```mathematica
(***Input identifying information***)

projType = ToString[Evaluate[Input["Input the projection neuron type (i.e CC or CT)"]]];

mouse = ToString[Evaluate[Input["Input the mouse identity (e.g. Mouse123)"]]];

firstSection = ToString[
    Evaluate[Input["Input the number of the first histological section in the series"]]];

lastSection = ToString[
    Evaluate[Input["Input the number of the last histological section in the series"]]];

sectRange = Range[firstSection, lastSection];

(********************************************)
```

```mathematica
In[ ]:= laminarFluorPerSection = Table[Drop[Flatten[Import[
          StringJoin["S:/Imaging/Garrett/BCMM_EpifluorConfocScope/Other/V1_CCandCTcells/",
            projType, "/", mouse, "/LaminarFluorData/", mouse, "_Section",
            ToString[sectRange[[n]]], ".xlsx"]], 1], 2], {n, 1, Length[sectRange]}];
```

```mathematica
In[ ]:= resol = (Last[laminarFluorPerSection[[1]][[All, 1]]] -
        First[laminarFluorPerSection[[1]][[All, 1]]]) /
      Length[laminarFluorPerSection[[1]][[All, 1]]];
```

```mathematica
In[ ]:= (***Median-smooth at 5 um***)
```

```mathematica
In[ ]:= window = Round[5 / resol];
```

```mathematica
In[ ]:= medianSmoothedPerSection =
    Table[Partition[Riffle[(laminarFluorPerSection[[n]])[[All, 1]],
        MovingMap[Quantile[#, 1 / 2] &, (laminarFluorPerSection[[n]])[[All, 2]],
          window, "Reflected"]], 2], {n, 1, Length[sectRange]}];
```

```mathematica
(***Check that all sections go up to at least 150 um***)
```

```mathematica
In[ ]:= Manipulate[ListLinePlot[medianSmoothedPerSection[[n]], PlotRange -> All],
    {n, 1, Length[sectRange], 1}]
```

```mathematica
In[ ]:= Table[Last[medianSmoothedPerSection[[n]][[All, 1]]], {n, 1, Length[sectRange]}]
```

```mathematica
In[ ]:= (****Truncate all lists at 150 um***)
```

```mathematica
In[ ]:= truncPoint = Round[150 / resol];
```

```mathematica
In[ ]:= medianSmoothedPerSectionTrunc =
    Table[Take[medianSmoothedPerSection[[n]], truncPoint], {n, 1, Length[sectRange]}];
```

```mathematica
In[ ]:= (***Normalize all lists to max fluorescence***)
```

```mathematica
In[ ]:= maxFluor = Max[Flatten[
      Table[medianSmoothedPerSectionTrunc[[n]][[All, 2]], {n, 1, Length[sectRange]}]]];
```

```mathematica
In[ ]:= medianSmoothedPerSectionTruncNorm =
    Table[Partition[Riffle[medianSmoothedPerSectionTrunc[[n]][[All, 1]],
        medianSmoothedPerSectionTrunc[[n]][[All, 2]] / maxFluor],
      2], {n, 1, Length[sectRange]}];
```

In[◦]:= (***Calculate the mean laminar fluorescence profile for this animal and export data***)

In[◦]:= **meanFluorProfile =**
  Mean[Table[medianSmoothedPerSectionTruncNorm[[n]], {n, 1, Length[sectRange]}]];

  (***Export layer 1 profile of the mean
   normalized dendritic fluorescence from this animal***)

In[◦]:= **Export[StringJoin["S:/Imaging/Garrett/BCMM_EpifluorConfocScope/Other/V1_CCandCTcells/",**
  projType, "/", mouse, "/", mouse, "_meanLaminarFluor.txt"], meanFluorProfile];