First\_responder\_analysis.m – This program calculates the first responder cells (Example data is in WT\_G2to11\_Coup120Seed1)

The cells are ordered from first to last responder in FirstIndCol

The Time of response is cHHtime, to get seconds divide this value by 10

Allrandfirststruct contains the KATP channel conductance (gKATP), GK rate(kGlyc), and coupling conductance (gCoup) for the first responders

Allmeans contains The following information in order

IsletAvggKATP = average islet KATP channel conductance

IsletAvgCoup = average islet gCoup (coupling conductance)

IsletAvgkGlc = average islet GK rate

IsletStdgKATP = standard deviation of islet KATP channel conductance

IsletStdCoup = standard deviation of islet gCoup (coupling conductance)

IsletStdkGlc = standard deviation of islet GK rate '

AUCmeanislet = Area under the curve of the average islet time course

IsletAvgTresp = average islet response time

gKatpCellsFirst\_mean = average KATP channel conductance of first responders

gCoupCellsFirst\_mean = average gCoup of first responders

kGlycCellsFirst\_mean = average GK rate of first responders

TrespCellsFirst\_mean = average response time of first responders gKatpCellsLast\_mean = average KATP channel conductance of last responders

gCoupCellsLast\_mean = average gCoup of last responders

kGlycCellsLast\_mean = average GK rate of last responders

TrespCellsLast\_mean = average response time of last responders

DeltaTresp = Difference between response time of last responders and first responders

First\_responder\_analysis\_UncoupCellsV2 - This program calculates the first responder cells (Example data is in Uncouple\_FirstResp\_Seed1\_perc10)

after uncoupling a set of cells

First responder cell indexes are in Firstvalues

Allmeans contains The following information in order

TrespCellsFirst\_mean = average response time of first responders

TrespCellsLast\_mean = average response time of last responders

DeltaTresp = Difference between response time of last responders and first responders

AUCmeanislet = Area under the curve of the average islet time course

IsletAvgTresp = average islet response time