



THE HAMNER INSTITUTES FOR HEALTH SCIENCES



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

DILIsym® User Training - The Input Panel

DILI-sim Team

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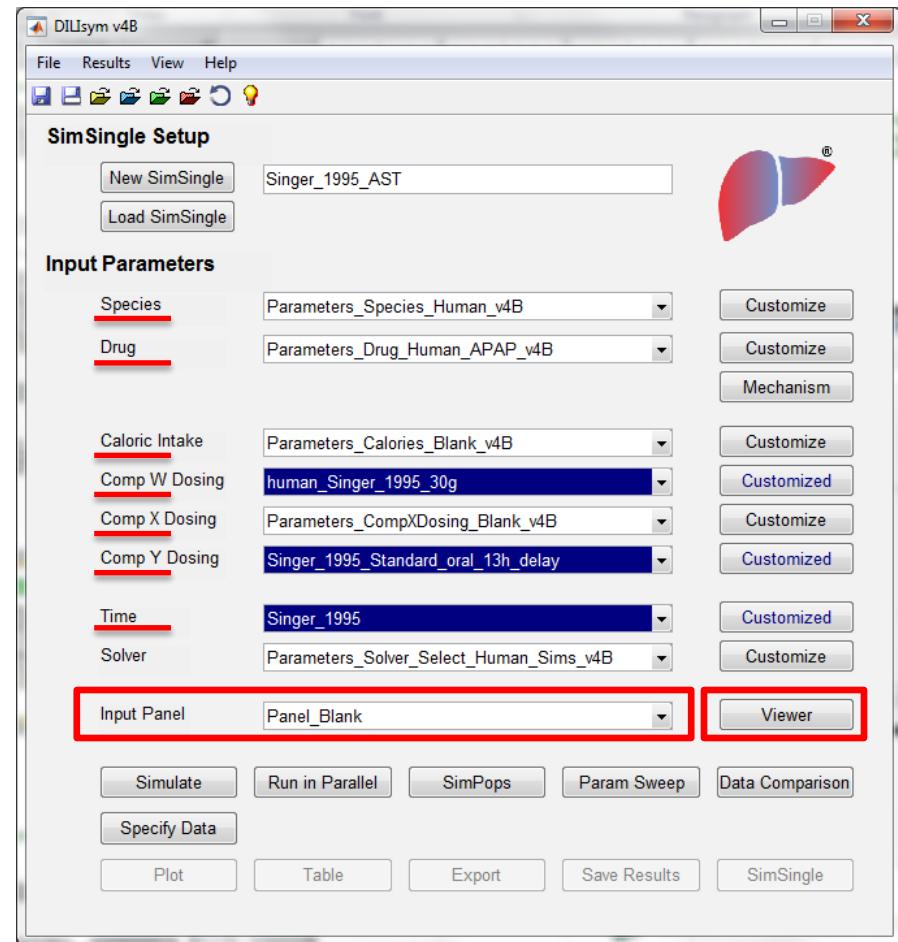
Goal for This Training Session

Participants should understand the following general concepts:

- How to create Input Panels
- How to use Input Panels to:
 - Compare parameters of interest between SimSingles
 - Modify parameters within a SimSingle
- What particulars to consider regarding saving and changing Input Panels

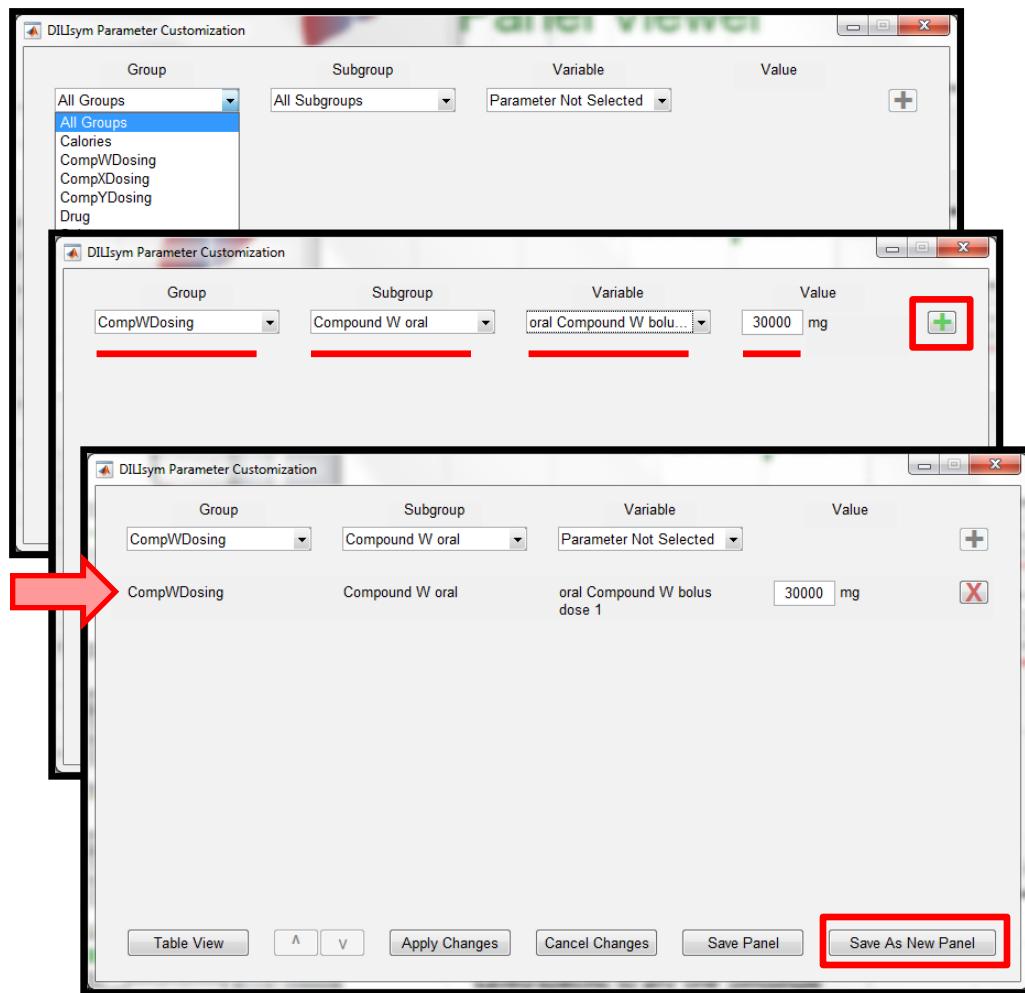
GUI Input Panel Viewer

- GUI Input Panel Viewer exists to display user-defined sets of parameters
- Custom Input Panels with parameters that span multiple parameter sets can be created:
 - Select Viewer

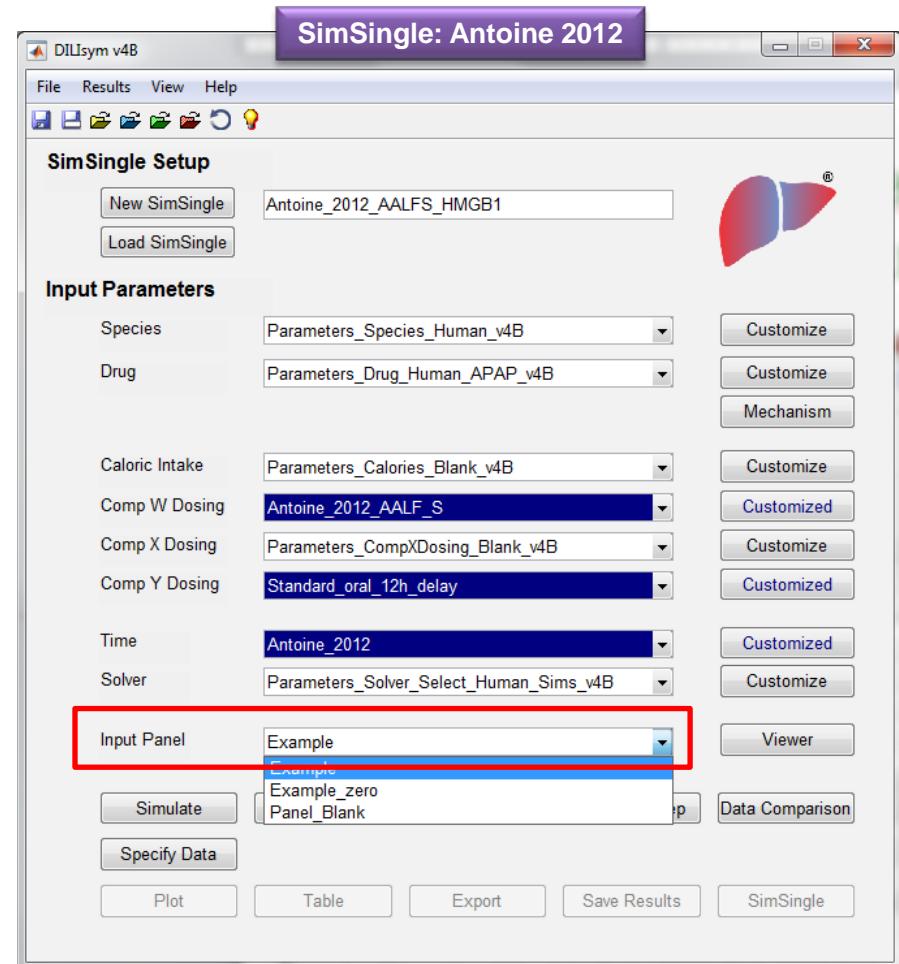
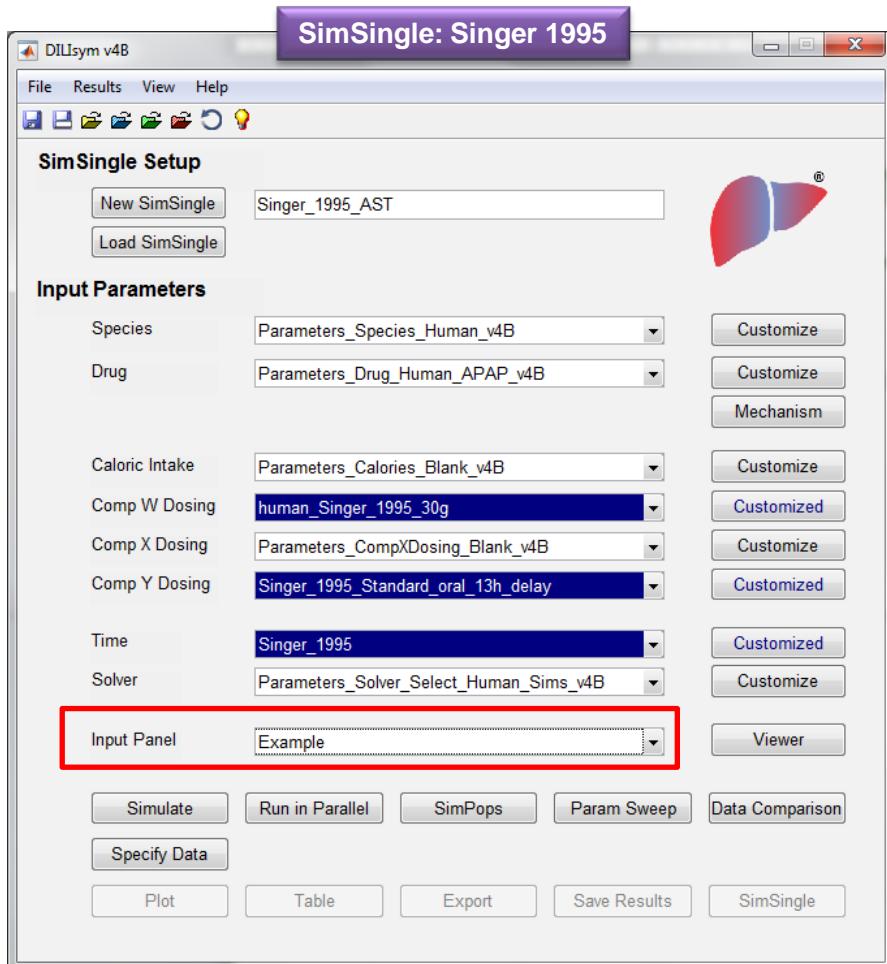


GUI Input Panel Viewer

- GUI Input Panel Viewer exists to display user-defined sets of parameters
- Custom Input Panels with parameters that span multiple parameter sets can be created:
 - Select Viewer
 - Select Group, Subgroup, Parameter
 - Add Parameter(s) of interest
 - Save As New Panel



Different SimSingles Can Access a Given Input Panel



Using an Input Panel to Compare SimSingles

- GUI Input Panel Viewer exists to display user-defined sets of parameters
- Custom Input Panels with parameters that span multiple parameter sets can be created:
 - Select Viewer
 - Select Group, Subgroup, Parameter
 - Add Parameter(s) of interest
 - Save As New Panel
- Use Input Panels to:
 - Compare parameters of interest between SimSingles™
 - Modify parameters within a SimSingle™
 - Note: Input Panels are **NOT** saved/specific to any one SimSingle™ by design

The image shows two windows of the DILSym Parameter Customization tool, each titled with a SimSingle name. Both windows have four dropdown menus at the top: Group (All Groups), Subgroup (All Subgroups), Variable (Parameter Not Selected), and Value.

SimSingle: Singer 1995 Data:

| Parameter | Group | Subgroup | Value |
|-------------|-----------------|---|------------|
| CompWDosing | Compound W oral | oral Compound W bolus dose 1 | 30000 mg |
| CompWDosing | Compound W oral | total oral Compound W bolus dose 1 | 1 ordinal |
| CompYDosing | Compound Y oral | start time oral Compound Y bolus dose 1 | 13.6 hour |
| CompYDosing | Compound Y oral | oral Compound Y bolus dose 1 | 9790 mg |
| CompYDosing | Compound Y oral | total oral Compound Y bolus dose 1 | 18 ordinal |

SimSingle: Antoine 2012 Data:

| Parameter | Group | Subgroup | Value |
|-------------|-----------------|---|------------|
| CompWDosing | Compound W oral | oral Compound W bolus dose 1 | 45500 mg |
| CompWDosing | Compound W oral | total oral Compound W bolus dose 1 | 1 ordinal |
| CompYDosing | Compound Y oral | start time oral Compound Y bolus dose 1 | 12 hour |
| CompYDosing | Compound Y oral | oral Compound Y bolus dose 1 | 9790 mg |
| CompYDosing | Compound Y oral | total oral Compound Y bolus dose 1 | 18 ordinal |

At the bottom of each window are buttons for Table View, sorting (up/down arrows), Apply Changes, Cancel Changes, Save Panel, and Save As New Panel.

Using Input Panel Viewer to Modify Parameters

- Modify parameters within a SimSingle™
 - Make change to parameter within Viewer
 - Select Apply Changes

The screenshot shows two windows of the DILsym Parameter Customization software. Both windows have a purple header bar with the text "SimSingle: Singer 1995".

Top Window (Initial State):

| Group | Subgroup | Variable | Value |
|-------------|-----------------|---|------------|
| All Groups | All Subgroups | Parameter Not Selected | |
| CompWDosing | Compound W oral | oral Compound W bolus dose 1 | 30000 mg |
| CompWDosing | Compound W oral | total oral Compound W bolus dose 1 | 1 ordinal |
| CompYDosing | Compound Y oral | start time oral Compound Y bolus dose 1 | 13.6 hour |
| CompYDosing | Compound Y oral | oral Compound Y bolus dose 1 | 9790 mg |
| CompYDosing | Compound Y oral | total oral Compound Y bolus dose 1 | 18 ordinal |

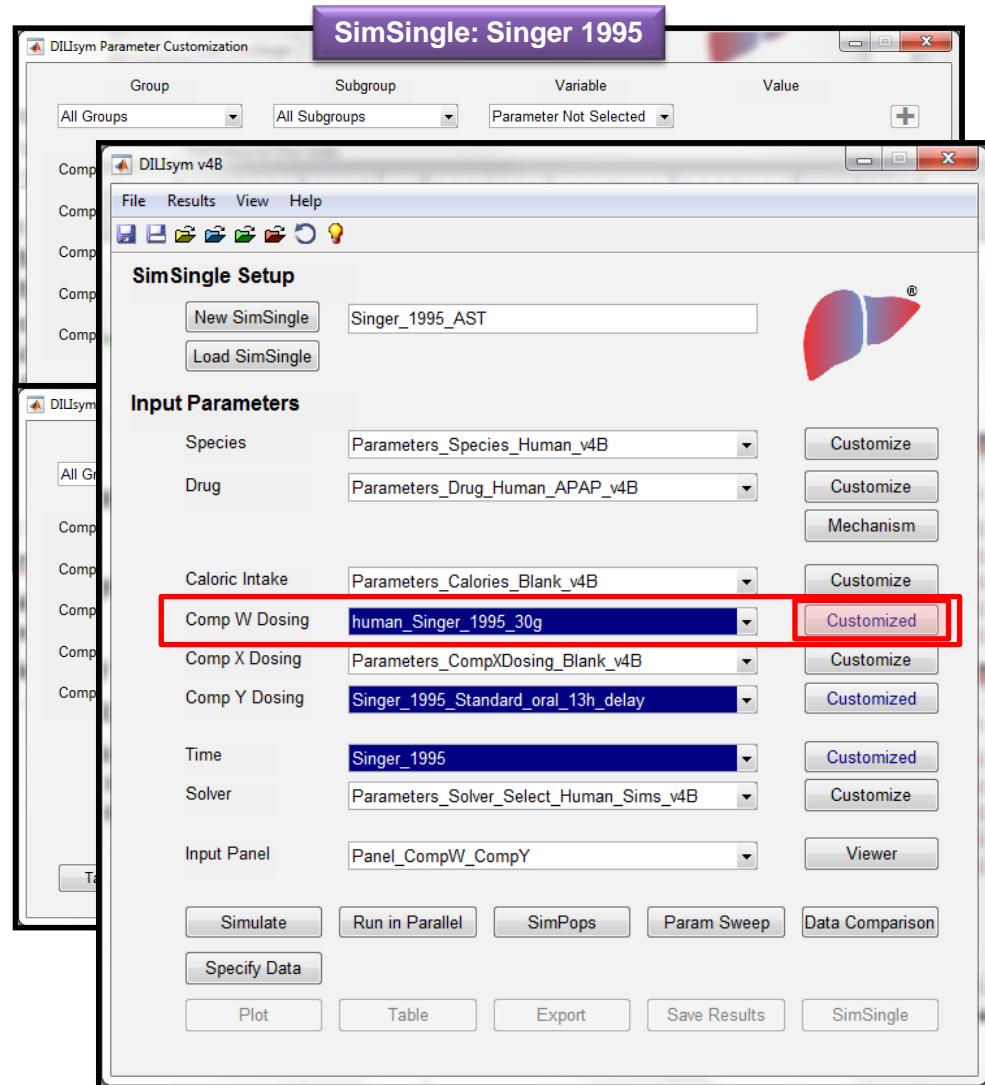
Bottom Window (Modified State):

| Group | Subgroup | Variable | Value |
|-------------|-----------------|---|------------|
| All Groups | All Subgroups | Parameter Not Selected | |
| CompWDosing | Compound W oral | oral Compound W bolus dose 1 | 20000 mg |
| CompWDosing | Compound W oral | total oral Compound W bolus dose 1 | 1 ordinal |
| CompYDosing | Compound Y oral | start time oral Compound Y bolus dose 1 | 13.6 hour |
| CompYDosing | Compound Y oral | oral Compound Y bolus dose 1 | 9790 mg |
| CompYDosing | Compound Y oral | total oral Compound Y bolus dose 1 | 18 ordinal |

Both windows include a toolbar at the bottom with buttons for "Table View", "Apply Changes" (which is highlighted with a red box), "Cancel Changes", "Save Panel", and "Save As New Panel".

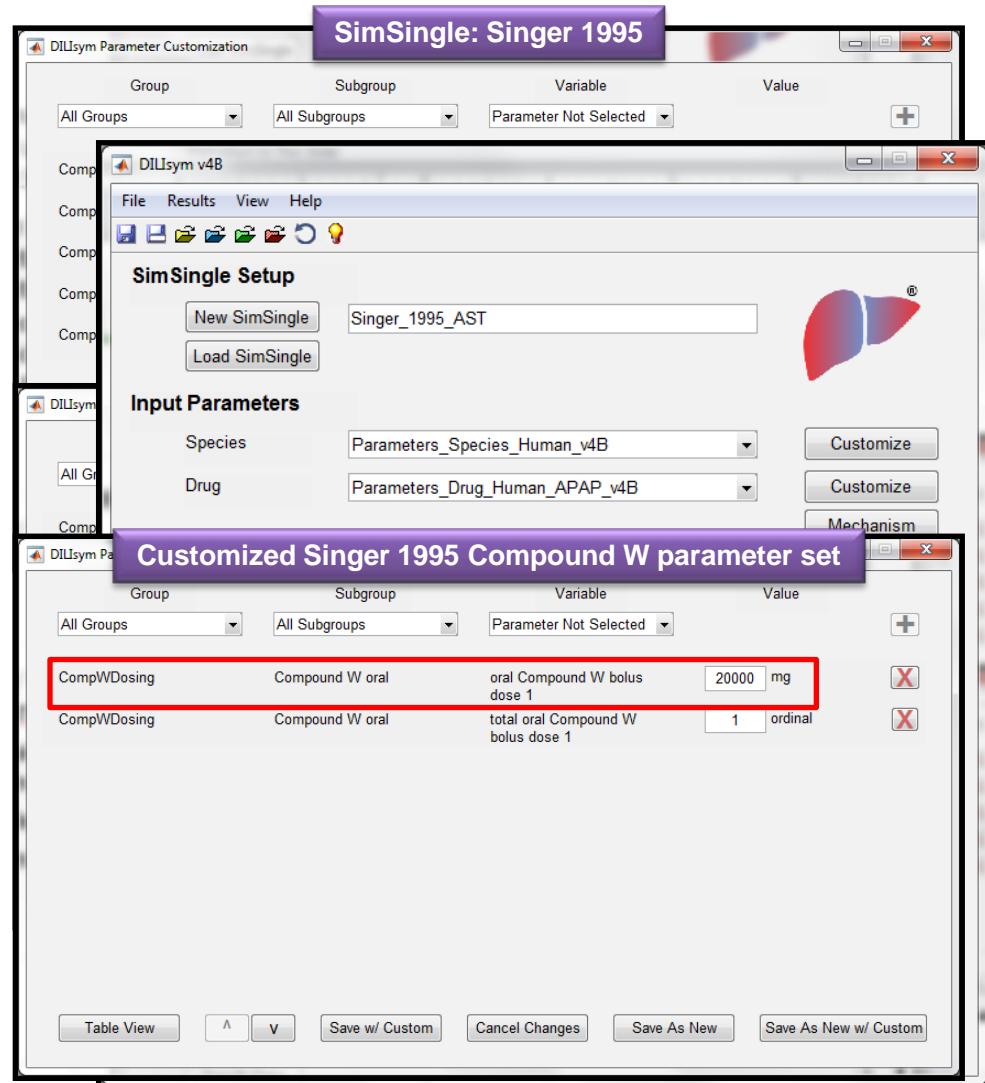
Using Input Panel Viewer to Modify Parameters

- Modify parameters within a SimSingle™
 - Make change to parameter within Viewer
 - Select Apply Changes
 - Viewer window closes!
 - Know which parameters you've changed so you can check your changes are in effect



Using Input Panel Viewer to Modify Parameters

- Modify parameters within a SimSingle™
 - Make change to parameter within Viewer
 - Select Apply Changes
 - Viewer window closes
 - Know which parameters you've changed so you can ensure that your changes are in effect
 - Changes are now reflected in SimSingle™ parameter set
 - Save required to preserve the change in the parameter set and/or in the SimSingle™



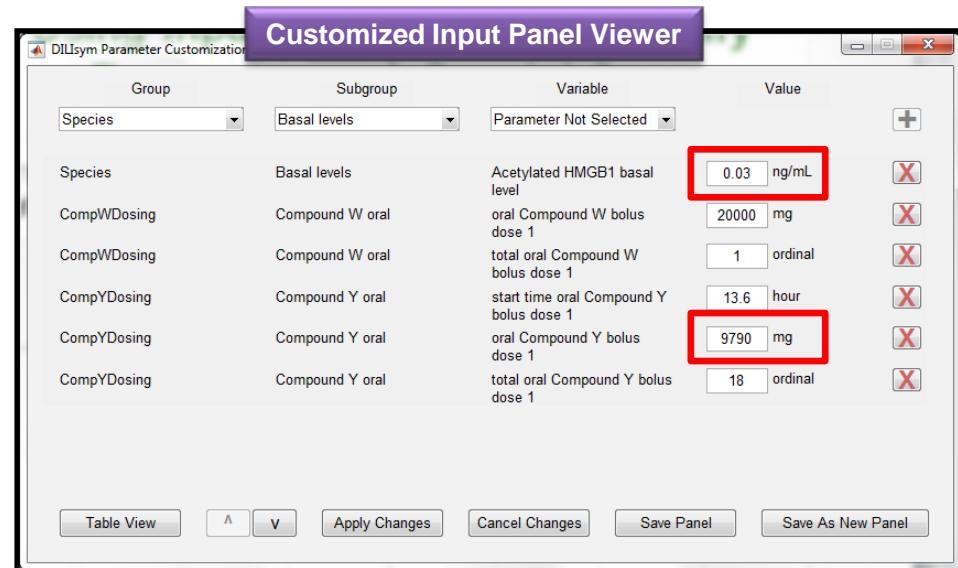
Using Input Panel Viewer to Modify Parameters – A Special Case

- Using Input Panel Viewer to Zero Parameters

Customized Input Panel Viewer

| Group | Subgroup | Variable | Value |
|-------------|-----------------|---|---|
| Species | Basal levels | Parameter Not Selected | <input type="text"/> |
| Species | Basal levels | Acetylated HMGB1 basal level | <input type="text" value="0.03 ng/mL"/> |
| CompWDosing | Compound W oral | oral Compound W bolus dose 1 | <input type="text" value="20000 mg"/> |
| CompWDosing | Compound W oral | total oral Compound W bolus dose 1 | <input type="text" value="1 ordinal"/> |
| CompYDosing | Compound Y oral | start time oral Compound Y bolus dose 1 | <input type="text" value="13.6 hour"/> |
| CompYDosing | Compound Y oral | oral Compound Y bolus dose 1 | <input type="text" value="9790 mg"/> |
| CompYDosing | Compound Y oral | total oral Compound Y bolus dose 1 | <input type="text" value="18 ordinal"/> |

Table View A V Apply Changes Cancel Changes Save Panel Save As New Panel



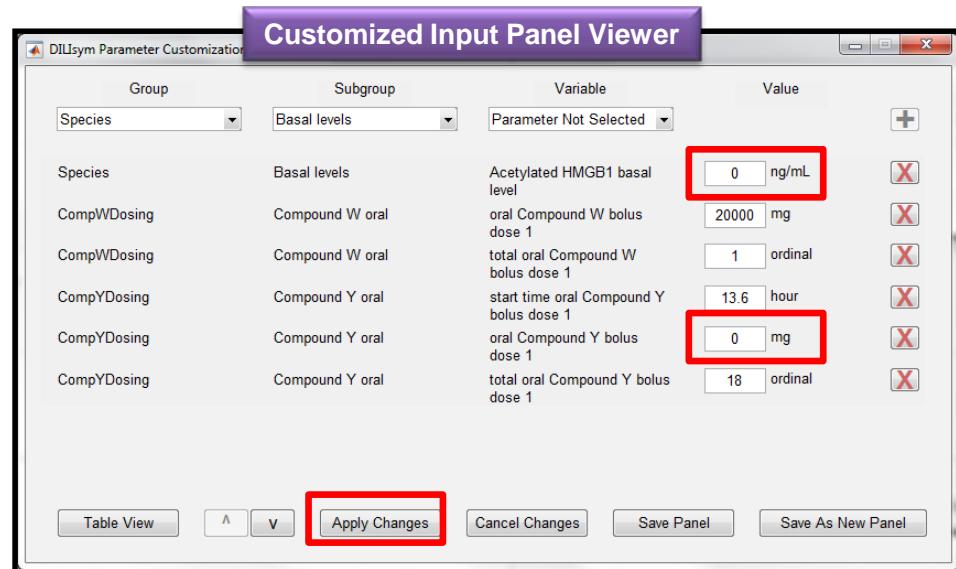
Using Input Panel Viewer to Modify Parameters – A Special Case

- Using Input Panel Viewer to Zero Parameters
 - Change value for parameter of interest
 - Select Apply Changes (closes window)

Customized Input Panel Viewer

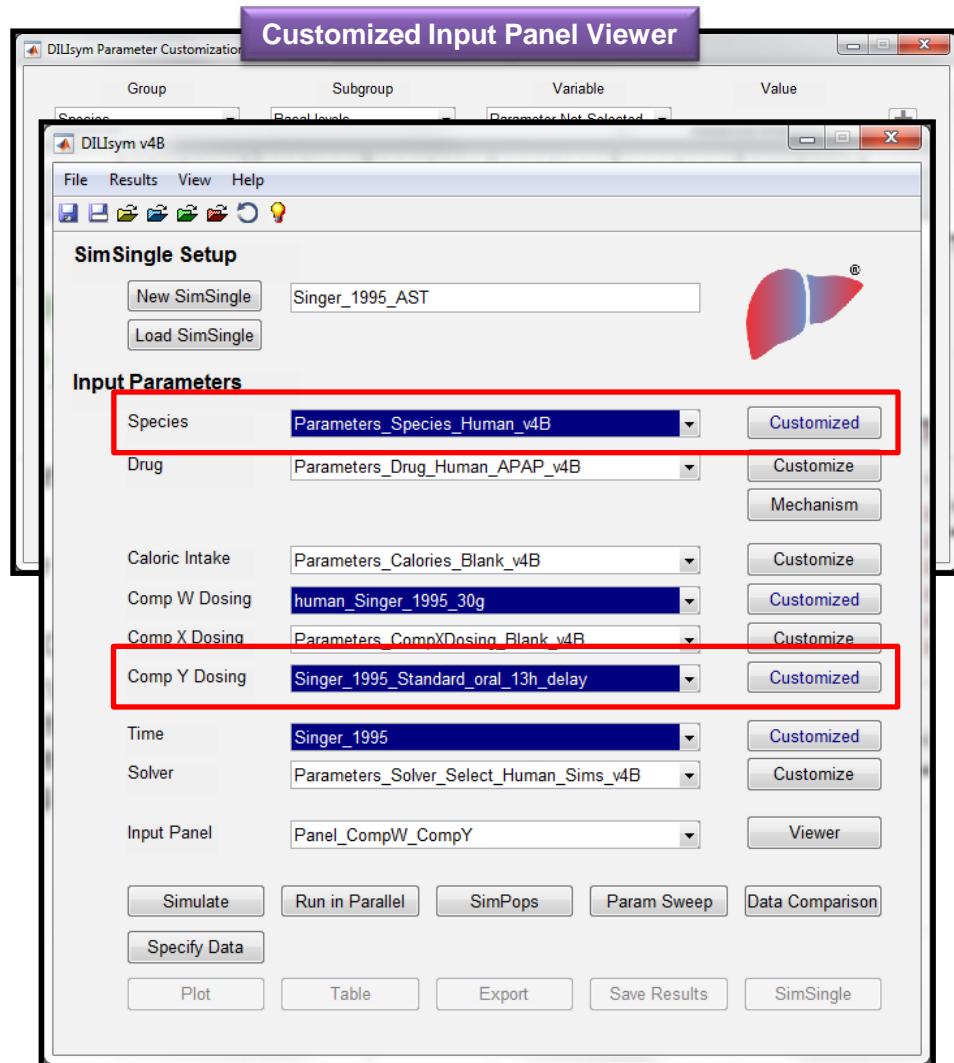
| Group | Subgroup | Variable | Value |
|-------------|-----------------|---|--|
| Species | Basal levels | Parameter Not Selected | <input type="text"/> + <input type="button"/> |
| Species | Basal levels | Acetylated HMGB1 basal level | <input type="text" value="0"/> ng/mL <input type="button"/> |
| CompWDosing | Compound W oral | oral Compound W bolus dose 1 | <input type="text" value="20000"/> mg <input type="button"/> |
| CompWDosing | Compound W oral | total oral Compound W bolus dose 1 | <input type="text" value="1"/> ordinal <input type="button"/> |
| CompYDosing | Compound Y oral | start time oral Compound Y bolus dose 1 | <input type="text" value="13.6"/> hour <input type="button"/> |
| CompYDosing | Compound Y oral | oral Compound Y bolus dose 1 | <input type="text" value="0"/> mg <input type="button"/> |
| CompYDosing | Compound Y oral | total oral Compound Y bolus dose 1 | <input type="text" value="18"/> ordinal <input type="button"/> |

Table View Apply Changes Cancel Changes Save Panel Save As New Panel



Using Input Panel Viewer to Modify Parameters – A Special Case

- Using Input Panel Viewer to Zero Parameters
 - Change value for parameter of interest
 - Select Apply Changes (viewer closes)
 - Parameter of interest will appear or disappear from customized parameter sets depending on default setting



Using Input Panel Viewer to Modify Parameters – A Special Case

- Using Input Panel Viewer to Zero Parameters
 - Change value for parameter of interest
 - Select Apply Changes (viewer closes)
 - Parameter of interest will appear or disappear from customized parameter sets depending on default setting
 - Default value = 0
 - Parameter **disappears** from list of customized parameters

The screenshot shows two windows related to parameter customization.

Customized Input Panel Viewer (Top Window):

| Group | Subgroup | Variable | Value |
|-------------|-----------------|---|------------|
| All Groups | All Subgroups | Parameter Not Selected | (button) |
| CompYDosing | Compound Y oral | start time oral Compound Y bolus dose 1 | 13.6 hour |
| CompYDosing | Compound Y oral | dosing period oral | 4 hour |
| CompYDosing | Compound Y oral | total oral Compound Y bolus dose 1 | 18 ordinal |

Oral Compound Y bolus dose 1 no longer on list of customized parameters

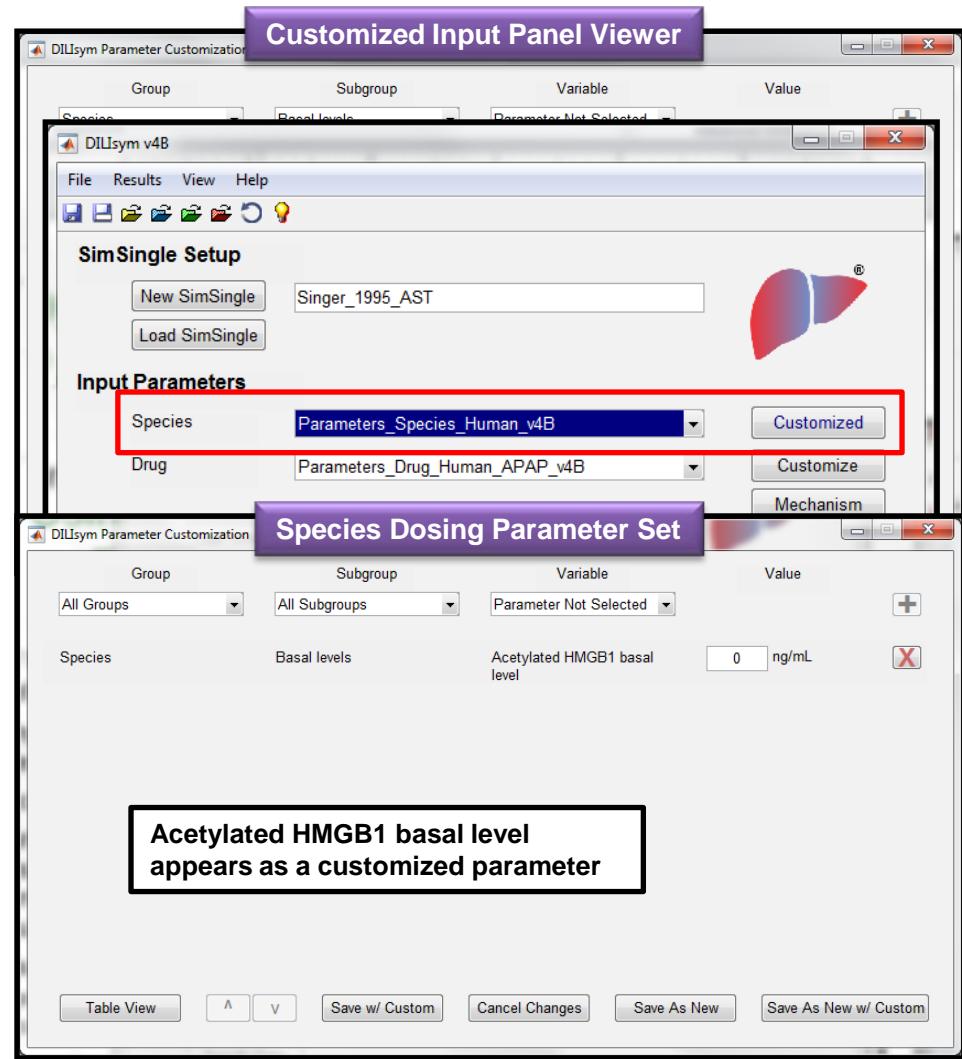
Main Viewer Interface (Bottom Window):

| | | |
|---------------|---|------------|
| Comp Y Dosing | Singer_1995_Standard_oral_13h_delay | Customized |
| Time | Singer_1995 | Customized |
| Solver | Parameters_Solver_Select_Human_Sims_v4B | Customize |
| Input Panel | Panel_CompW_CompY | Viewer |

Buttons at the bottom: Simulate, Run in Parallel, SimPops, Param Sweep, Data Comparison, Specify Data, Plot, Table, Export, Save Results, SimSingle.

Using Input Panel Viewer to Modify Parameters – A Special Case

- Using Input Panel Viewer to Zero Parameters
 - Change value for parameter of interest
 - Select Apply Changes (viewer closes)
 - Parameter of interest will appear or disappear from customized parameter sets depending on default setting
 - Default value = 0
 - Parameter **disappears** from list of customized parameters
 - Default value ≠ 0
 - Parameter now **appears** in list of customized parameters



Using Input Panels

Important Use Notes

- Input Panels are **NOT** saved/specific to any one SimSingle™
 - Permits comparison of the same parameters between SimSingles™
- Input Panels are **NOT** saved automatically
- Input Panel Viewer **closes** when you hit Apply Changes
 - Changes will appear in the parameter sets that the parameter is found in (e.g., Comp W Dosing)
 - If changes include zero-ing a parameter with a default value of zero, the parameter will have disappeared from list
 - If changes include zero-ing a parameter with a default non-zero value, the parameter will appear in the parameter set
- Parameter changes made from the Input Panel Viewer must be saved in the parameter set or SimSingle™ to be preserved