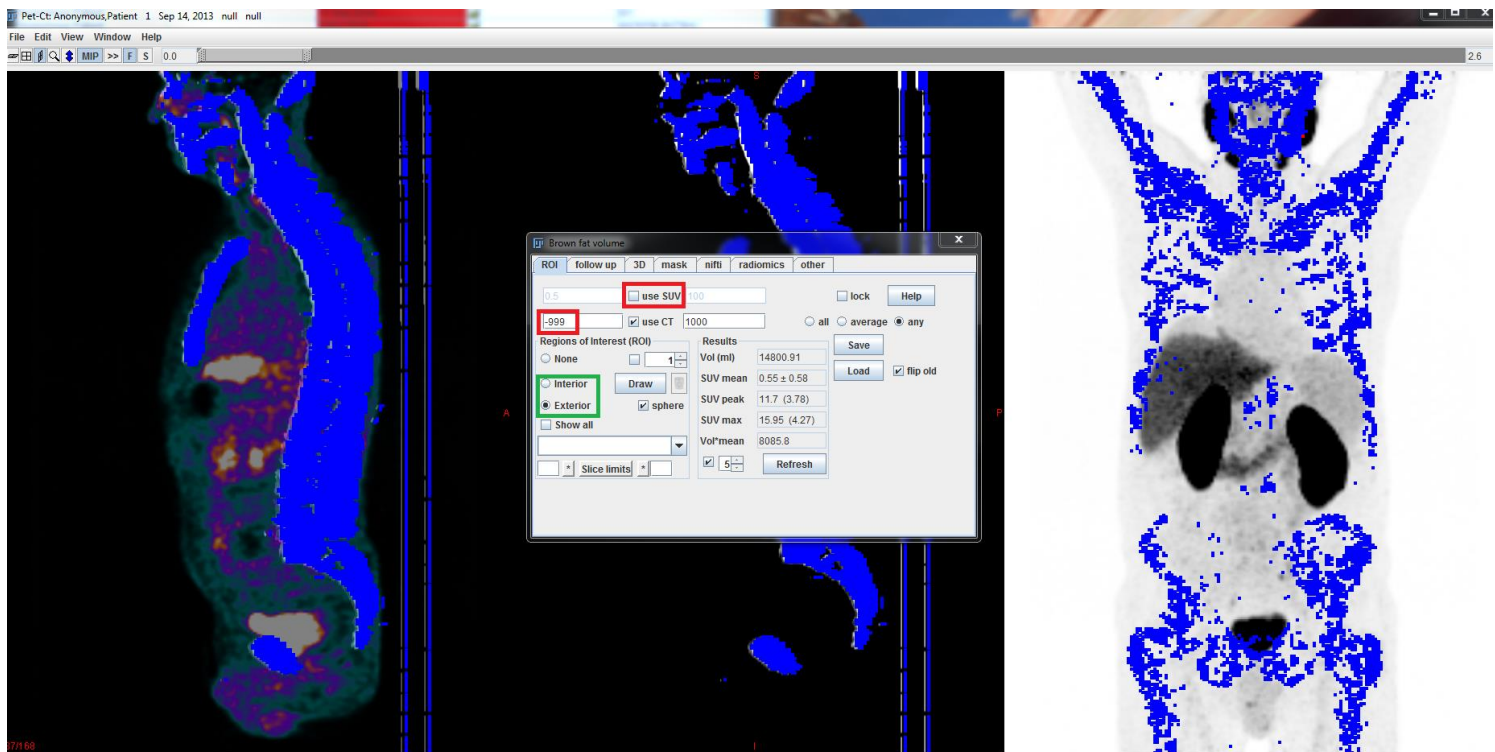


In the Viewer go to “Edit” => “Brown Fat, ROIs” to open the quantification tool

Set the CT limit from -999 to +1000 (to exclude the -1000UH value corresponding to non-segmented voxels)

You can add a SUV threshold to select voxels being segmented on the CT + reaching a particular SUV Value.

You can either use “Interior” make thresholds in ROIs or “Exterior” make the threshold on the full image except ROIs limited area.



## 5) Tips :

To load a previously saved segmentation, open “CT\_Segmentation” Load the original CT stack and click “Load” button to read the NRRD file containing the segmentation result (and then generated the wanted tissue CT segmented image).

You can use the “Batch” button to select up to 5 CT stacks to segment. The segmentation will be automatically processed for all CTs and result will be automatically written in NRRD files to be later loaded (saving you from segmentation waiting time).

If this tool gives you ideas of new applications or enhancements please [contact us](#).