```
(***Note: Values for generating these plots are embedded within the raw data set,
which is too large to upload onto the public data repository***)

(****V1 axons***)

dateMouseSessionListV1 =
  {{"061222", "Mouse22565", "Session1"}, {"061222", "Mouse22565", "Session2"},
   {"061222", "Mouse22582", "Session1"}, {"061222", "Mouse22582", "Session2"},
   {"061422", "Mouse22565", "Session1"}, {"061522", "Mouse22582", "Session1"},
   {"072622", "Mouse23049", "Session1"}, {"072522", "Mouse23090", "Session1"},
   {"072822", "Mouse23049", "Session1"}, {"072822", "Mouse23004", "Session1"},
   {"072922", "Mouse23004", "Session1"}, {"080222", "Mouse23049", "Session1"}};

ratesPMV1 = Flatten[Table[numROIsCBs =
      Length[FileNames["*", File[StringJoin["S:/Imaging/Garrett/FMB208_2PRig/",
          dateMouseSessionListV1[[n, 1]], "/", dateMouseSessionListV1[[n, 2]], "/",
          dateMouseSessionListV1[[n, 3]], "/dFOverF0TimeSeries_CellBodies/"]]]];
     ToExpression /@ Table[Import[StringJoin["S:/Imaging/Garrett/FMB208_2PRig/",
         dateMouseSessionListV1[[n, 1]], "/", dateMouseSessionListV1[[n, 2]],
         "/", dateMouseSessionListV1[[n, 3]], "/", "MeanInferredFiringRates/",
         dateMouseSessionListV1[[n, 1]], "_", dateMouseSessionListV1[[n, 2]], "_",
         dateMouseSessionListV1[[n, 3]], "_meanFR_cellBody", ToString[cellBody], ".txt"]],
       {cellBody, 1, numROIsCBs}], {n, 1, Length[dateMouseSessionListV1]}]];

ratesV1 = Flatten[Table[numROIsAxons =
      Length[FileNames["*", File[StringJoin["S:/Imaging/Garrett/FMB208_2PRig/",
          dateMouseSessionListV1[[n, 1]], "/", dateMouseSessionListV1[[n, 2]],
          "/", dateMouseSessionListV1[[n, 3]], "/dFOverF0TimeSeries_Axons/"]]]];
     ToExpression /@ Table[Import[StringJoin["S:/Imaging/Garrett/FMB208_2PRig/",
         dateMouseSessionListV1[[n, 1]], "/", dateMouseSessionListV1[[n, 2]],
         "/", dateMouseSessionListV1[[n, 3]], "/", "MeanInferredFiringRates/",
         dateMouseSessionListV1[[n, 1]], "_", dateMouseSessionListV1[[n, 2]], "_",
         dateMouseSessionListV1[[n, 3]], "_meanFR_axon", ToString[axon], ".txt"]],
       {axon, 1, numROIsAxons}], {n, 1, Length[dateMouseSessionListV1]}]];

(****LM axons***)

dateMouseSessionListLM =
  {{"060722", "Mouse22576", "Session1"}, {"060722", "Mouse22576", "Session2"},
   {"061522", "Mouse22576", "Session1"}, {"062222", "Mouse22577", "Session1"},
   {"062822", "Mouse23076", "Session1"}, {"072122", "Mouse23076", "Session1"},
   {"062222", "Mouse22518", "Session1"}, {"062322", "Mouse22518", "Session1"}};

ratesPMLM = Flatten[Table[numROIsCBs =
      Length[FileNames["*", File[StringJoin["S:/Imaging/Garrett/FMB208_2PRig/",
          dateMouseSessionListLM[[n, 1]], "/", dateMouseSessionListLM[[n, 2]], "/",
          dateMouseSessionListLM[[n, 3]], "/dFOverF0TimeSeries_CellBodies/"]]]];
     ToExpression /@ Table[Import[StringJoin["S:/Imaging/Garrett/FMB208_2PRig/",
         dateMouseSessionListLM[[n, 1]], "/", dateMouseSessionListLM[[n, 2]],
         "/", dateMouseSessionListLM[[n, 3]], "/", "MeanInferredFiringRates/",
         dateMouseSessionListLM[[n, 1]], "_", dateMouseSessionListLM[[n, 2]], "_",
         dateMouseSessionListLM[[n, 3]], "_meanFR_cellBody", ToString[cellBody], ".txt"]],
       {cellBody, 1, numROIsCBs}], {n, 1, Length[dateMouseSessionListLM]}]];
```

```
In[ ]:= ratesLM = Flatten[Table[numROIsAxons =
          Length[FileNames["*", File[StringJoin["S:/Imaging/Garrett/FMB208_2PRig/",
              dateMouseSessionListLM[[n, 1]], "/", dateMouseSessionListLM[[n, 2]],
              "/", dateMouseSessionListLM[[n, 3]], "/dFOverF0TimeSeries_Axons/"]]]];
        ToExpression /@ Table[Import[StringJoin["S:/Imaging/Garrett/FMB208_2PRig/",
            dateMouseSessionListLM[[n, 1]], "/", dateMouseSessionListLM[[n, 2]],
            "/", dateMouseSessionListLM[[n, 3]], "/", "MeanInferredFiringRates/",
            dateMouseSessionListLM[[n, 1]], "_", dateMouseSessionListLM[[n, 2]], "_",
            dateMouseSessionListLM[[n, 3]], "_meanFR_axon", ToString[axon], ".txt"]],
          {axon, 1, numROIsAxons}], {n, 1, Length[dateMouseSessionListLM]}]];

In[ ]:= (****LP axons***)

In[ ]:= dateMouseSessionListLP =
       {{"062222", "Mouse22597", "Session1"}, {"062222", "Mouse22597", "Session2"},
        {"072122", "Mouse23087", "Session1"}, {"072122", "Mouse23096", "Session1"},
        {"072122", "Mouse23096", "Session2"}, {"073022", "Mouse23087", "Session1"},
        {"080122", "Mouse23079", "Session1"}, {"080222", "Mouse23079", "Session1"},
        {"080122", "Mouse23060", "Session1"}, {"080222", "Mouse23060", "Session1"}};

In[ ]:= ratesPMLP = Flatten[Table[numROIsCBs =
          Length[FileNames["*", File[StringJoin["S:/Imaging/Garrett/FMB208_2PRig/",
              dateMouseSessionListLP[[n, 1]], "/", dateMouseSessionListLP[[n, 2]], "/",
              dateMouseSessionListLP[[n, 3]], "/dFOverF0TimeSeries_CellBodies/"]]]];
        ToExpression /@ Table[Import[StringJoin["S:/Imaging/Garrett/FMB208_2PRig/",
            dateMouseSessionListLP[[n, 1]], "/", dateMouseSessionListLP[[n, 2]],
            "/", dateMouseSessionListLP[[n, 3]], "/", "MeanInferredFiringRates/",
            dateMouseSessionListLP[[n, 1]], "_", dateMouseSessionListLP[[n, 2]], "_",
            dateMouseSessionListLP[[n, 3]], "_meanFR_cellBody", ToString[cellBody], ".txt"]],
          {cellBody, 1, numROIsCBs}], {n, 1, Length[dateMouseSessionListLP]}]];

In[ ]:= ratesLP = Flatten[Table[numROIsAxons =
          Length[FileNames["*", File[StringJoin["S:/Imaging/Garrett/FMB208_2PRig/",
              dateMouseSessionListLP[[n, 1]], "/", dateMouseSessionListLP[[n, 2]],
              "/", dateMouseSessionListLP[[n, 3]], "/dFOverF0TimeSeries_Axons/"]]]];
        ToExpression /@ Table[Import[StringJoin["S:/Imaging/Garrett/FMB208_2PRig/",
            dateMouseSessionListLP[[n, 1]], "/", dateMouseSessionListLP[[n, 2]],
            "/", dateMouseSessionListLP[[n, 3]], "/", "MeanInferredFiringRates/",
            dateMouseSessionListLP[[n, 1]], "_", dateMouseSessionListLP[[n, 2]], "_",
            dateMouseSessionListLP[[n, 3]], "_meanFR_axon", ToString[axon], ".txt"]],
          {axon, 1, numROIsAxons}], {n, 1, Length[dateMouseSessionListLP]}]];

In[ ]:= (**************************)

In[ ]:= ratesPM = Join[ratesPMV1, ratesPMLM, ratesPMLP];

In[ ]:= v1Color = RGBColor["#ff1f5b"];

In[ ]:= lpColor = RGBColor["#009ade"];

In[ ]:= lmColor = RGBColor["#f28522"];

In[ ]:= v2mColor = Purple;

In[ ]:= (**********************)
```

```
In[•]:= v1AxonCharts =
  Show[BoxWhiskerChart[ratesV1, {{"Whiskers", Directive[Darker@v1Color, Thick]},
     {"Fences", Directive[Darker@v1Color, Thick]},
     {"MedianMarker", Directive[Darker@v1Color, Thickness[0.009]]}},
    PlotRange → {All, {0, 11.2}}, ChartStyle → Directive[v1Color, Opacity[0.3]],
    Frame → False], DistributionChart[ratesV1, PlotRange → {All, {0, 11.2}},
    ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], v1Color], Frame → False],
   FrameTicks → {{LinTicks[0, 11.2, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}],
      None}, {None, None}}, Axes → False, TicksStyle → Thick,
   FrameStyle → Directive[Transparent, Thick], Frame → {{True, None}, {None, None}},
   FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];

In[•]:= lmAxonCharts =
  Show[BoxWhiskerChart[ratesLM, {{"Whiskers", Directive[Darker@lmColor, Thick]},
     {"Fences", Directive[Darker@lmColor, Thick]},
     {"MedianMarker", Directive[Darker@lmColor, Thickness[0.009]]}},
    PlotRange → {All, {0, 11.2}}, ChartStyle → Directive[lmColor, Opacity[0.3]],
    Frame → False], DistributionChart[ratesLM, PlotRange → {All, {0, 11.2}},
    ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], lmColor], Frame → False],
   FrameTicks → {{LinTicks[0, 11.2, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}],
      None}, {None, None}}, Axes → False, TicksStyle → Thick,
   FrameStyle → Directive[Transparent, Thick], Frame → {{True, None}, {None, None}},
   FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];

In[•]:= lpAxonCharts =
  Show[BoxWhiskerChart[ratesLP, {{"Whiskers", Directive[Darker@lpColor, Thick]},
     {"Fences", Directive[Darker@lpColor, Thick]},
     {"MedianMarker", Directive[Darker@lpColor, Thickness[0.009]]}},
    PlotRange → {All, {0, 11.2}}, ChartStyle → Directive[lpColor, Opacity[0.3]],
    Frame → False], DistributionChart[ratesLP, PlotRange → {All, {0, 11.2}},
    ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], lpColor], Frame → False],
   FrameTicks → {{LinTicks[0, 11.2, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}],
      None}, {None, None}}, Axes → False, TicksStyle → Thick,
   FrameStyle → Directive[Transparent, Thick], Frame → {{True, None}, {None, None}},
   FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];

In[•]:= v2mAxonCharts =
  Show[BoxWhiskerChart[ratesPM, {{"Whiskers", Directive[Darker@v2mColor, Thick]},
     {"Fences", Directive[Darker@v2mColor, Thick]},
     {"MedianMarker", Directive[Darker@v2mColor, Thickness[0.009]]}},
    PlotRange → {All, {0, 11.2}}, ChartStyle → Directive[v2mColor, Opacity[0.3]],
    Frame → False], DistributionChart[ratesPM, PlotRange → {All, {0, 11.2}},
    ChartStyle → Directive[EdgeForm[Transparent], Opacity[0.2], v2mColor], Frame → False],
   FrameTicks → {{LinTicks[0, 11.2, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}],
      None}, {None, None}}, Axes → False, TicksStyle → Thick,
   FrameStyle → Directive[Transparent, Thick], Frame → {{True, None}, {None, None}},
   FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];
```

In[ ]:=
```
transp = Show[BoxWhiskerChart[ratesPM, {{"Whiskers", Directive[Transparent, Thick]},
      {"Fences", Directive[Transparent, Thick]},
      {"MedianMarker", Directive[Transparent, Thickness[0.009]]}},
     PlotRange → {All, {0, 11.2}}, ChartStyle → Transparent, Frame → False],
    DistributionChart[ratesPM, PlotRange → {All, {0, 11.2}}, ChartStyle →
      Directive[EdgeForm[Transparent], Opacity[0.2], Transparent], Frame → False],
    FrameTicks → {{LinTicks[0, 11.2, MajorTickLength → {0, .03}, MinorTickLength → {0, 0}],
       None}, {None, None}}, Axes → False, TicksStyle → Thick,
    FrameStyle → Directive[Black, Thick], Frame → {{True, None}, {None, None}},
    FrameTicksStyle -> Directive[FontOpacity -> 0, FontSize -> 0]];
```

In[ ]:=
```
GraphicsRow[{v1AxonCharts, lmAxonCharts, lpAxonCharts, v2mAxonCharts, transp},
 Spacings → {{-280, -280, -280, -280, -480}}]
```

Out[ ]=