

Physiomodel 1.0 struture

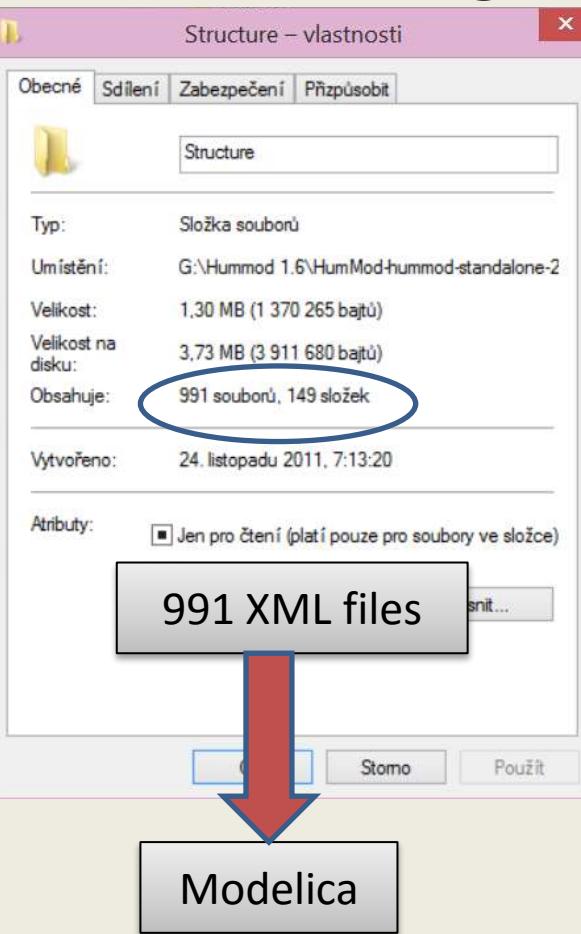
(using of Physiolibrary 3.2.1)

www.physiomodel.org

www.physiolibrary.org

Reimplementation and extension of HumMod Model in Modelica

hummod.org



HumMod | The best, most complete, mathematical model of human physiology ever created.

Get Started

We power [JustPhysiology.com](#)

Our model is being used by Just Physiology to leverage the power and comprehensive nature of our tool with a stunning graphical interface for teaching the next generation of physiology experts.

Go To [justphysiology.com](#)

Features and Origin

- Over 5,000 variables
- Completely customizable
- Open-sourced descriptions
- Published in peer-reviewed literature

[Read the origin story](#)

Other Projects

Editor

Want to create your own models? Fuss with HumMod's physiology?

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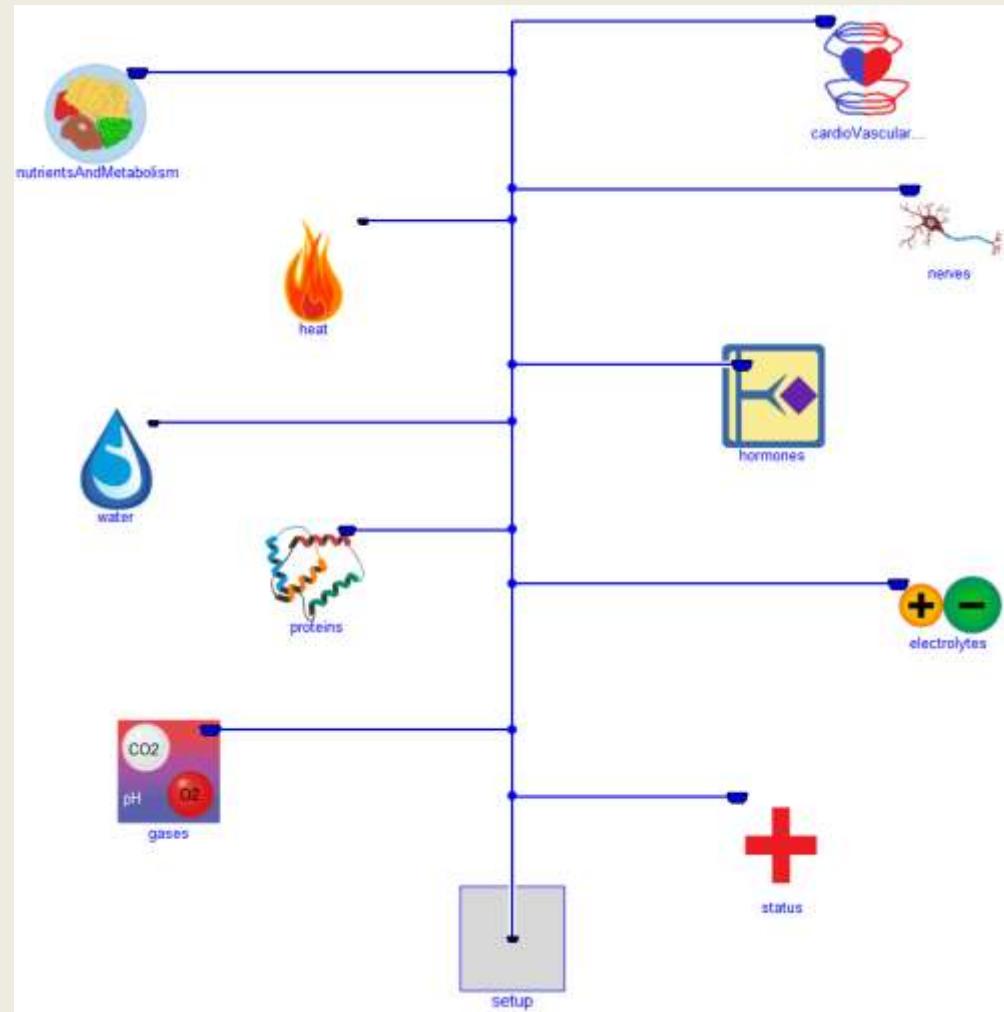
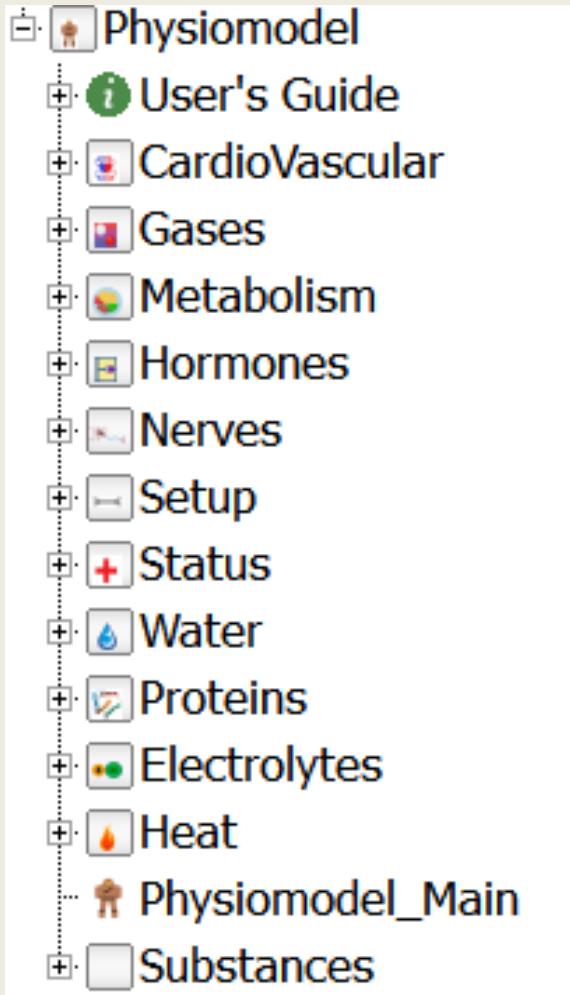
Help & Feedback

Knowledge Base

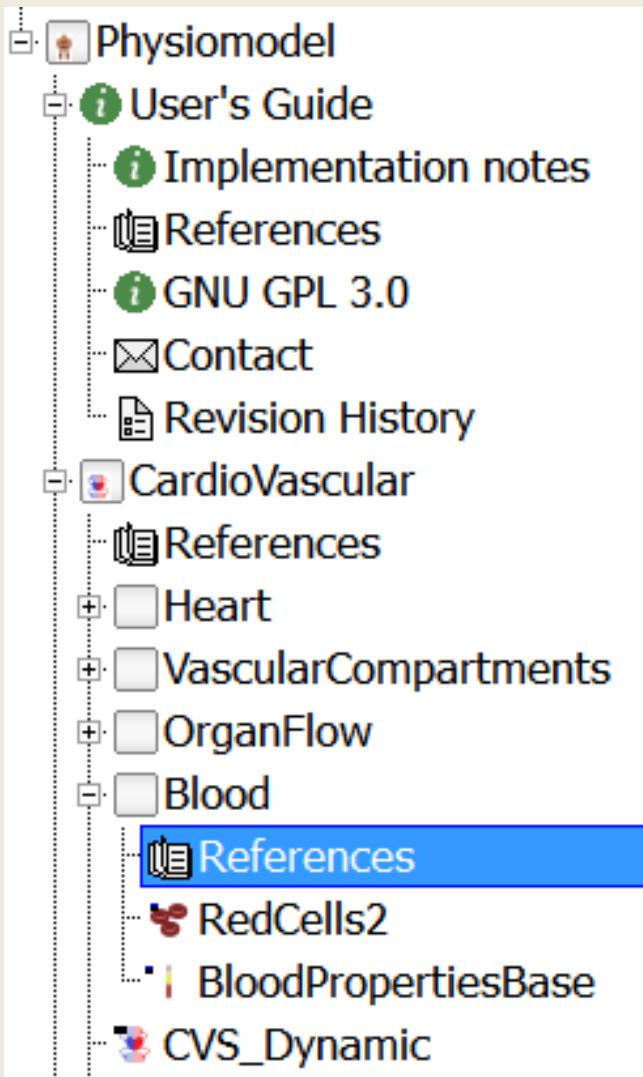
This is our starting point for the collective knowledge of HumMod. New tutorials, information, etc. appears in the Knowledge Base first.

[Experience the Knowledge Base](#)

Physiomodel Structure



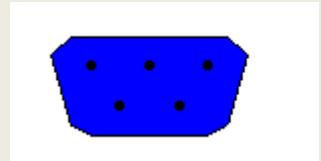
References



```
class References "References"
  extends Modelica.Icons.References;

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  <tr>
    <td>[Begg1966]</td>
    <td>T. Begg and J. Hearns, \"Components in blood viscosity. The relative contribution of haematocrit, plasma fibrinogen and other proteins,\" Clinical science, vol. 31, pp. 87-93, 1966. </td>
  </tr>
</table>
</html>"));
end References;
```

Expandable connector



expandable connector BusConnector

"Empty control bus that is adapted to the signals connected to it"

annotation (Documentation(info="**<html>**

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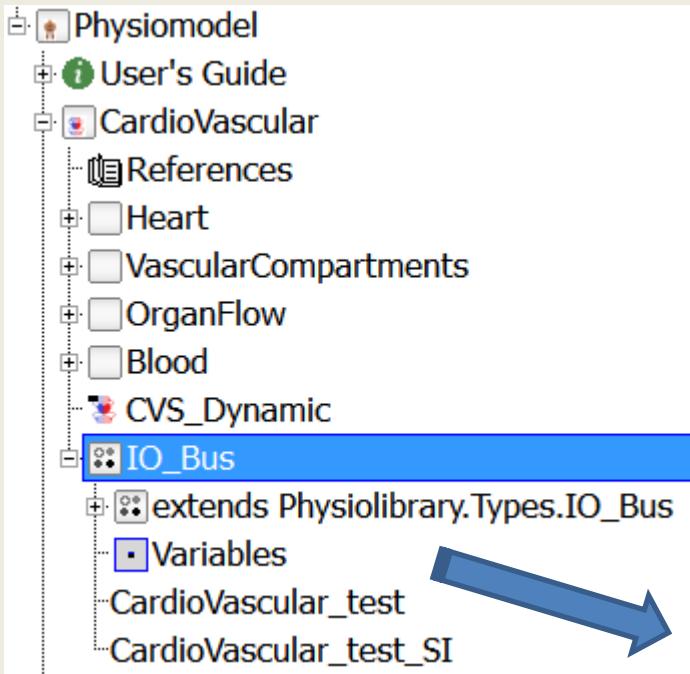
This connector defines the "expandable connector" that is used as bus in the Physiomodel.

Note, this connector is "empty". When using it, the actual content is constructed by the signals connected to this bus.

</p>

</html>"));

end BusConnector;

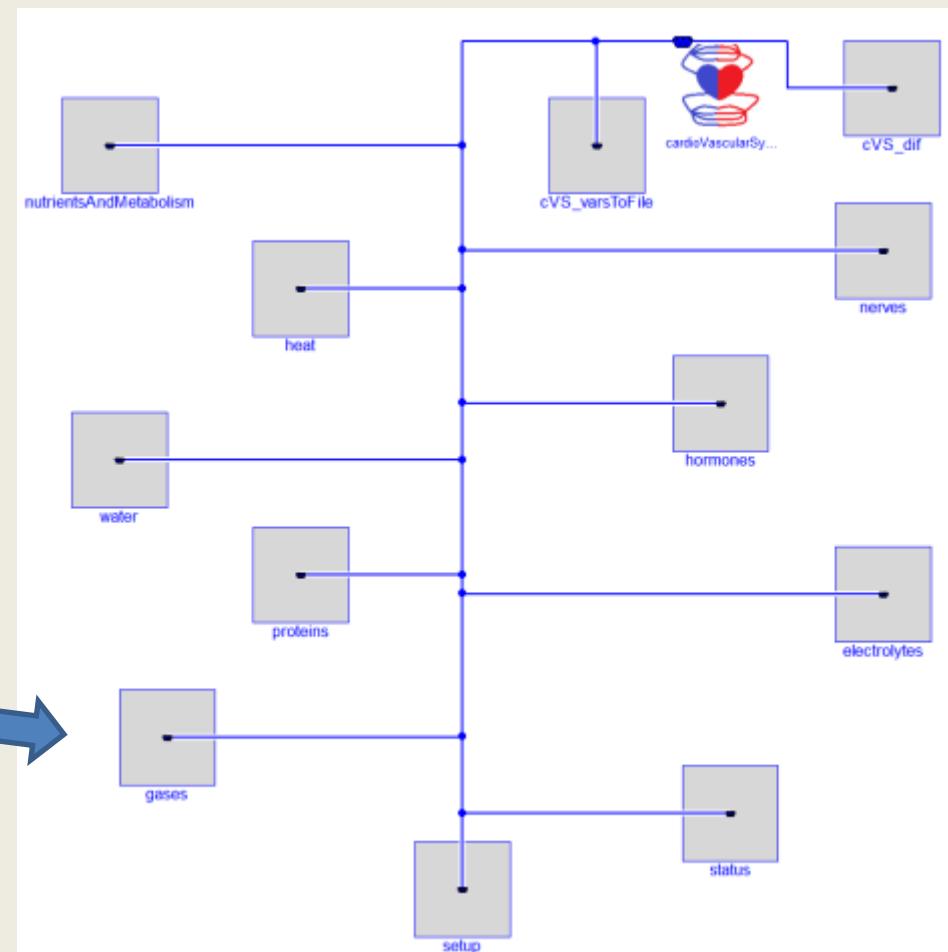
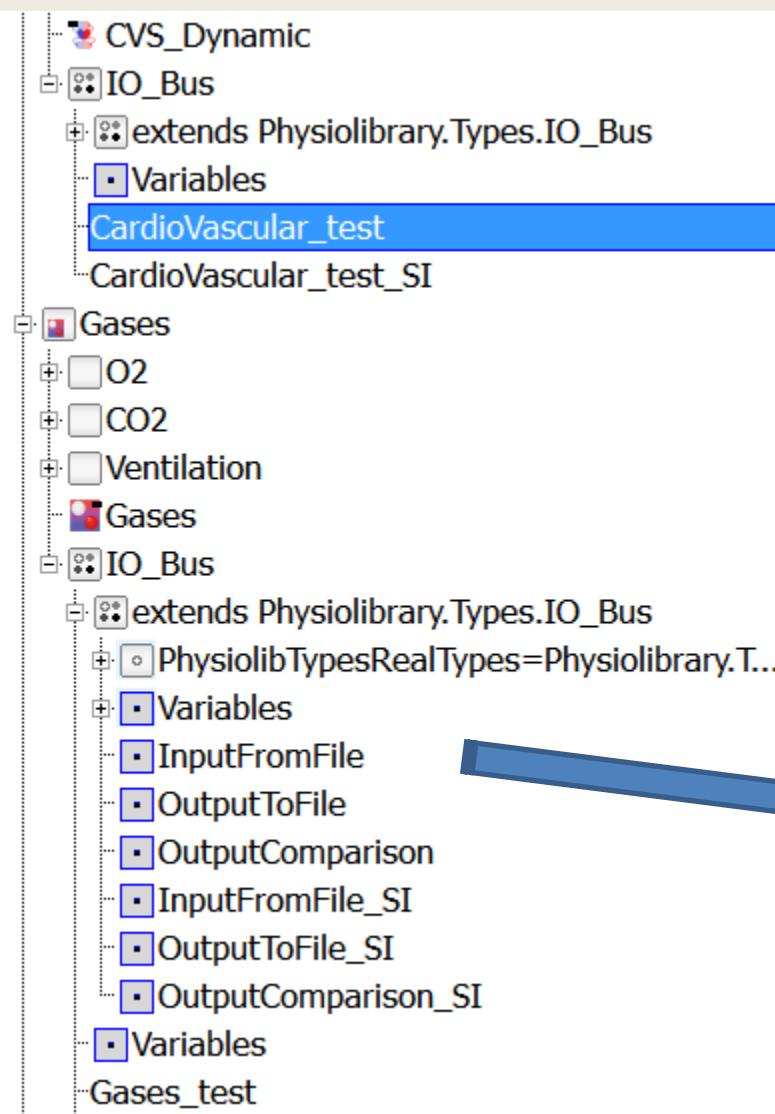


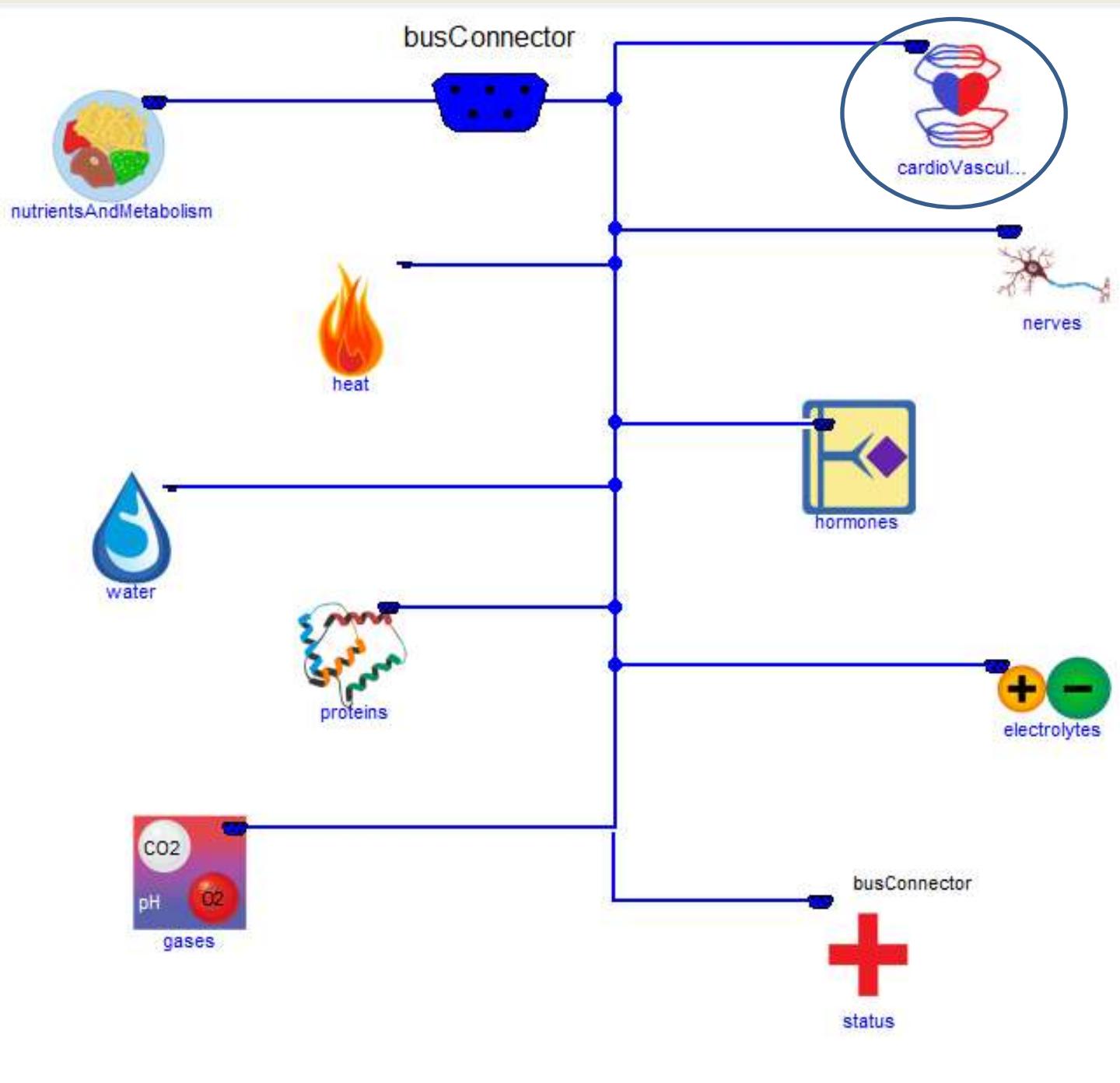
Input-Output Bus

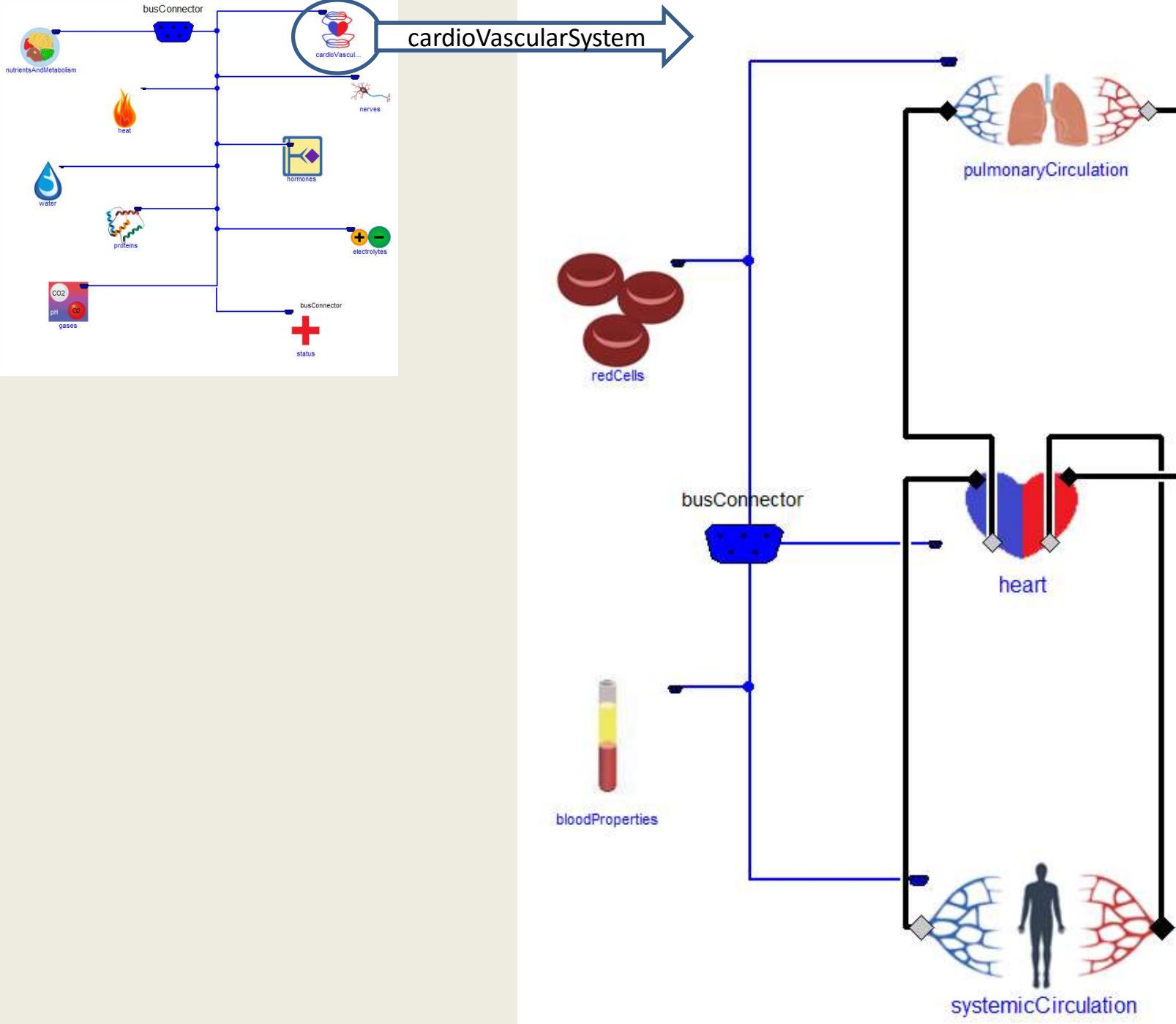
```
package IO_Bus  
extends Physiolibrary.Types.IO_Bus;
```

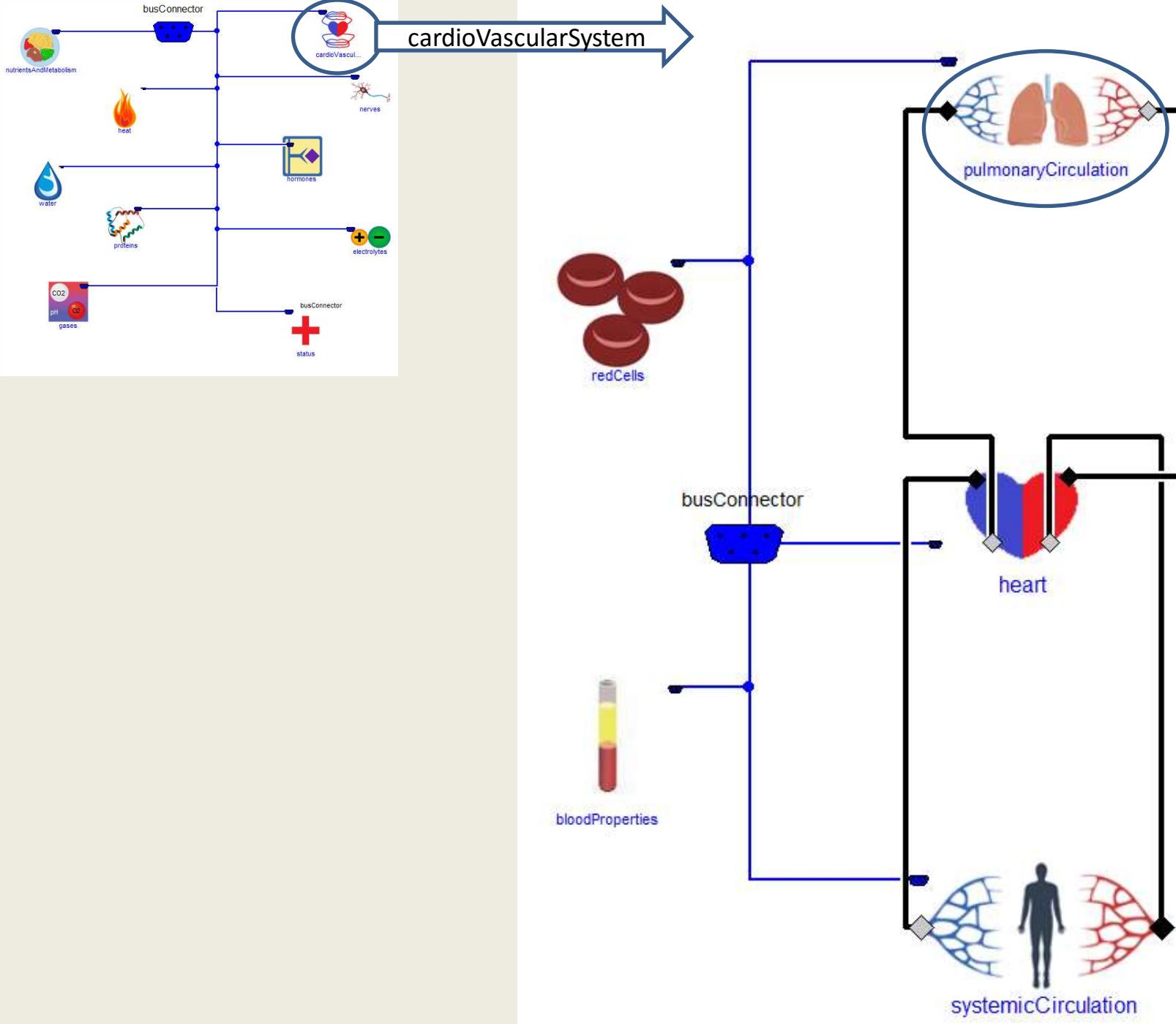
```
redeclare model extends Variables  
    T.Volume ArtysVol(varName="ArtysVol.Vol")  
        "Volume of oxygenated blood in body.";  
    T.Fraction BloodVol_Hct(varName="BloodVol.Hct")  
        "Heamatocrit = red cells / blood.";  
    ...  
equation  
    connect(ArtysVol.y, busConnector.ArtysVol);  
    connect(BloodVol_Hct.y, busConnector.BloodVol_Hct);  
    ...  
end Variables;
```

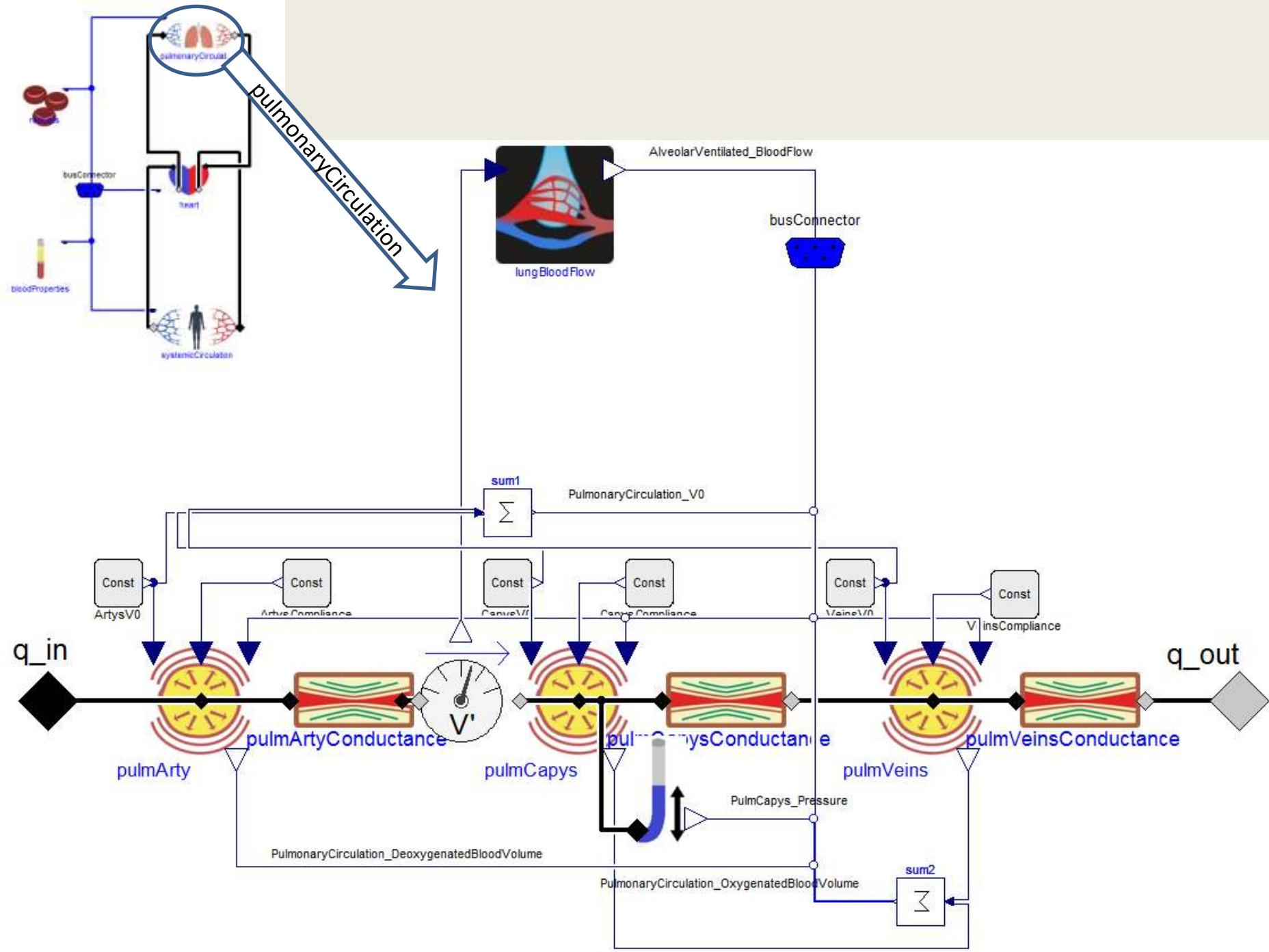
IO_Bus usage

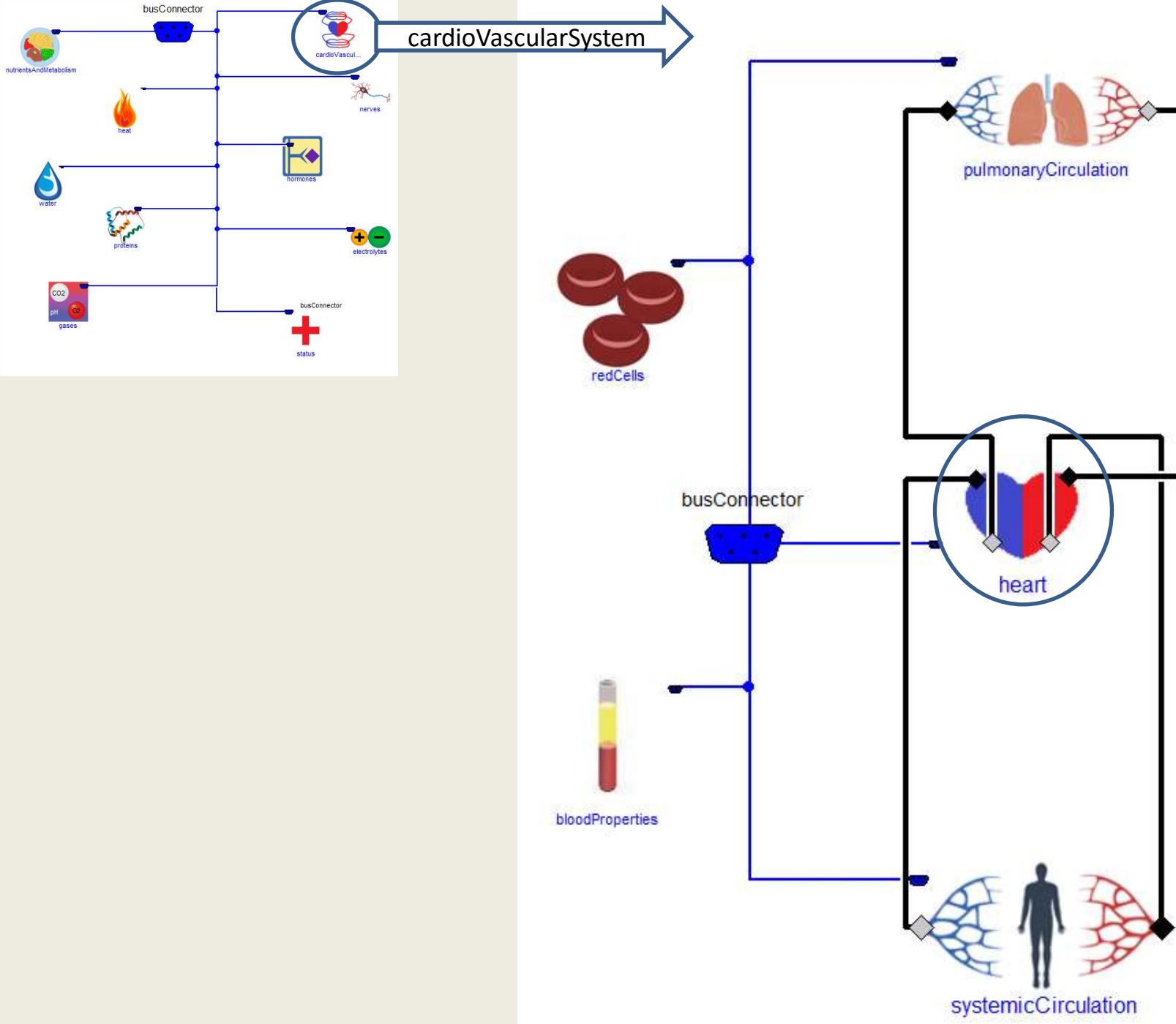


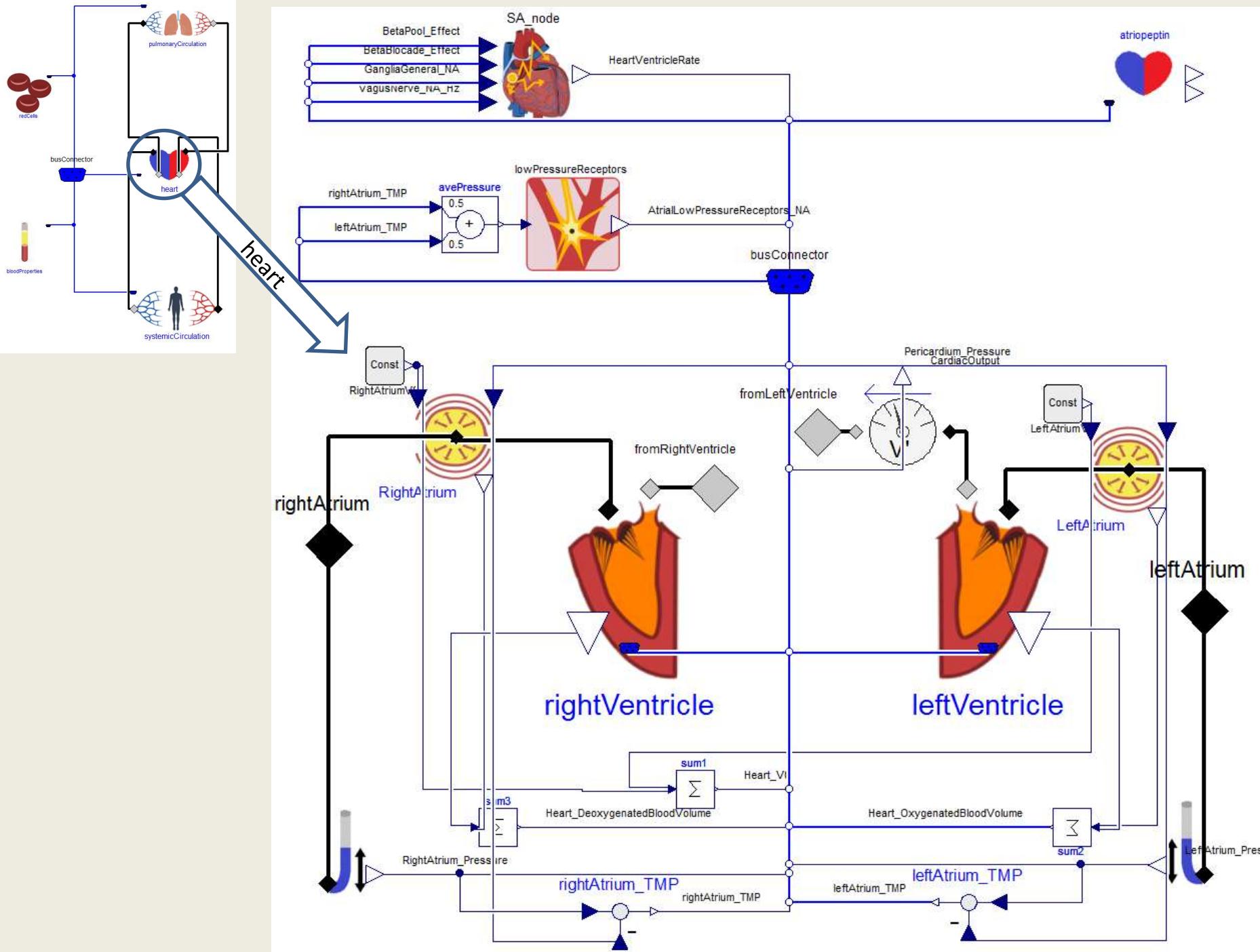


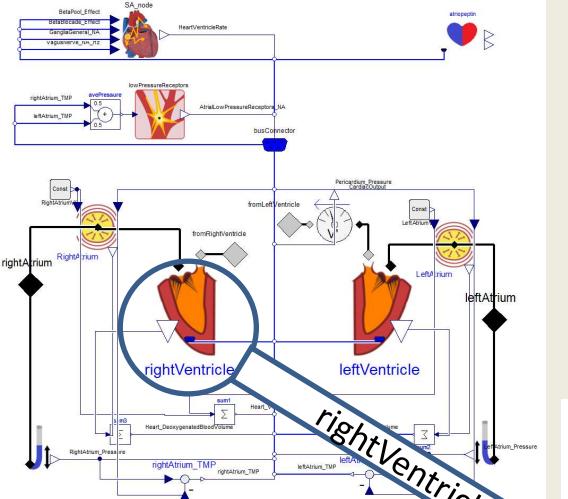




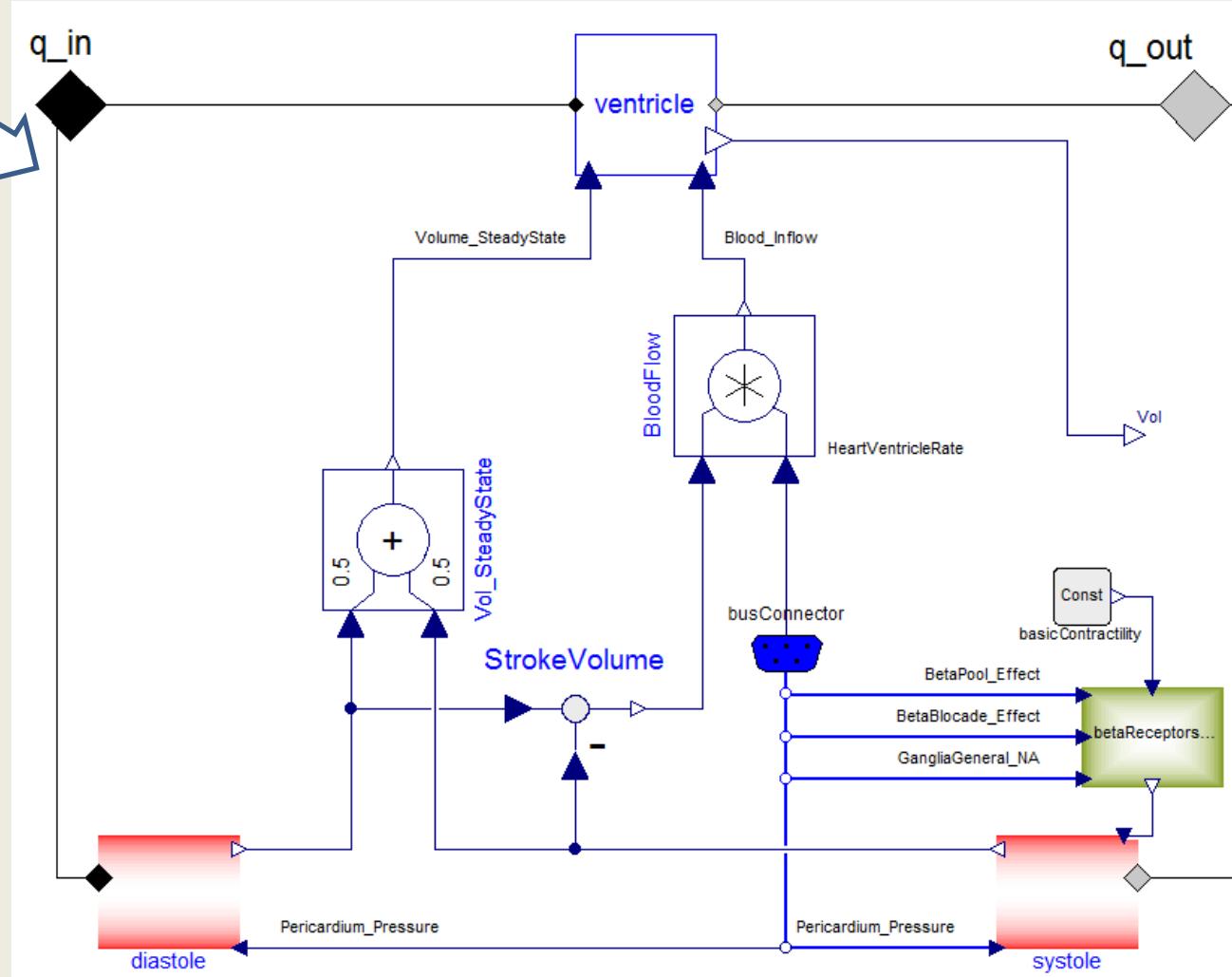


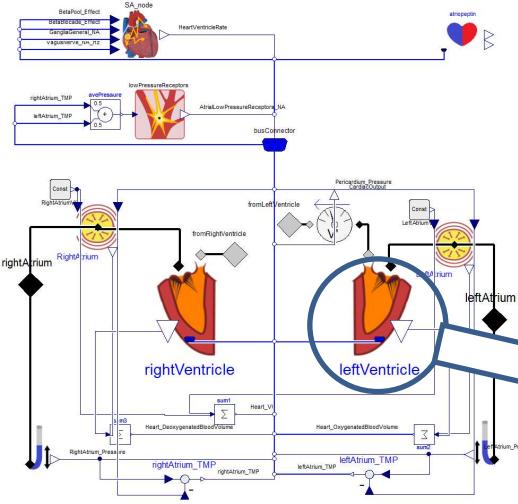




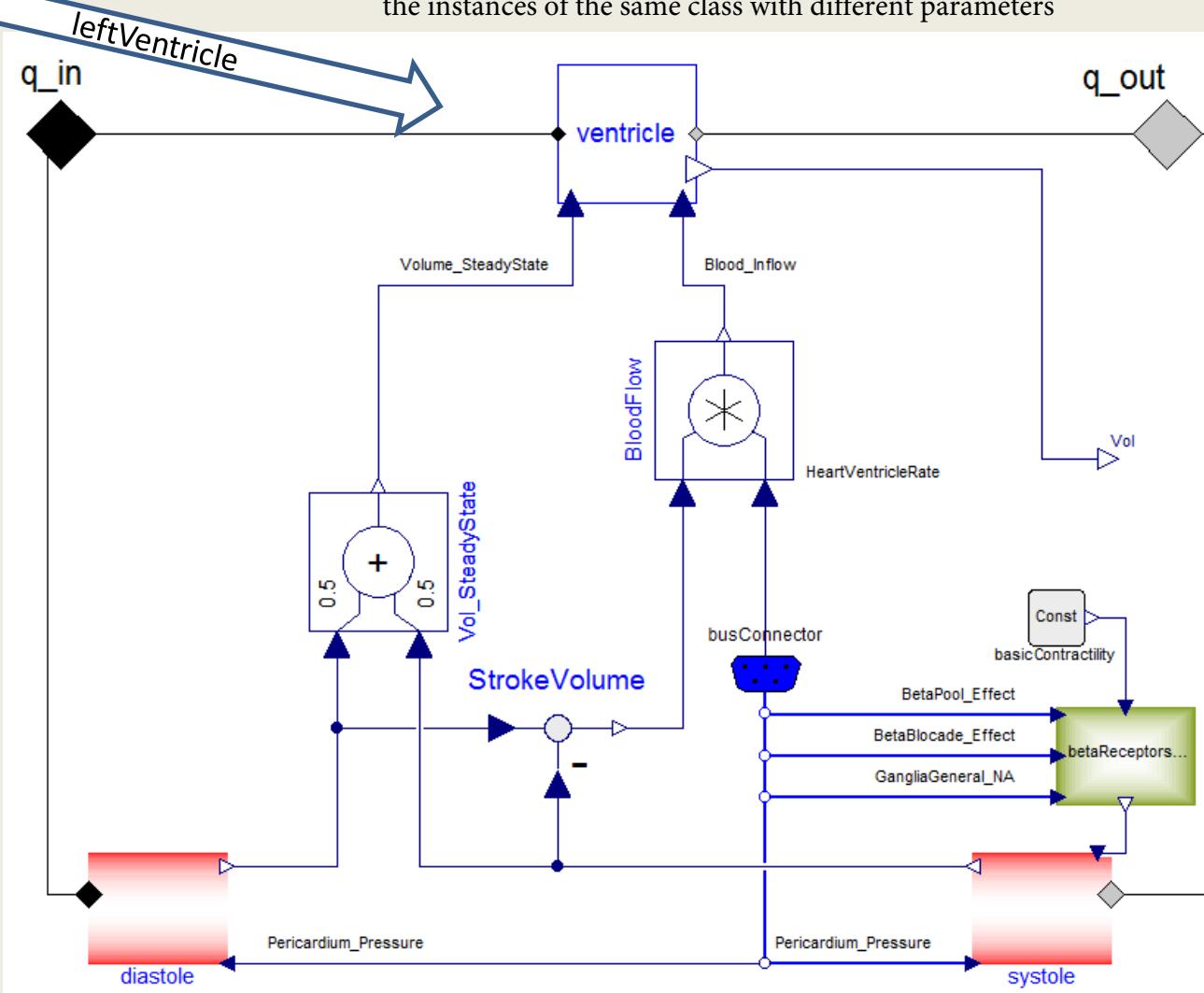


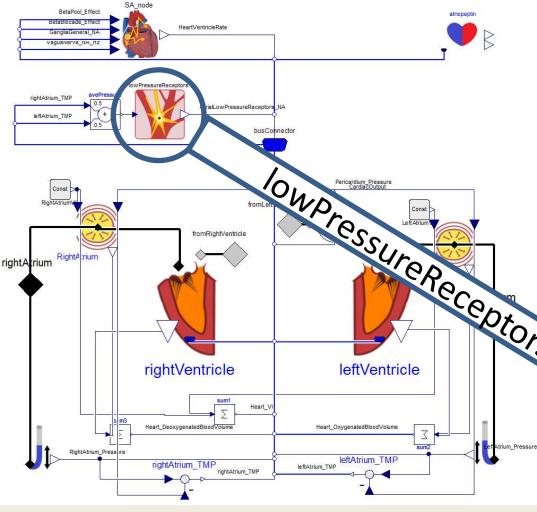
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the instances of the same class with different parameters



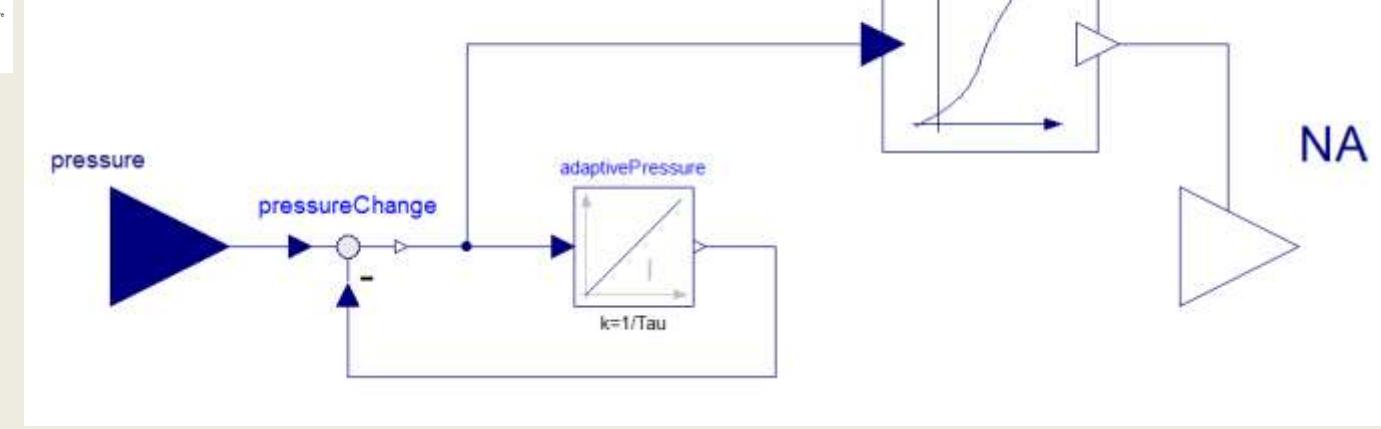


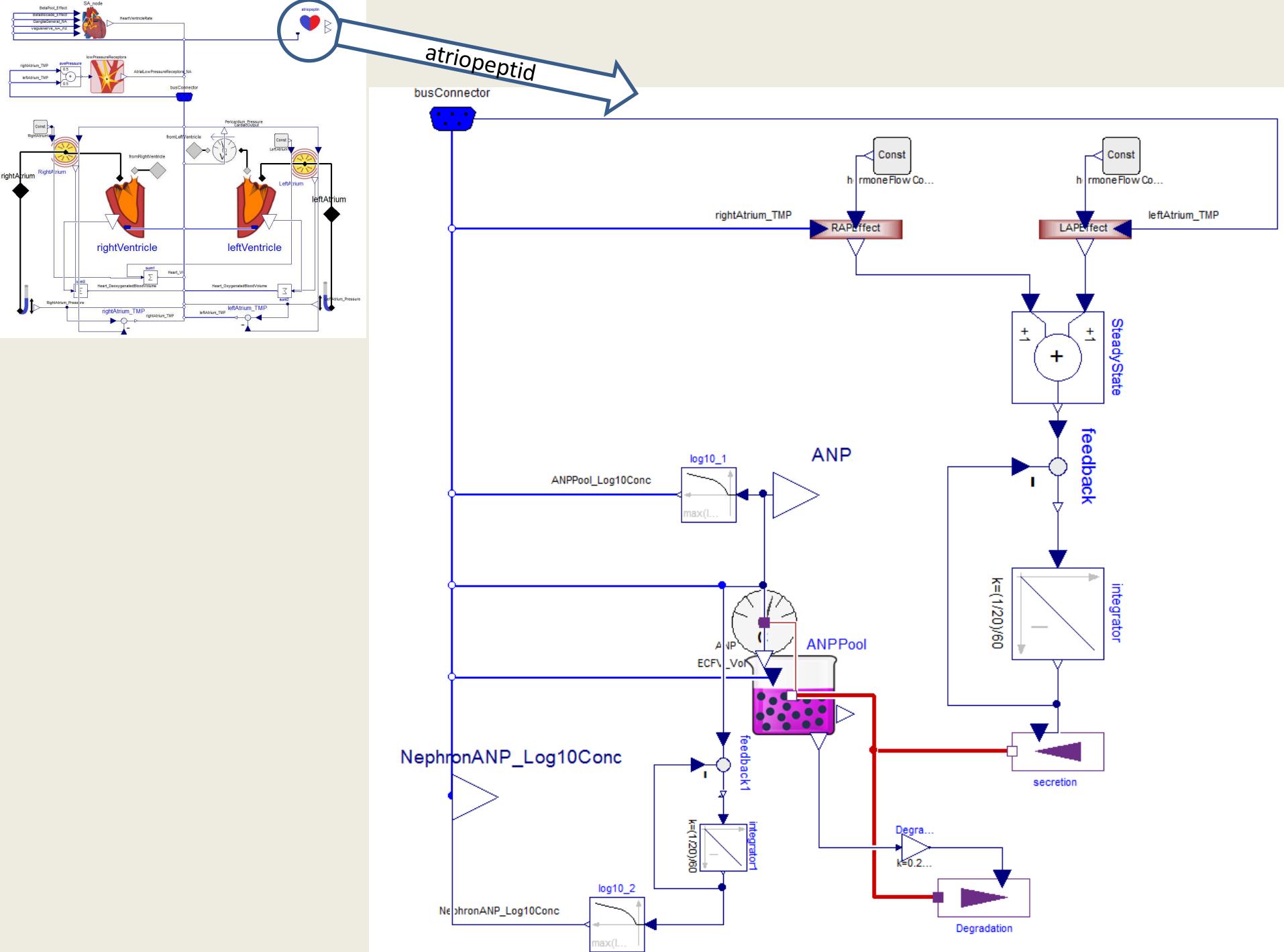
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the instances of the same class with different parameters

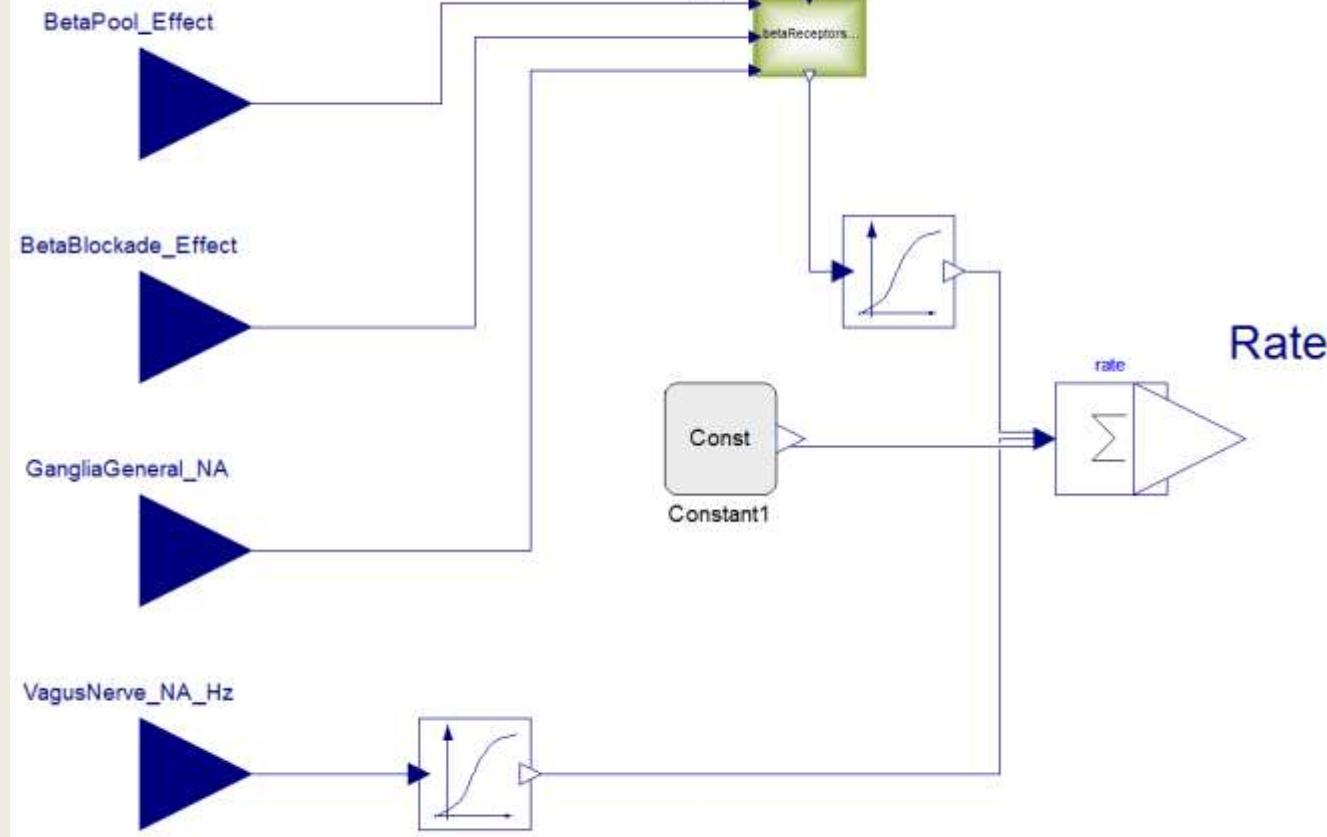
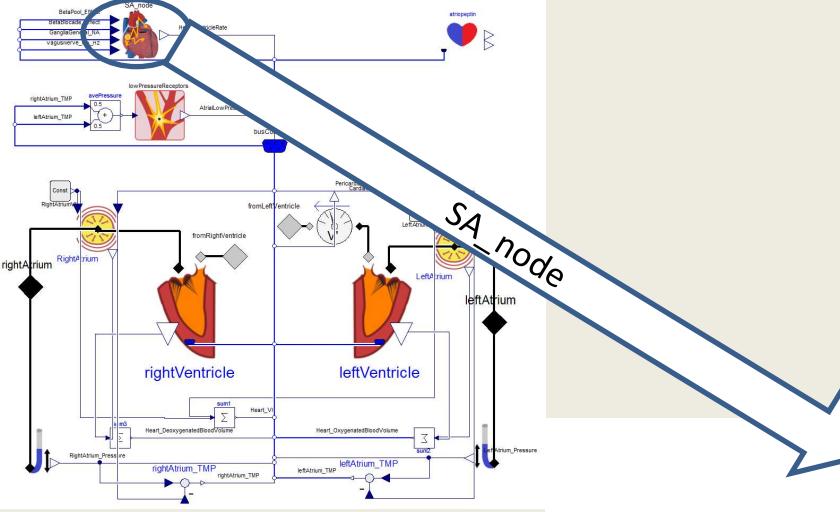


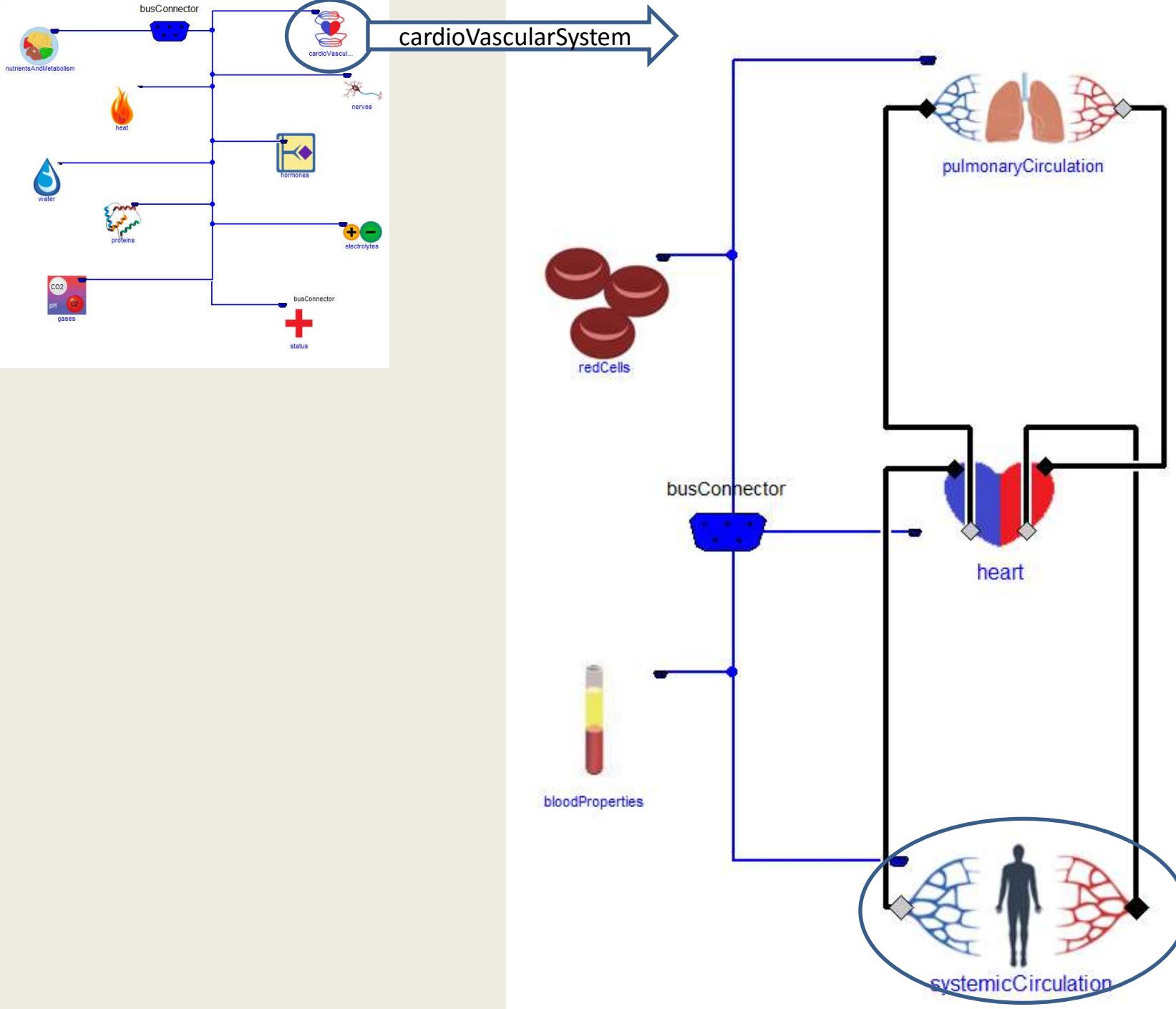


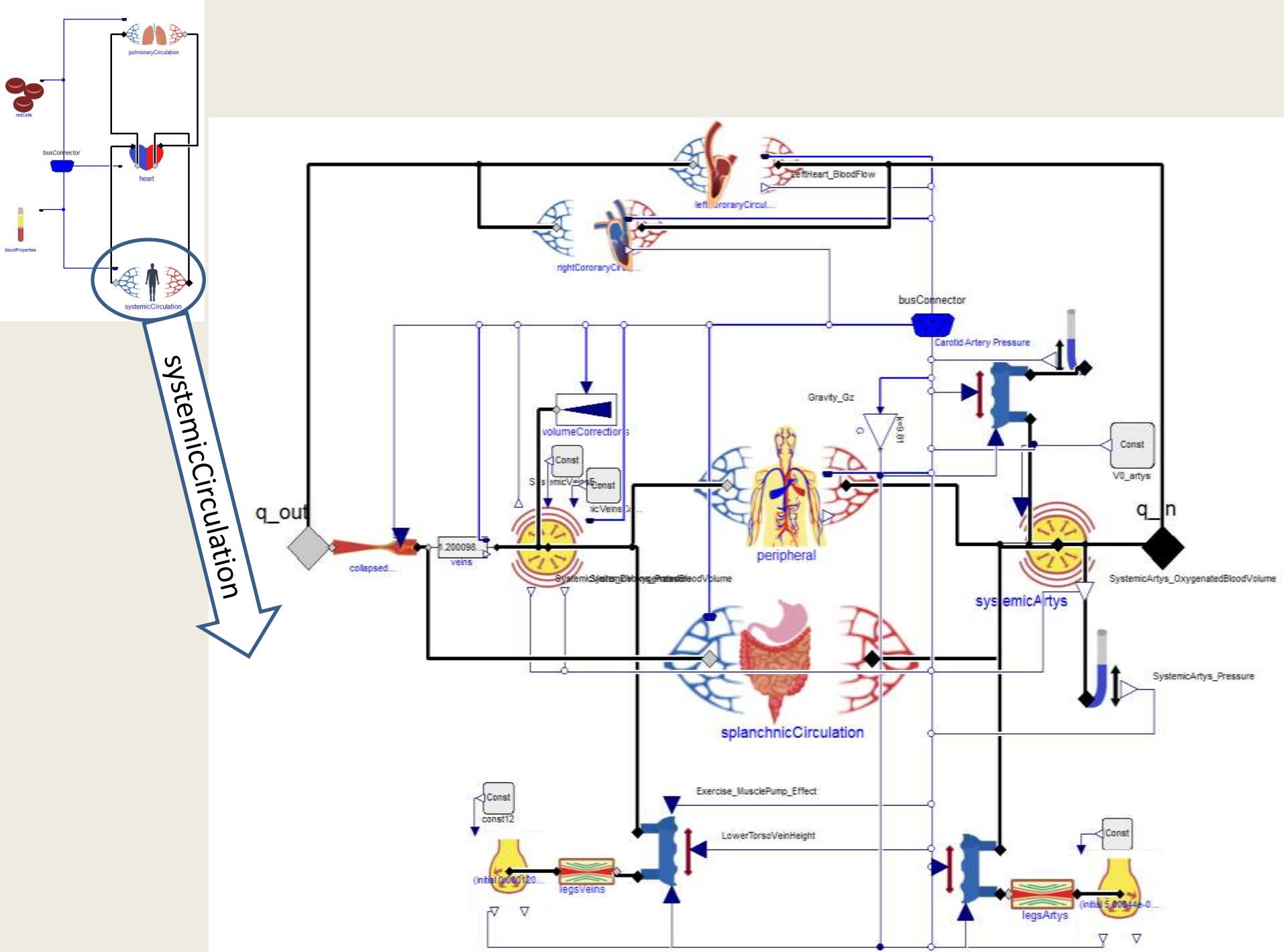
lowPressureReceptors

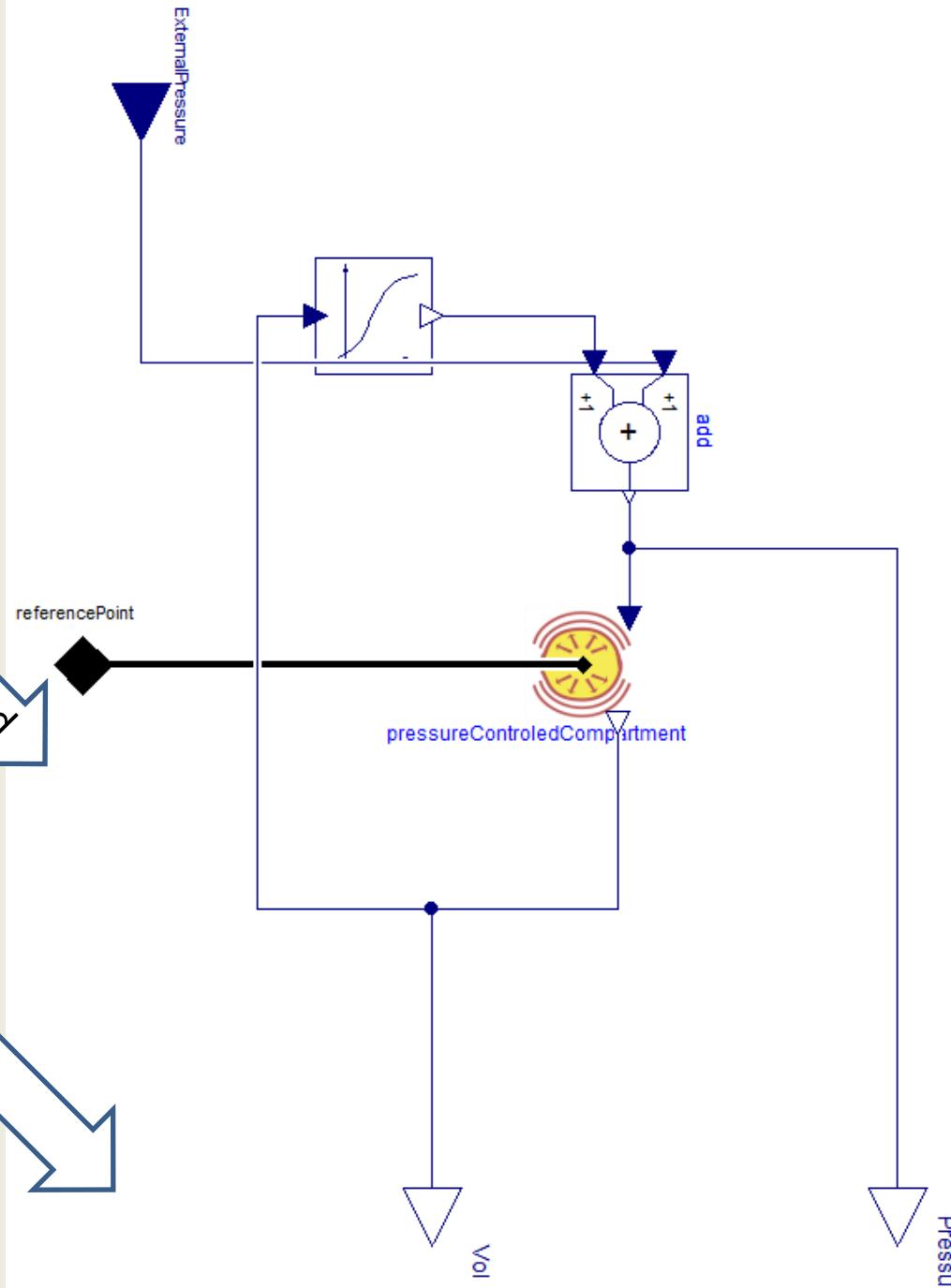
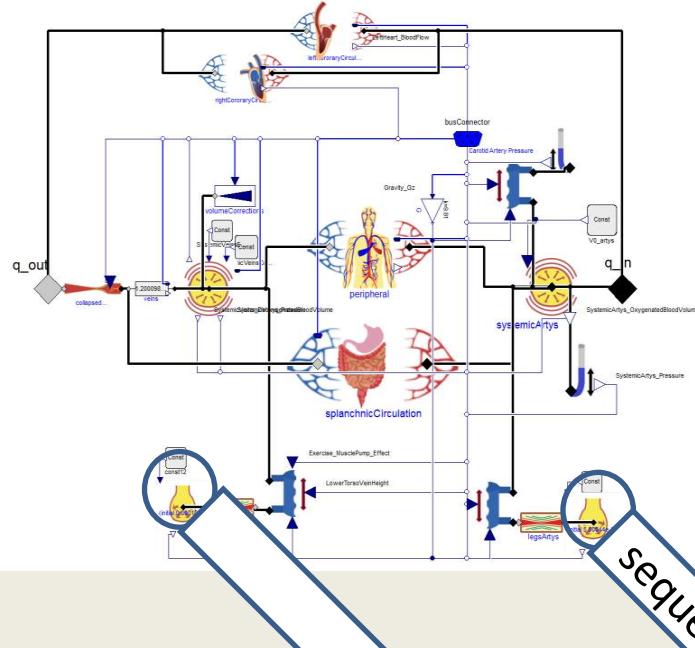




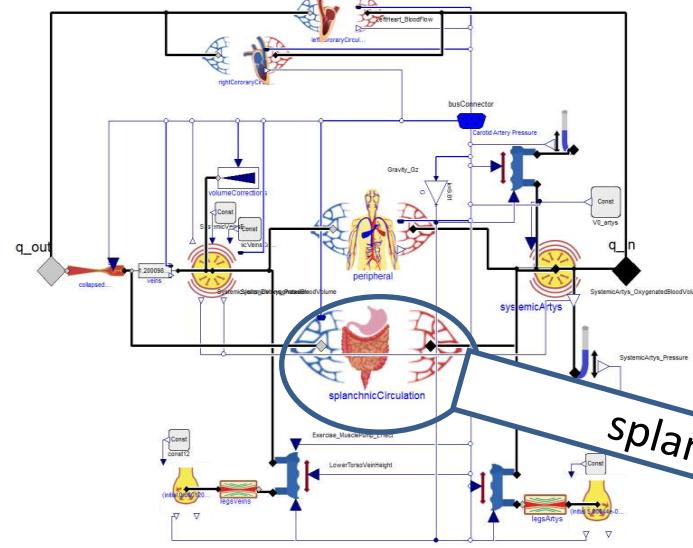




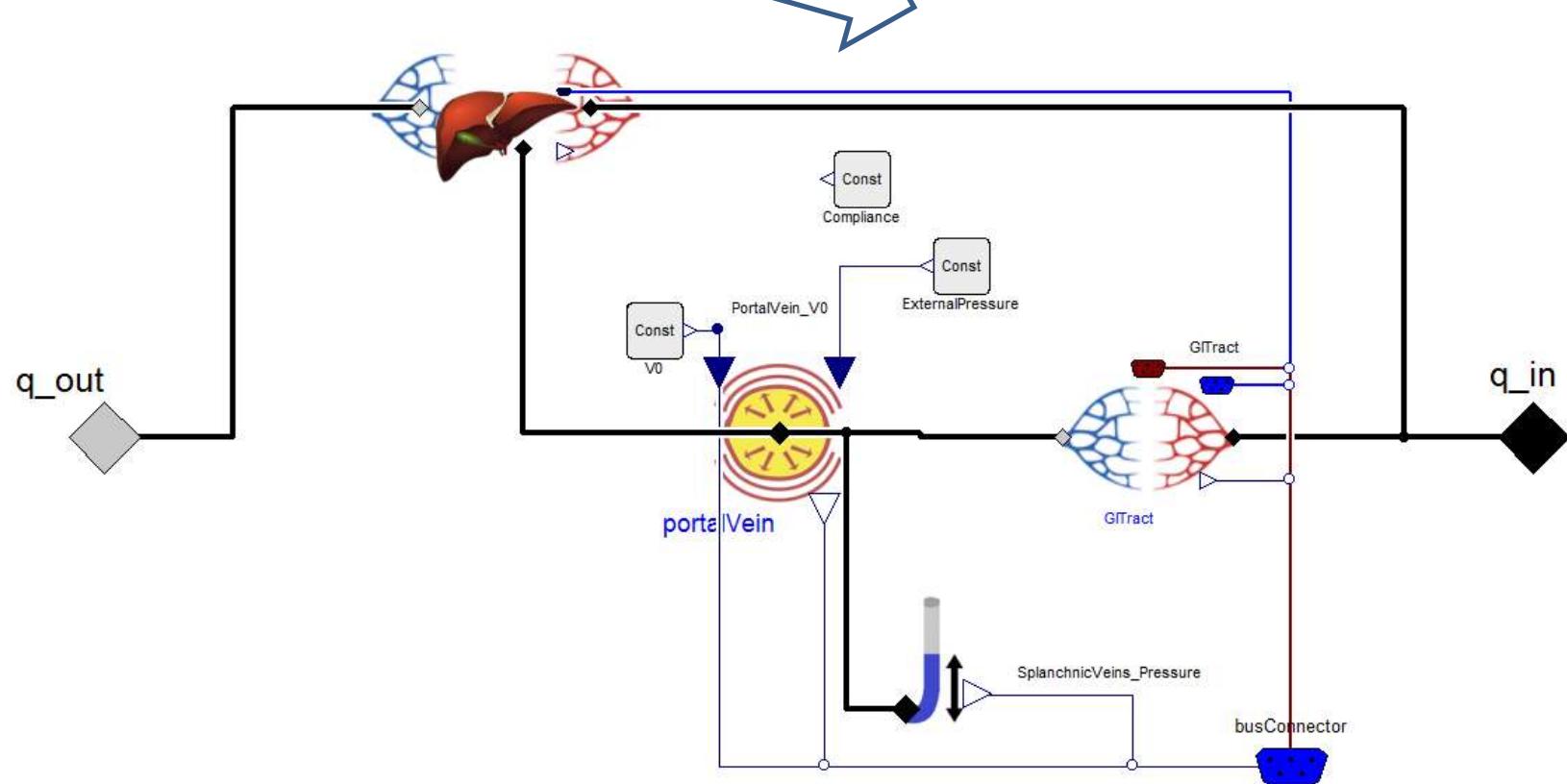


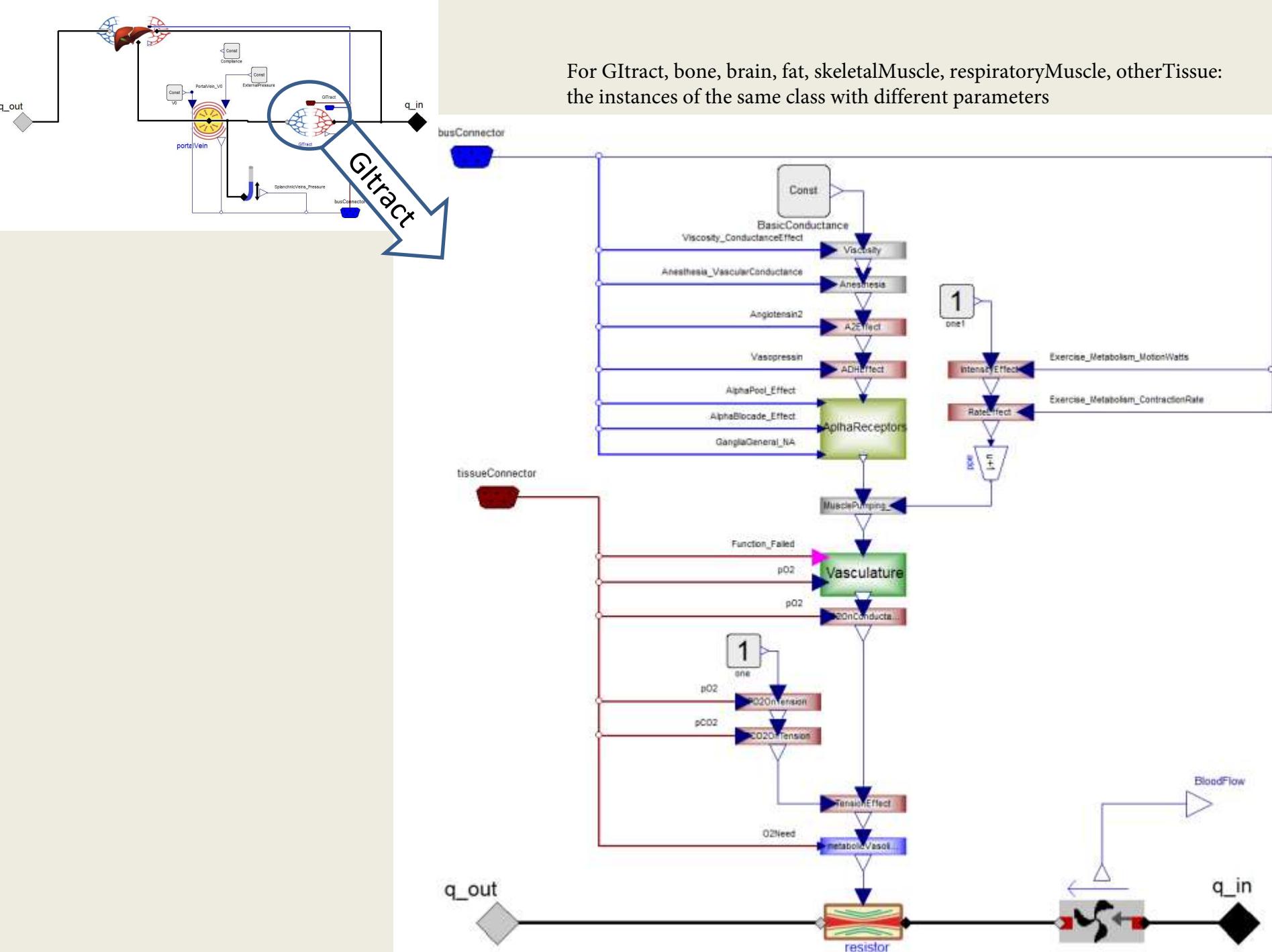


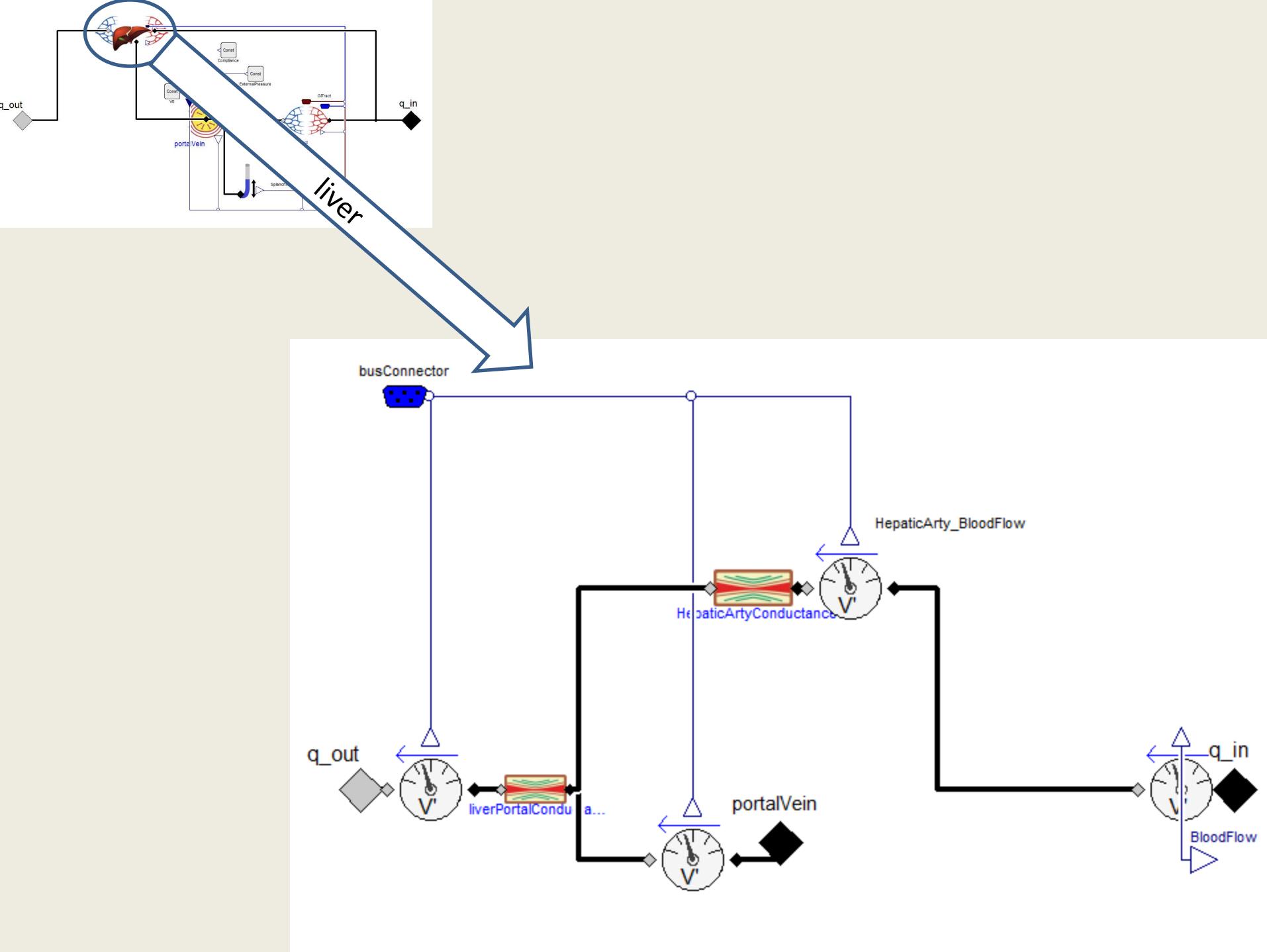
The instances of the same class with different parameters

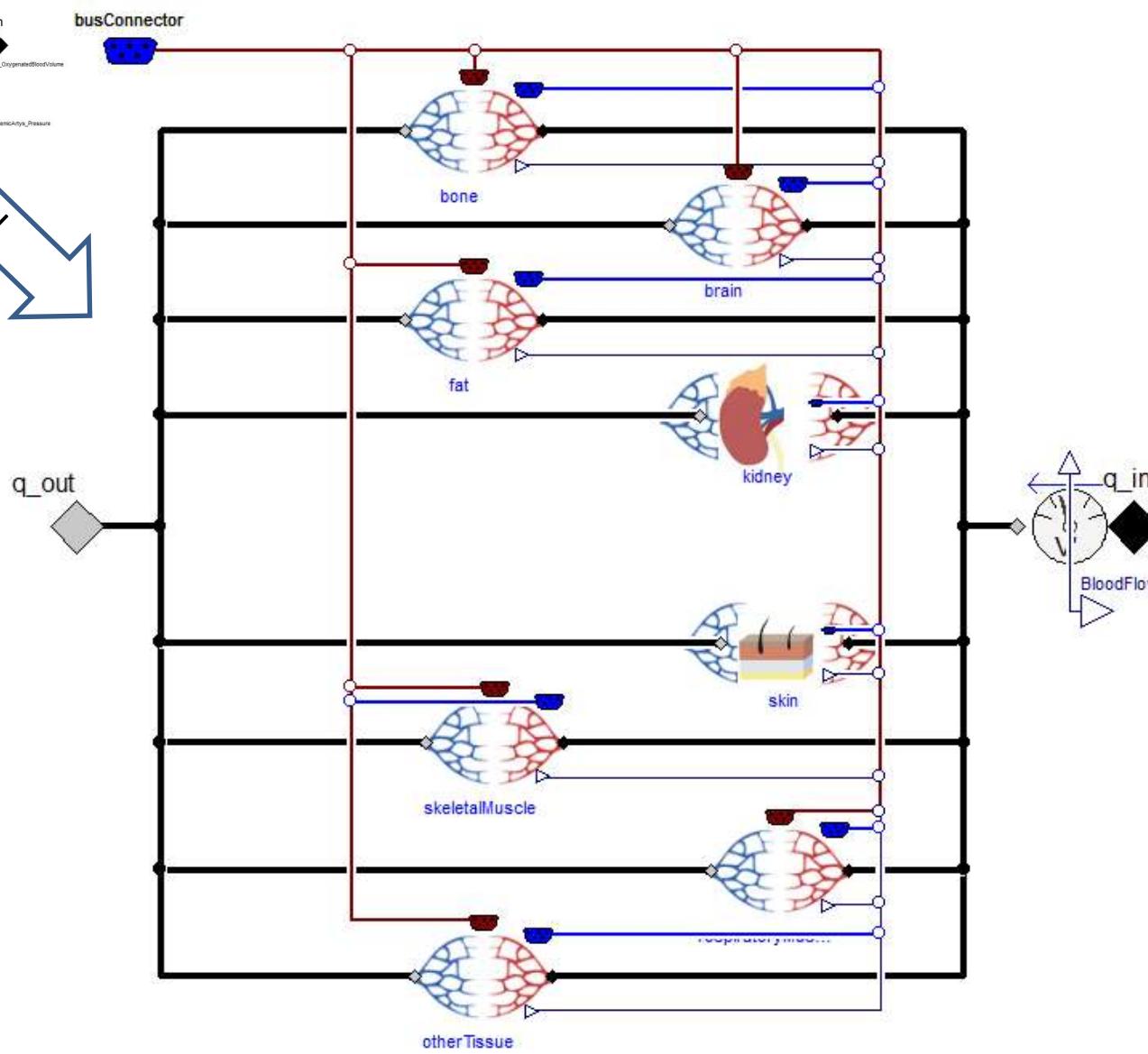
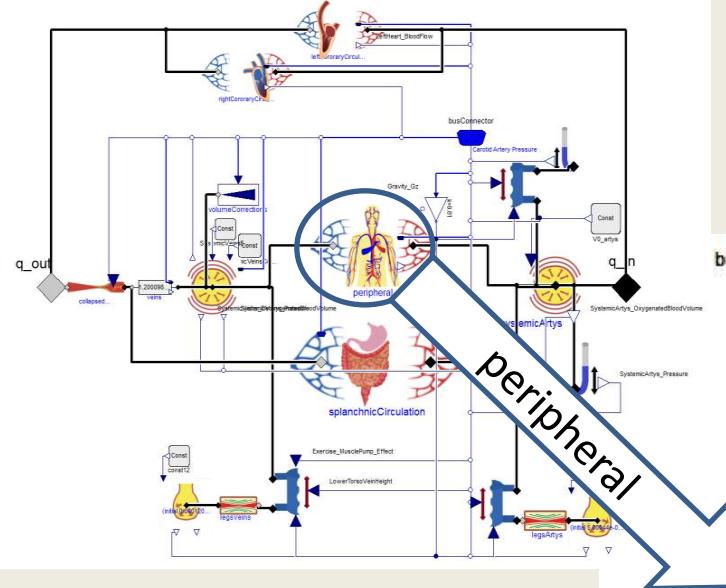


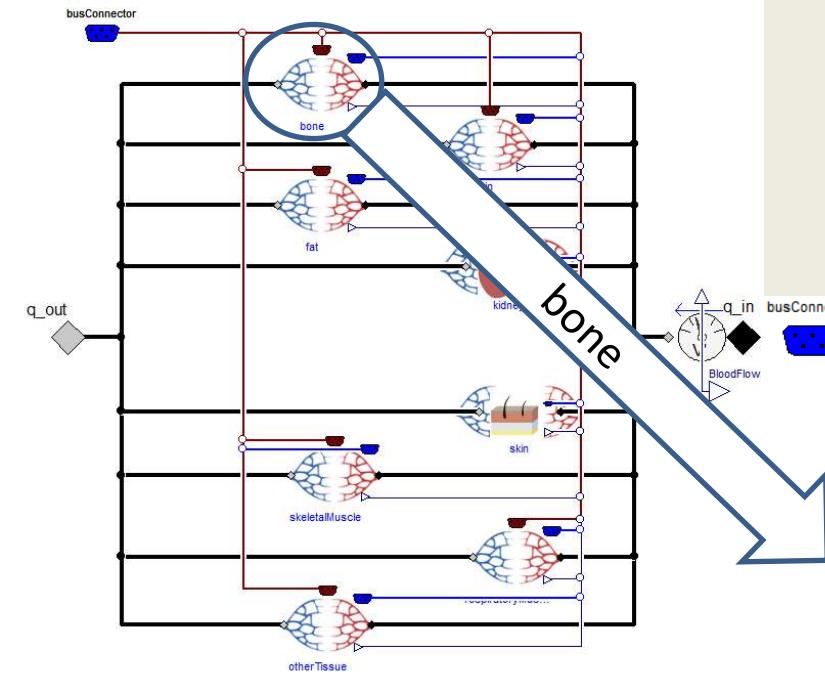
splanchnicCirculation



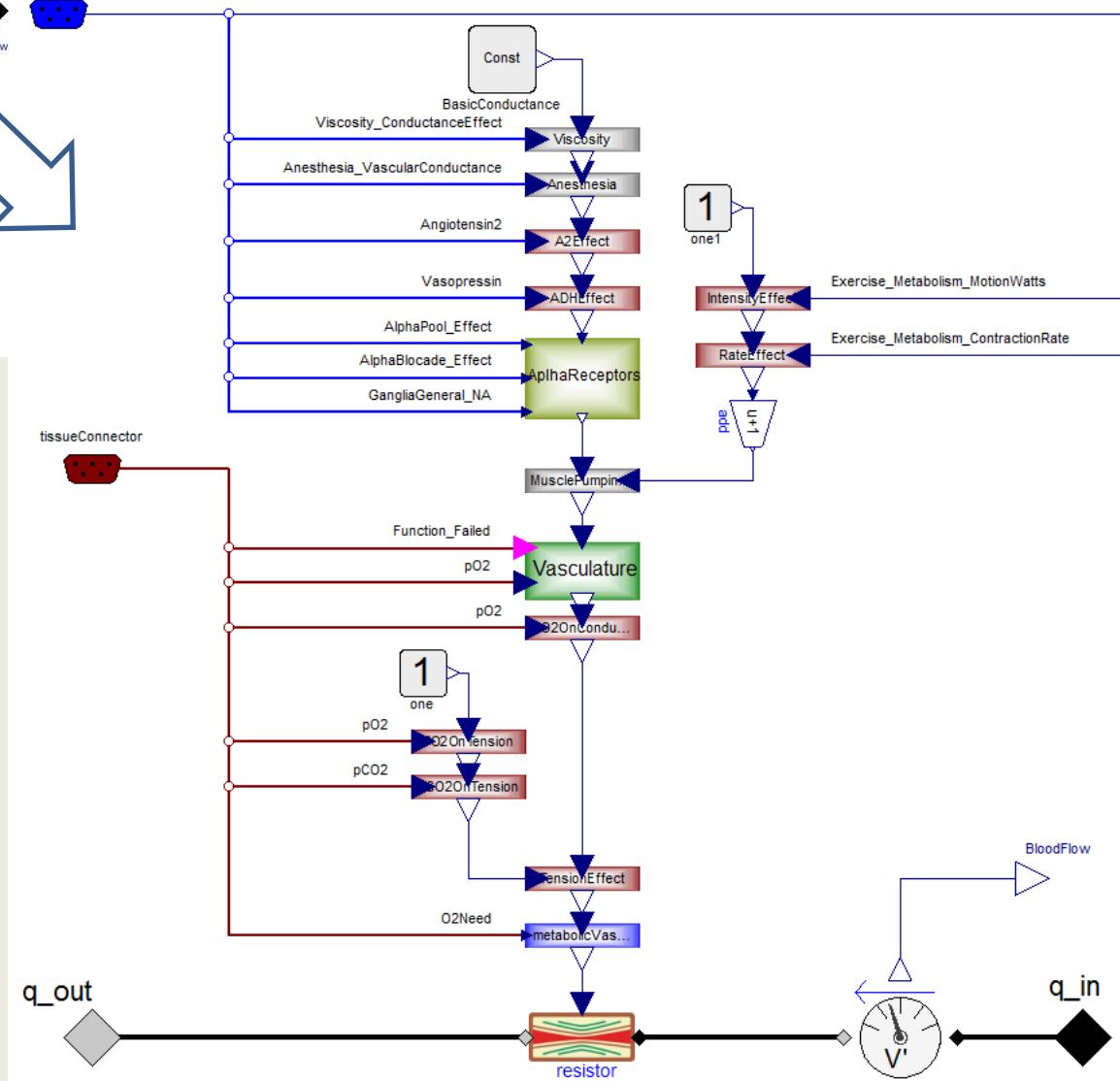


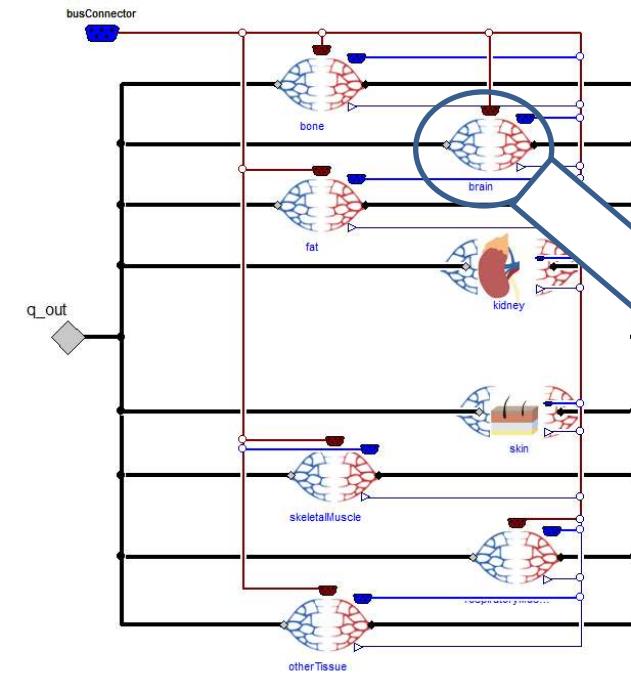




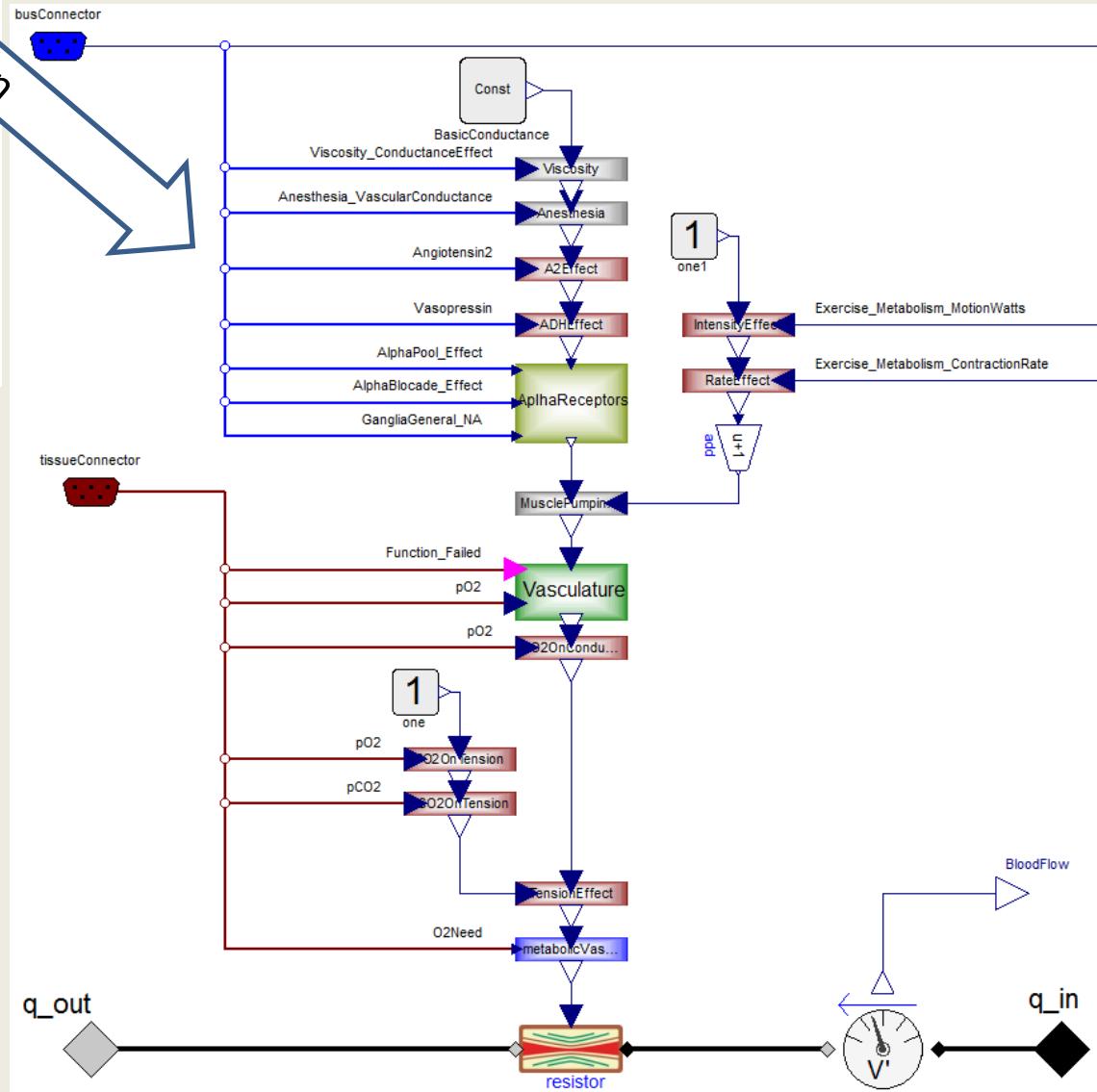


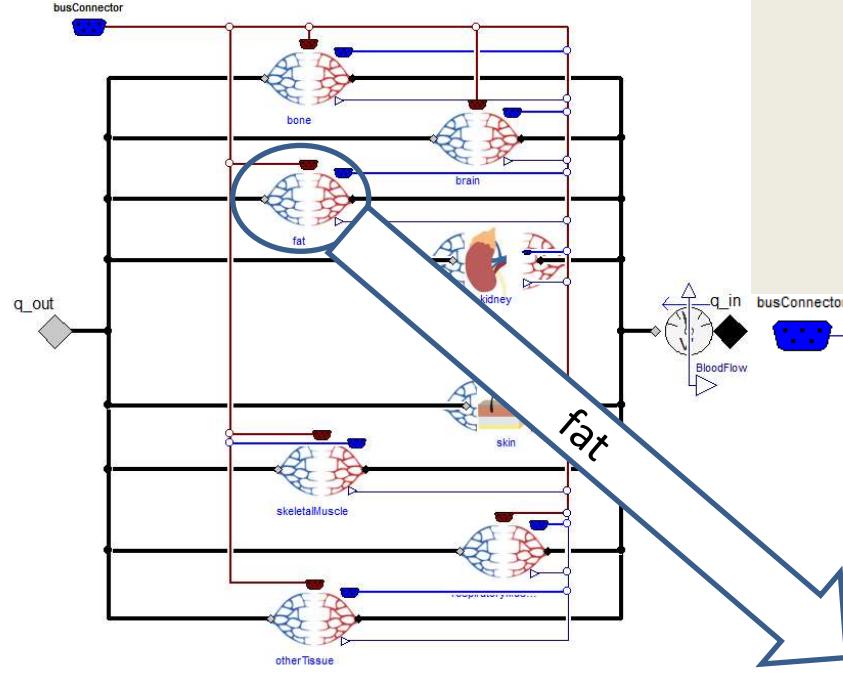
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the instances of the same class with different parameters



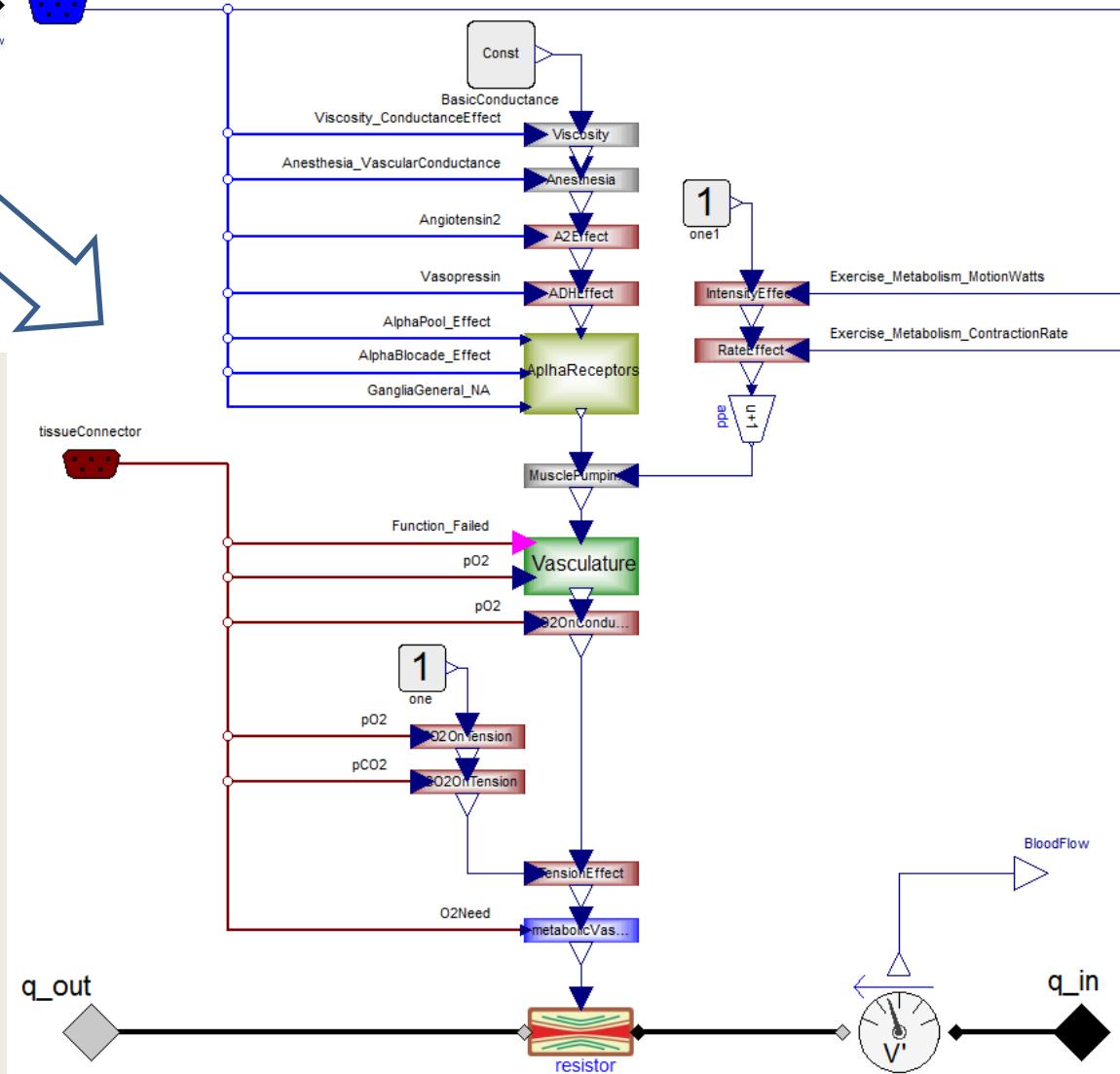


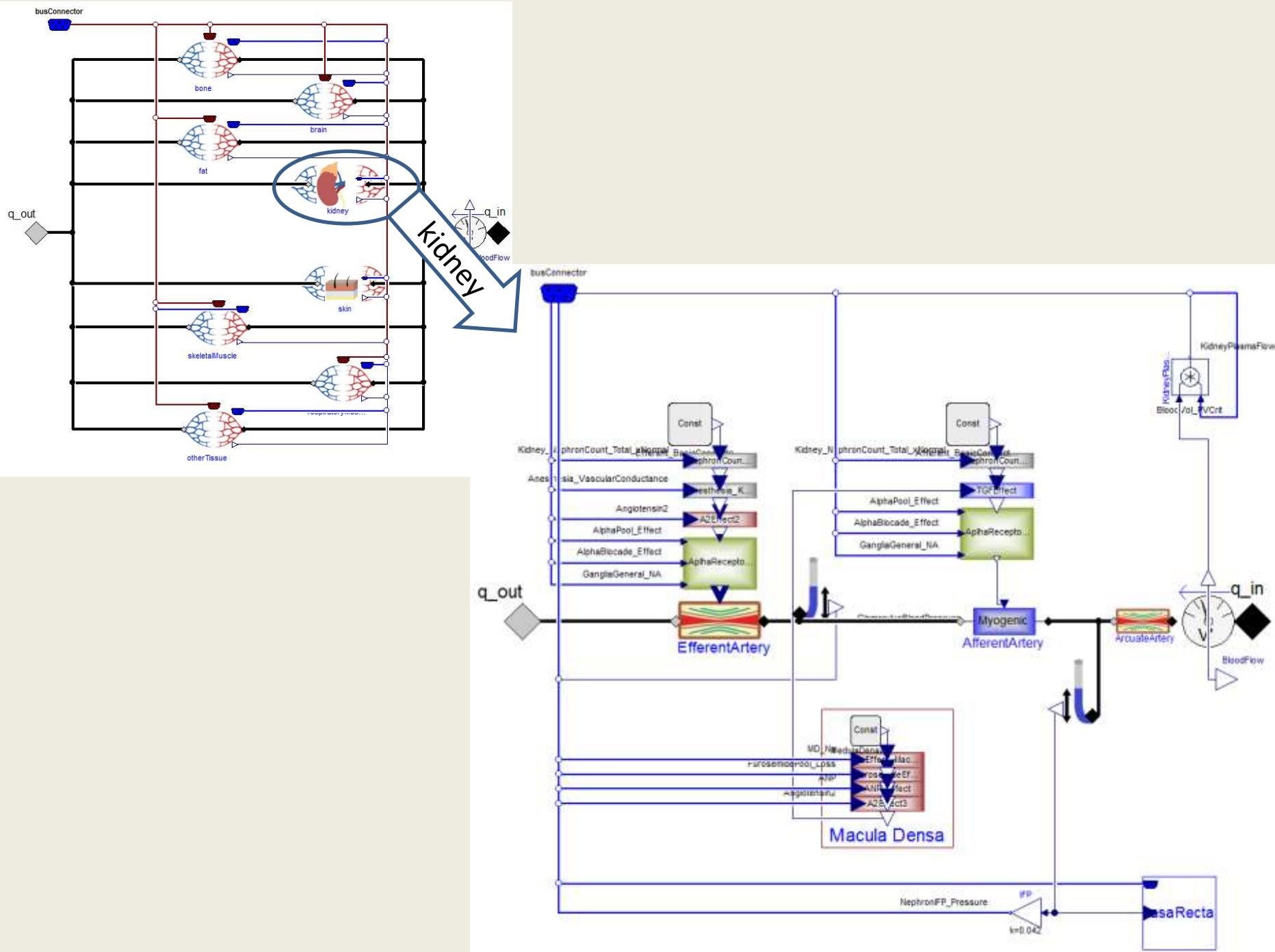
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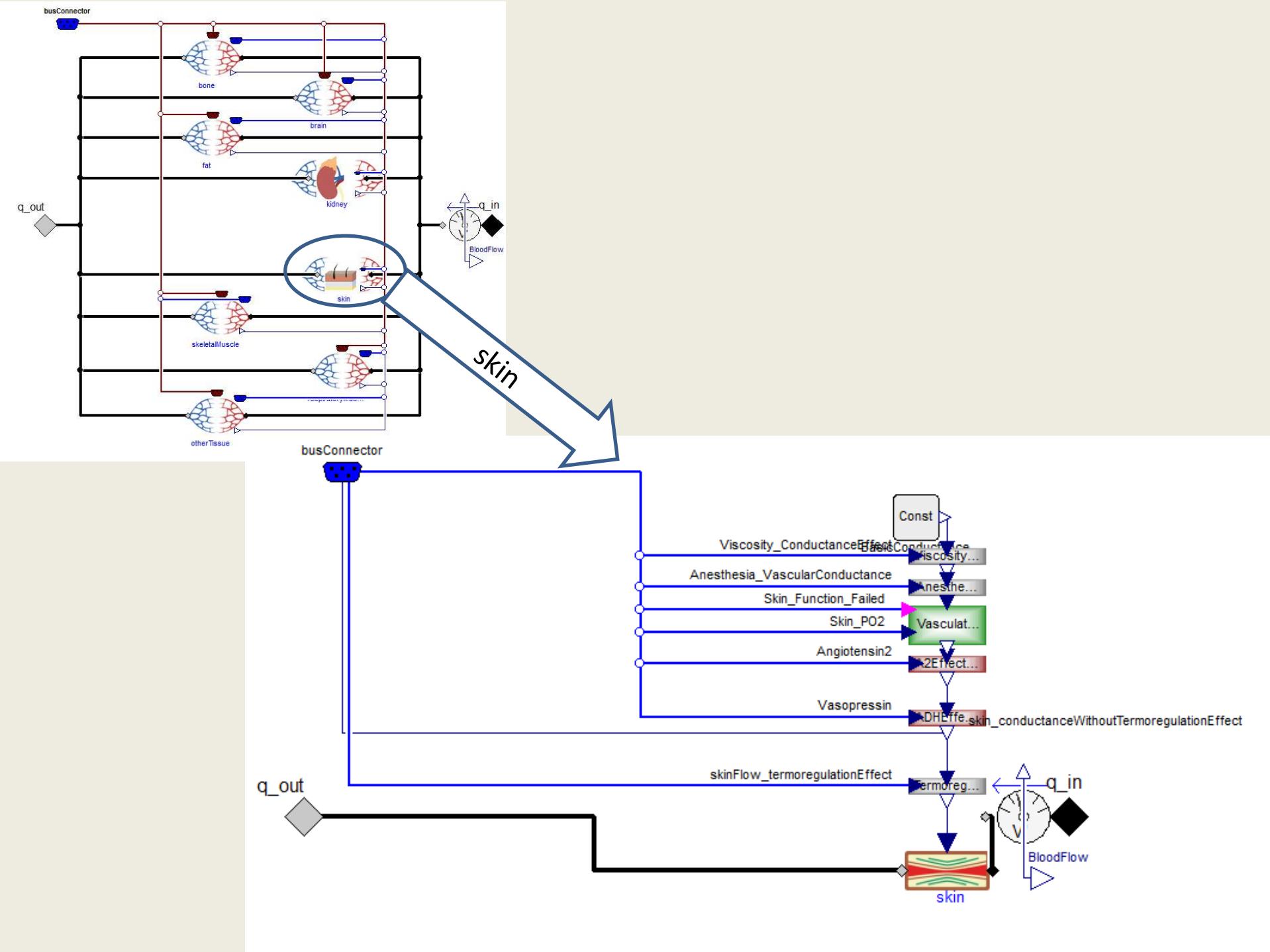


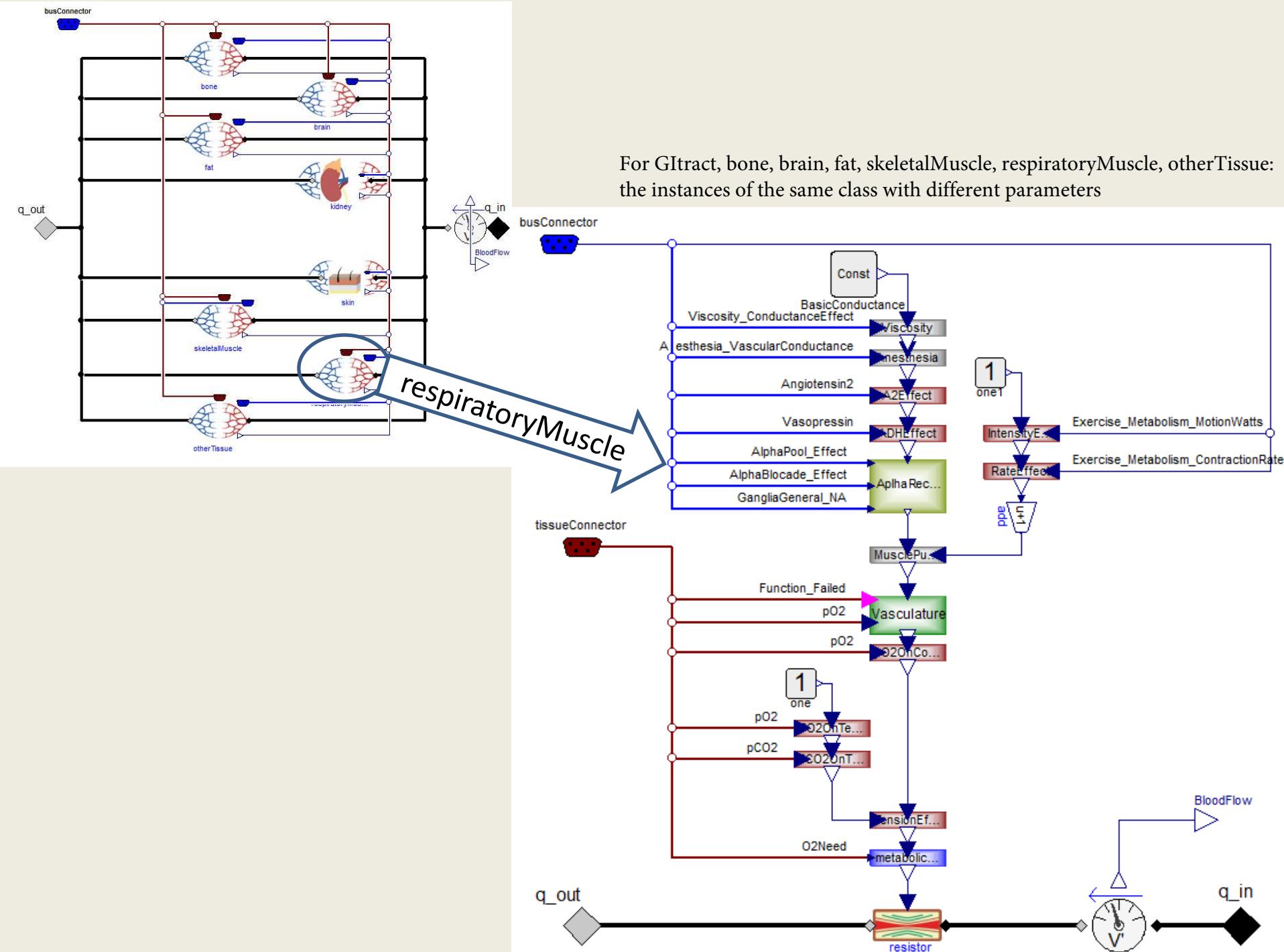


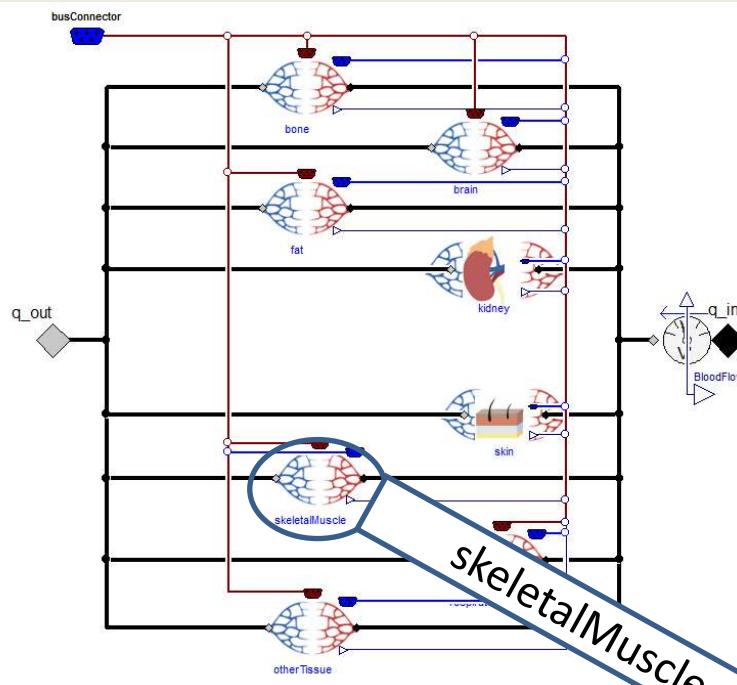
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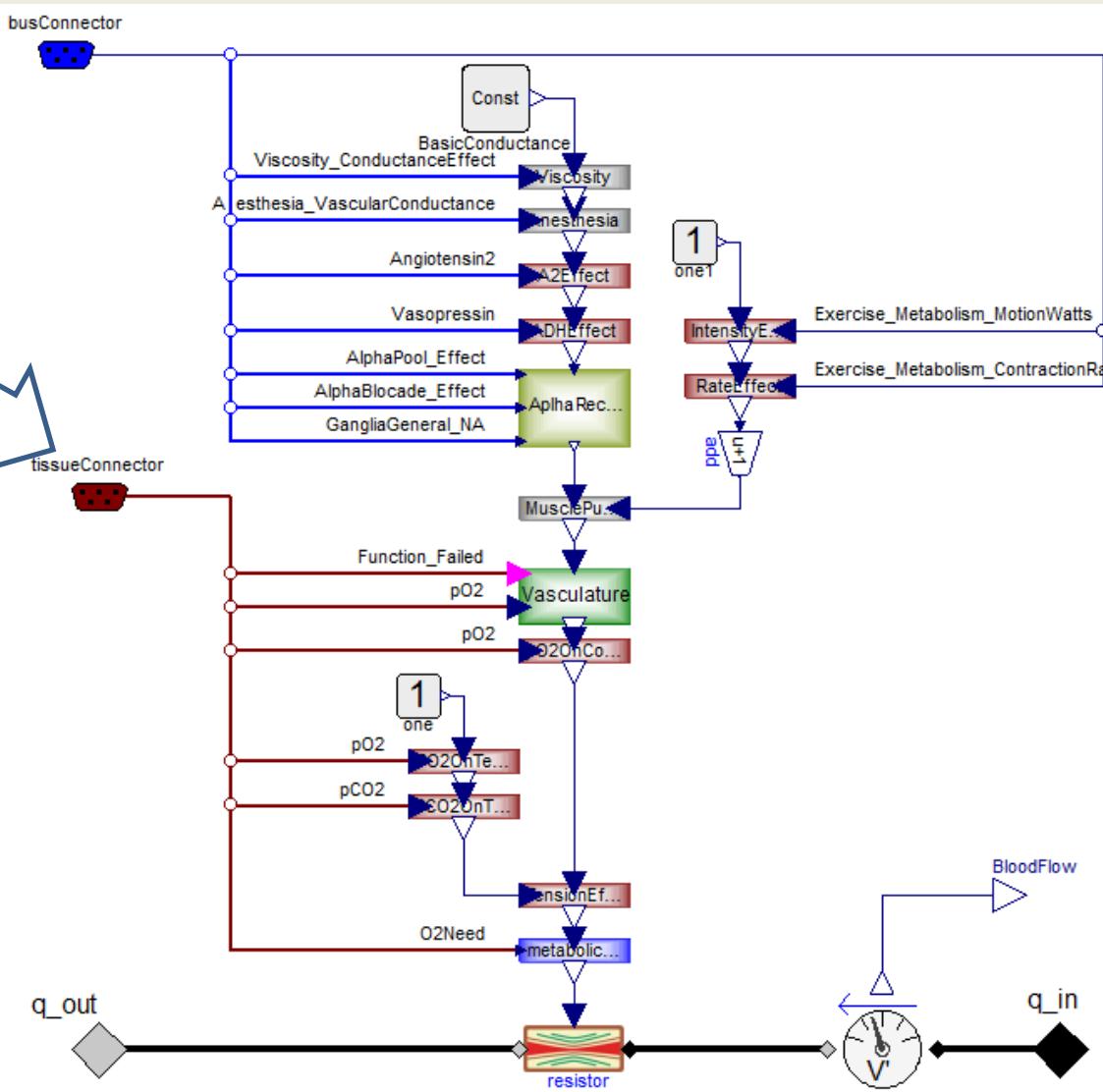


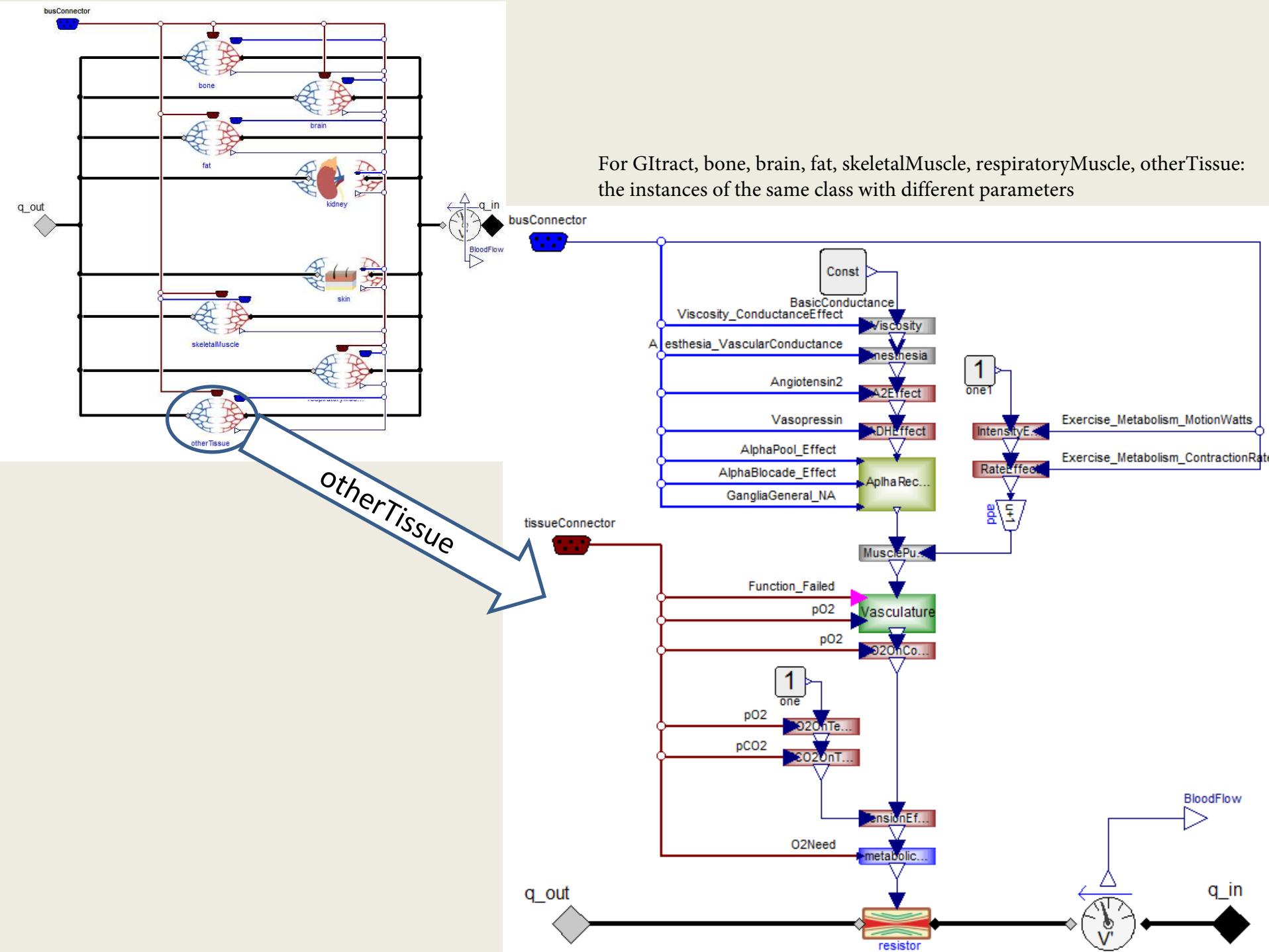


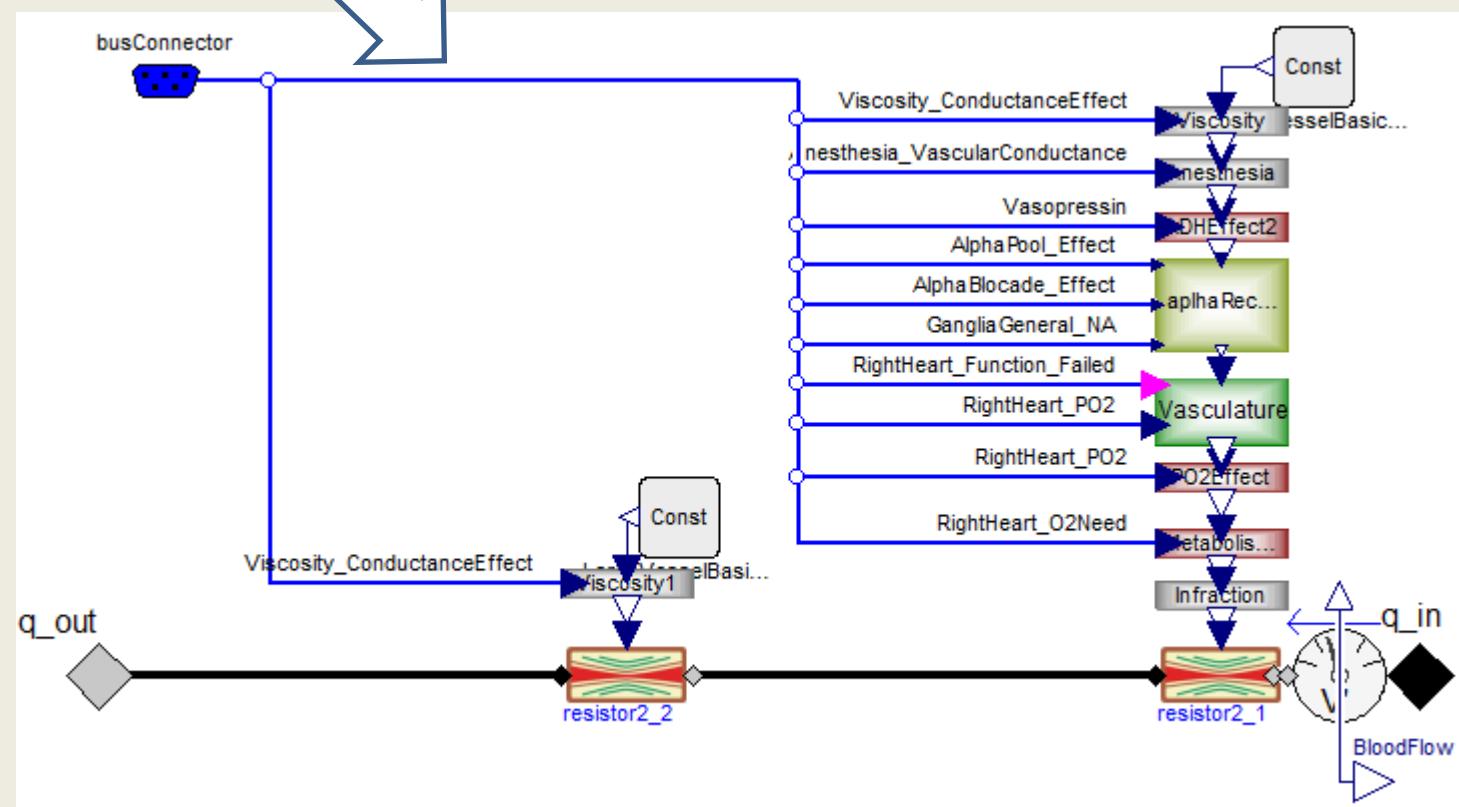
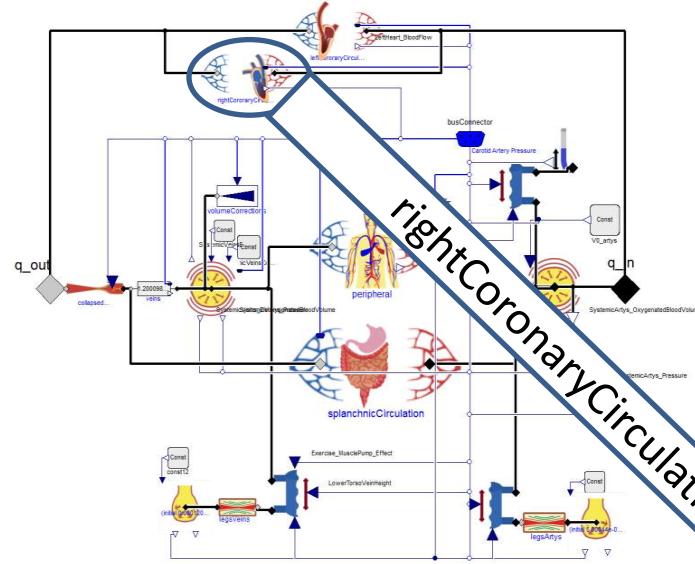


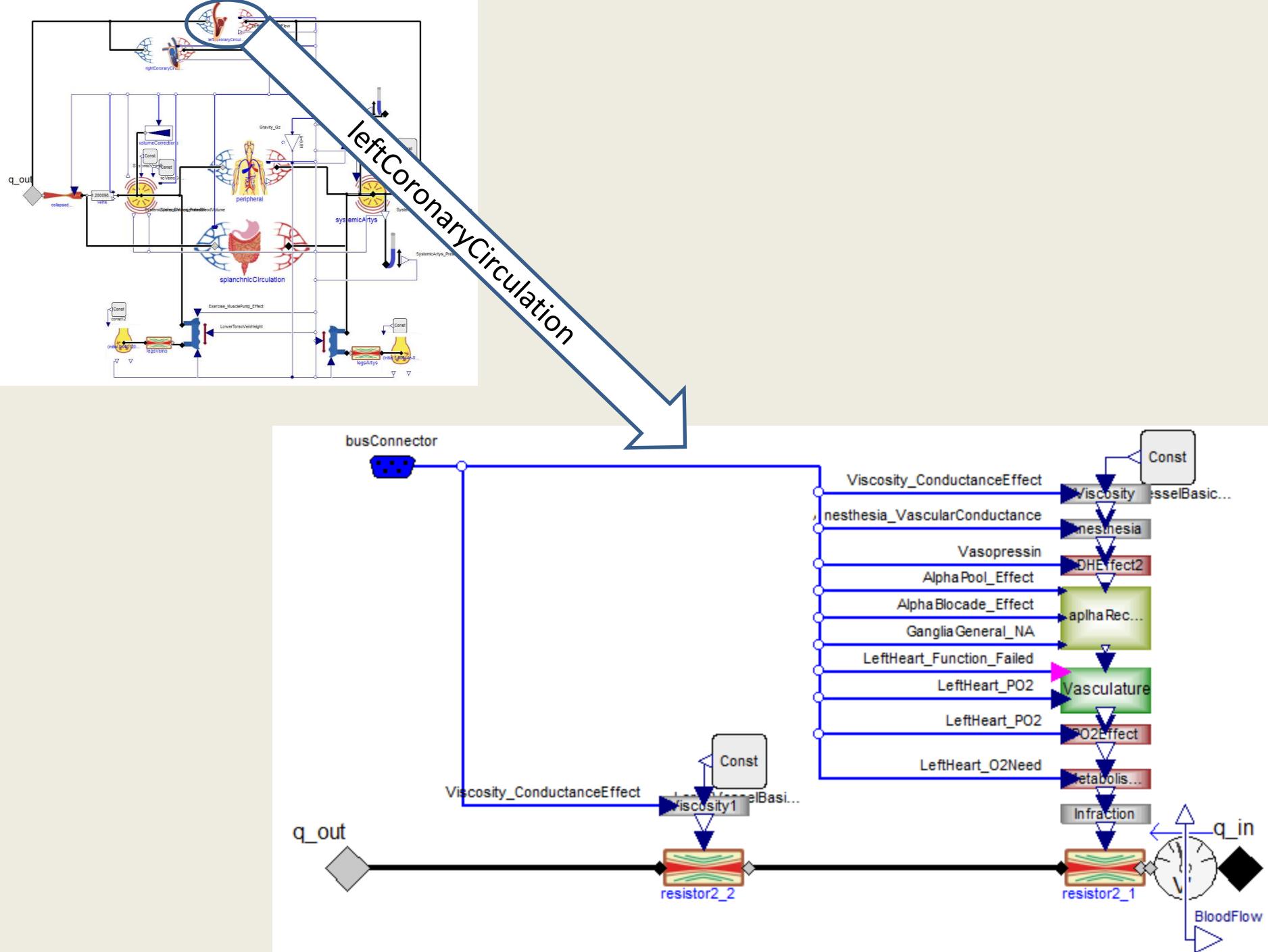


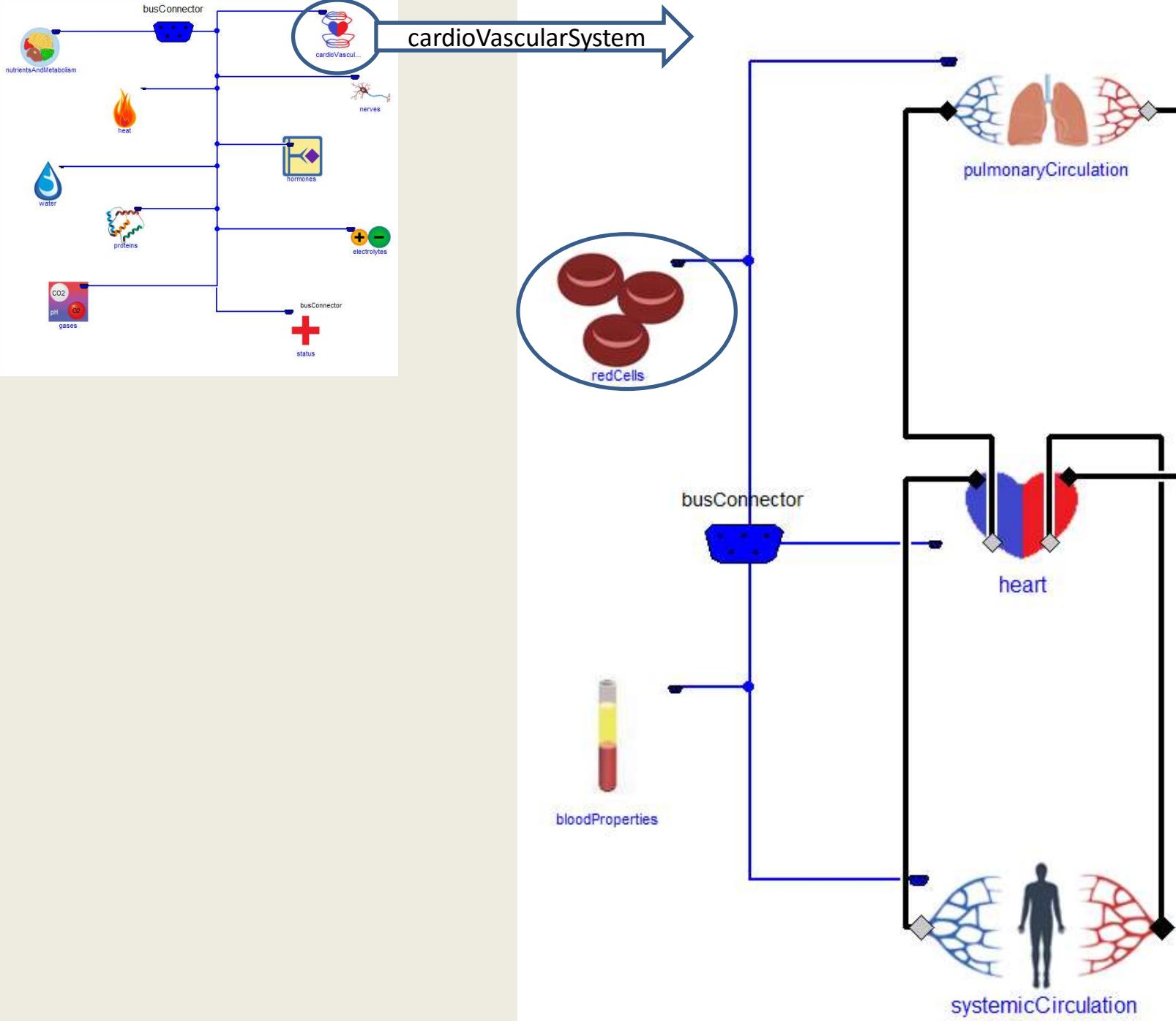
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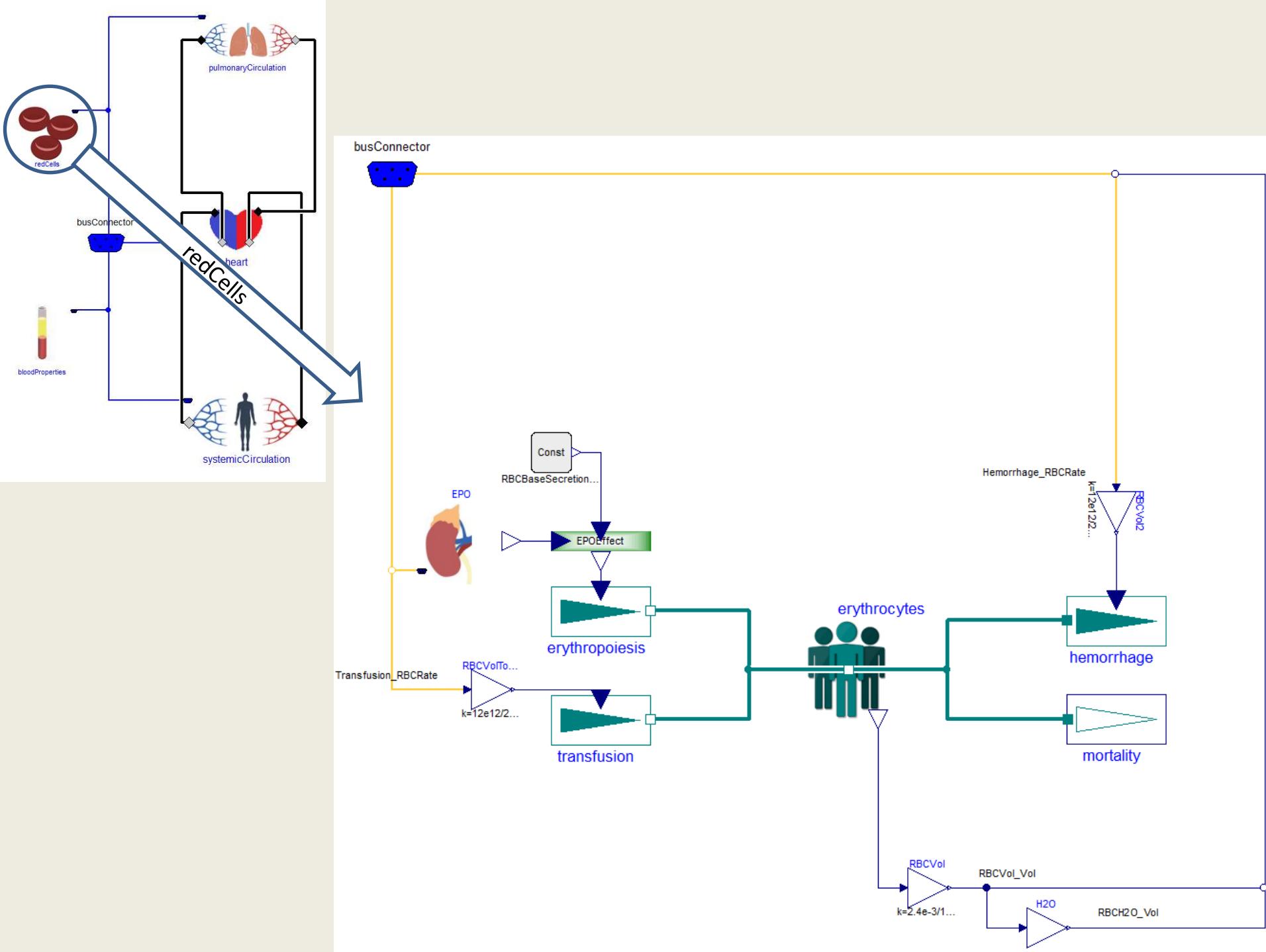


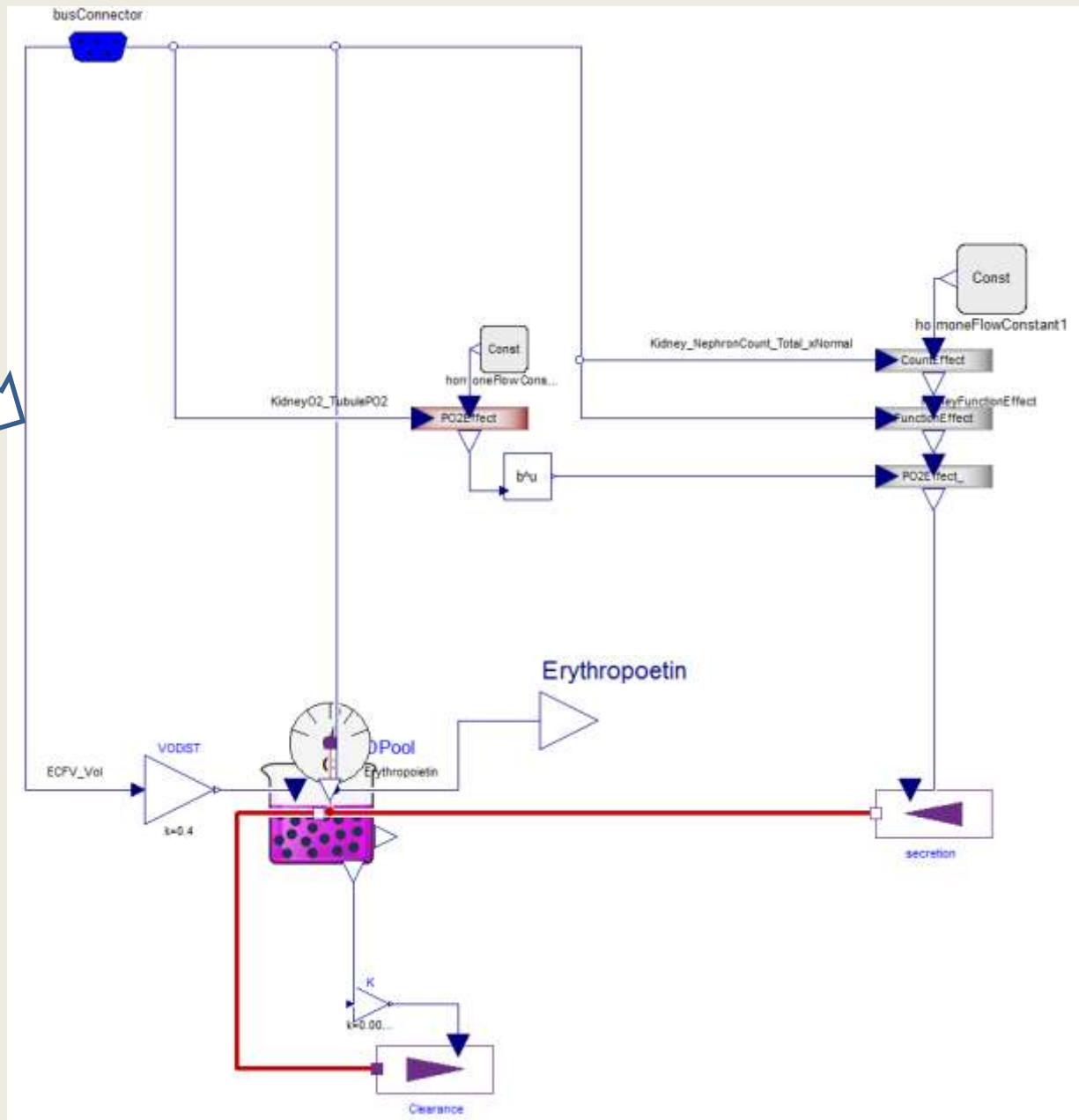
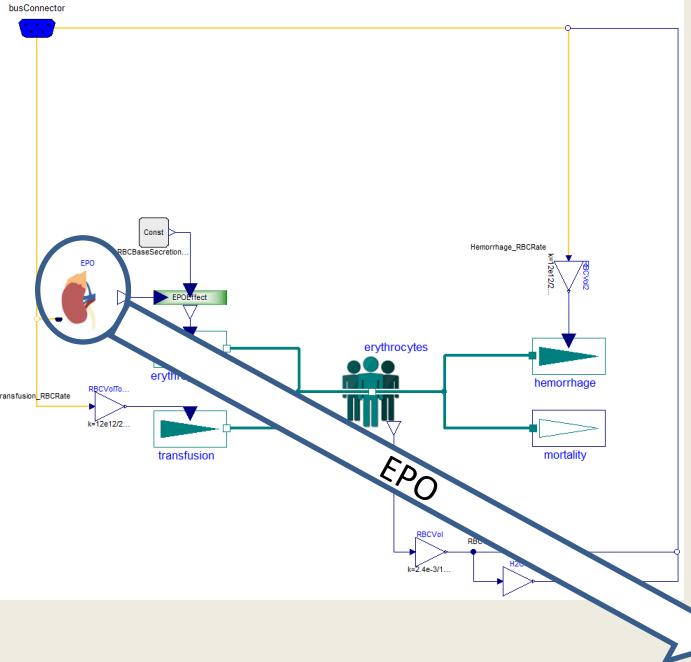


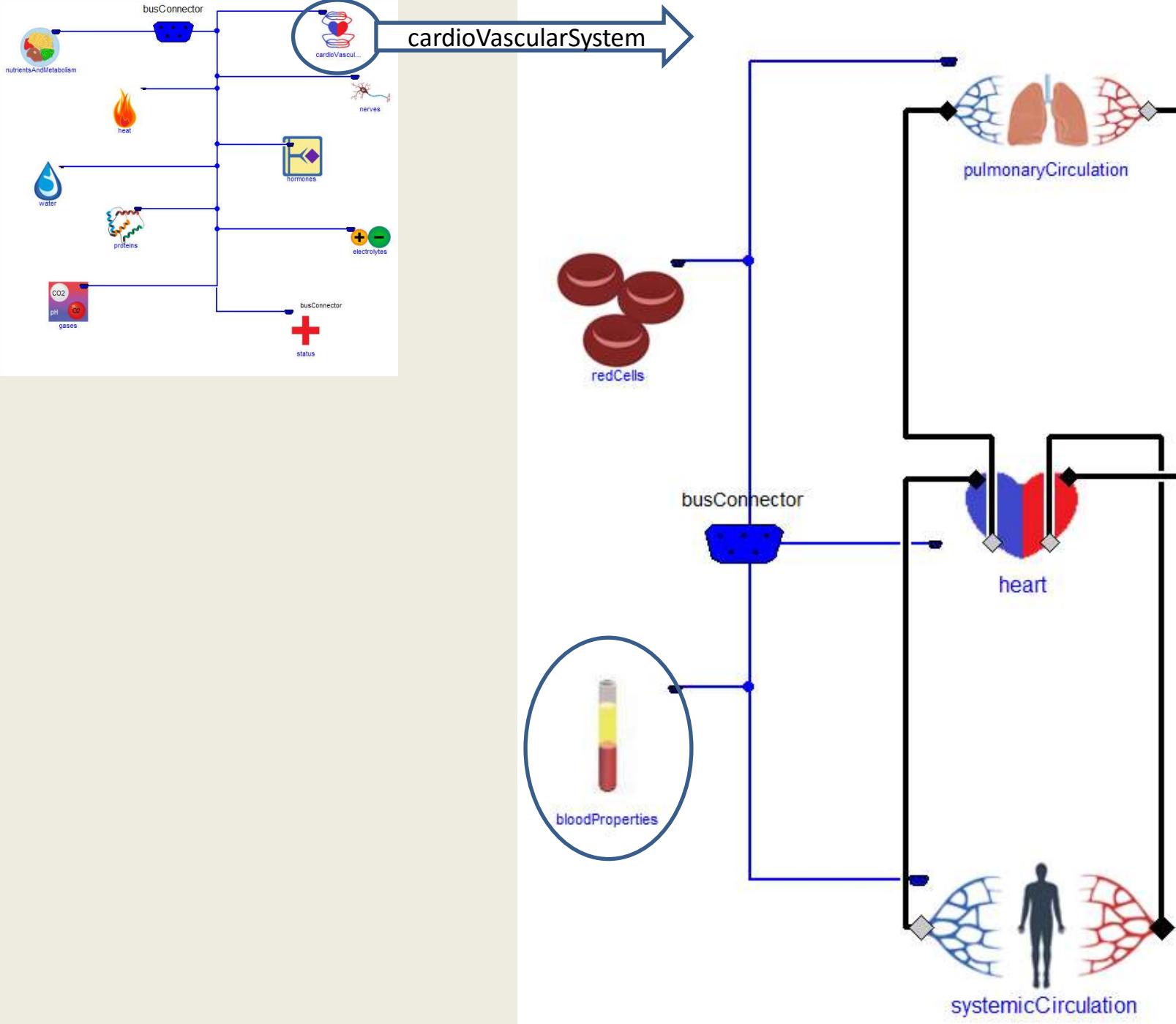


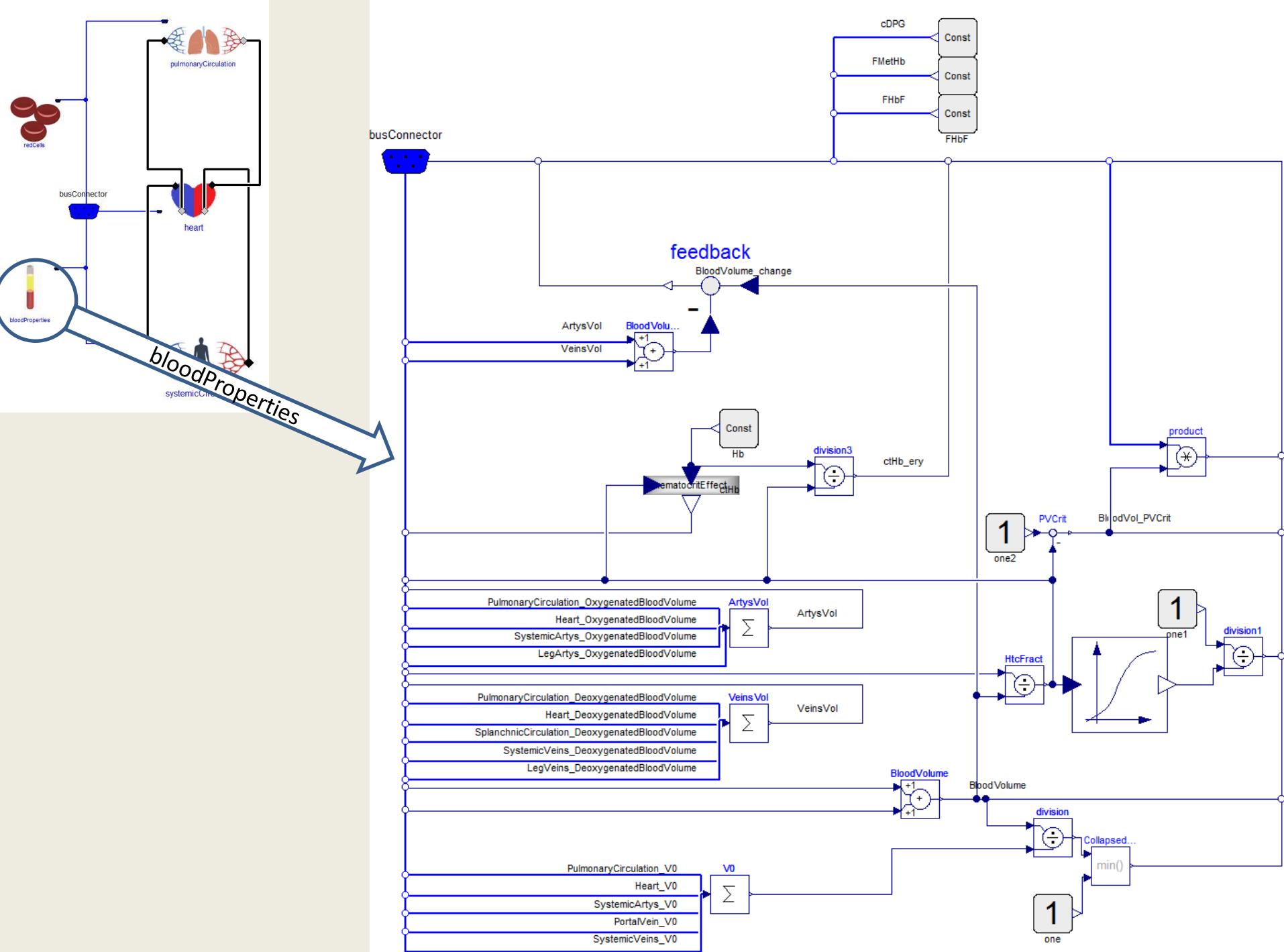


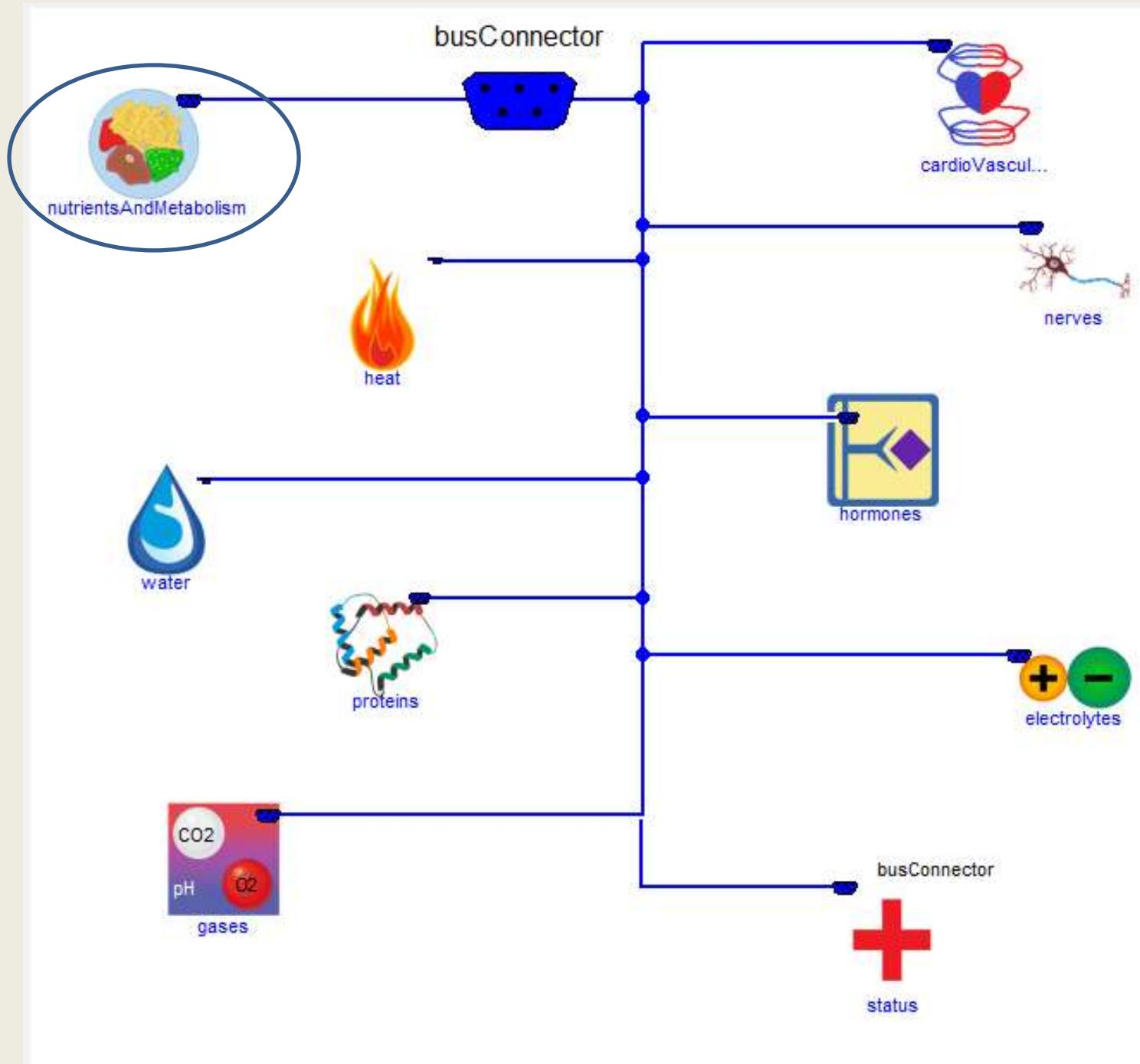


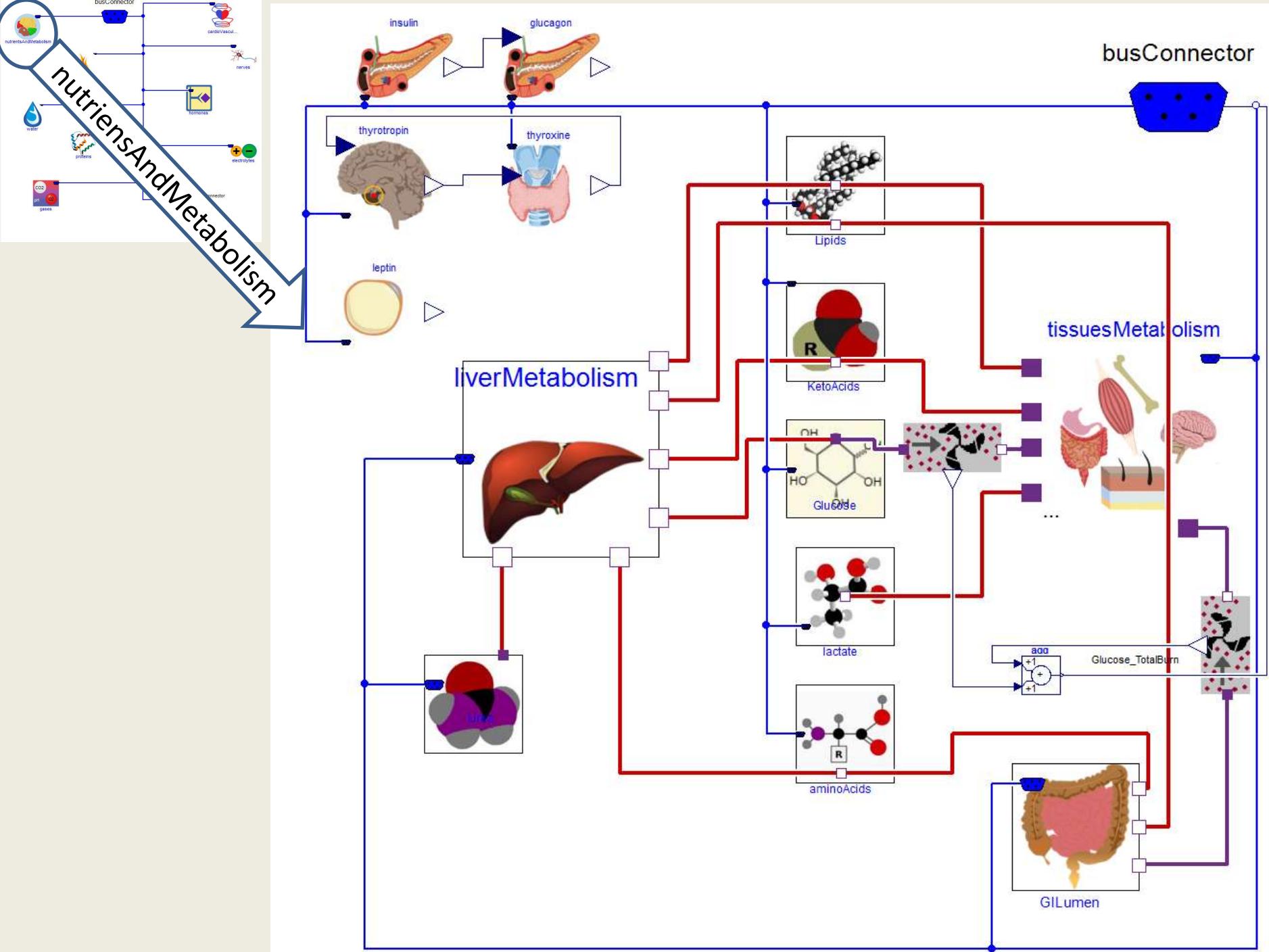


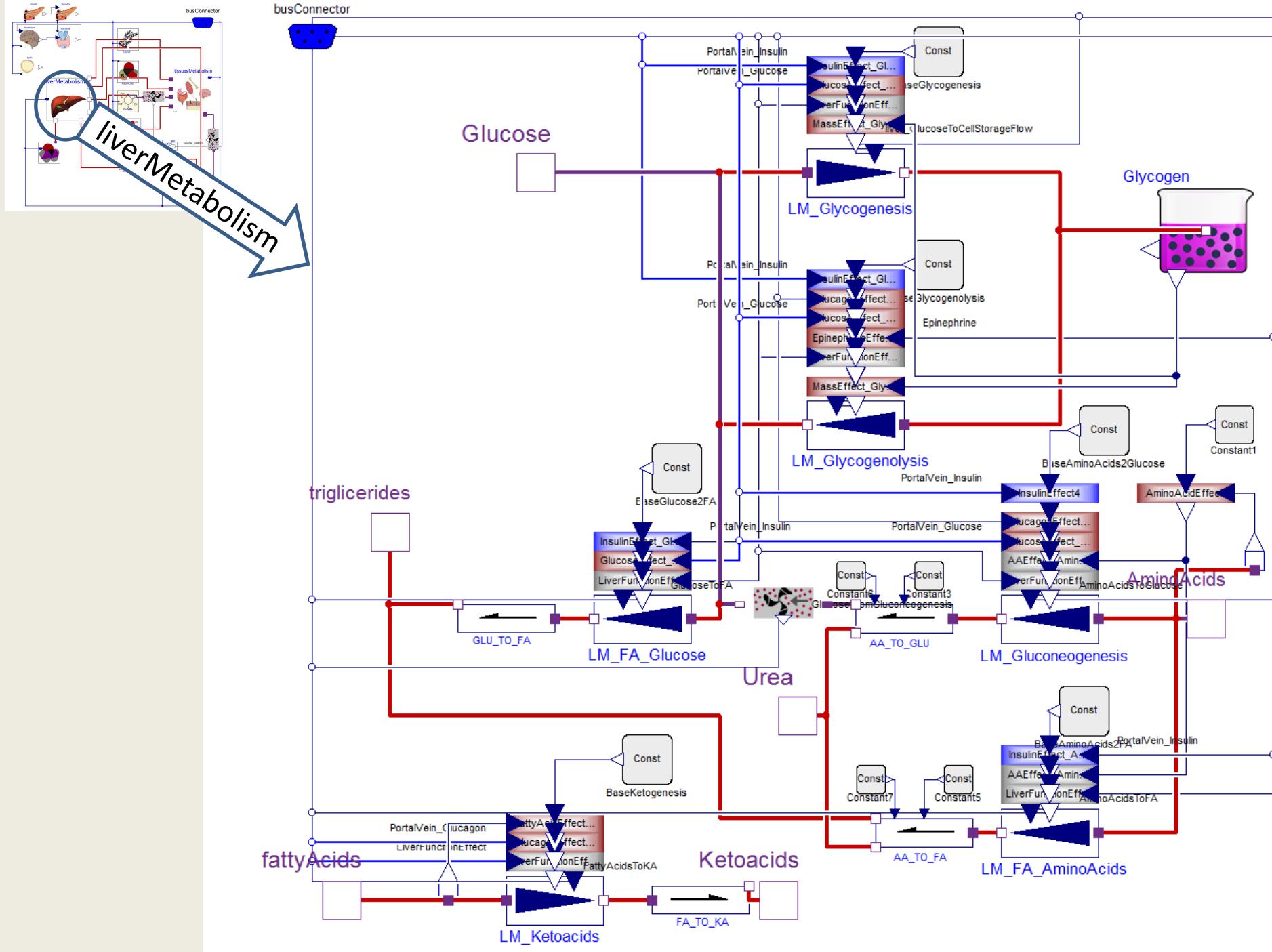






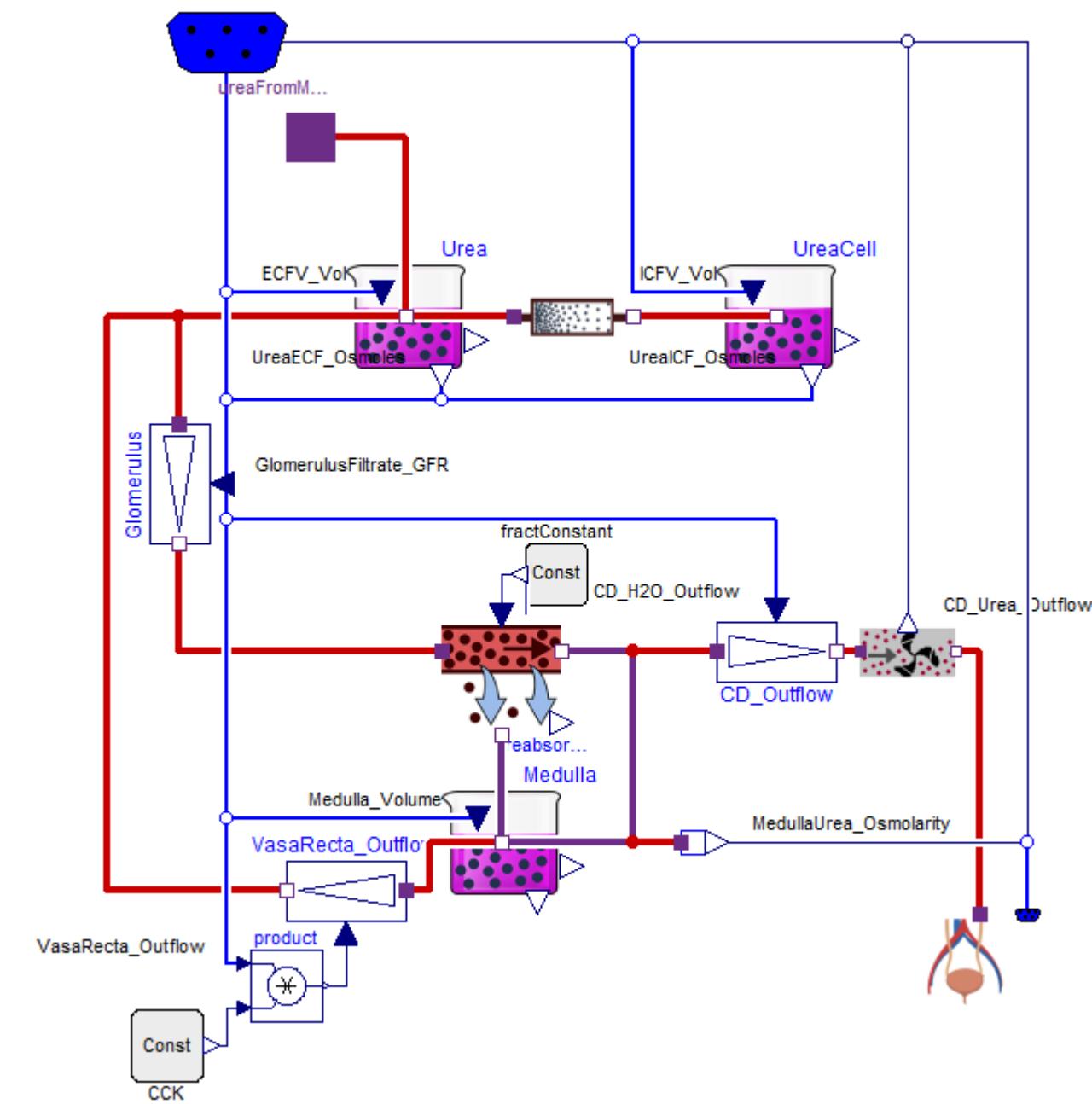


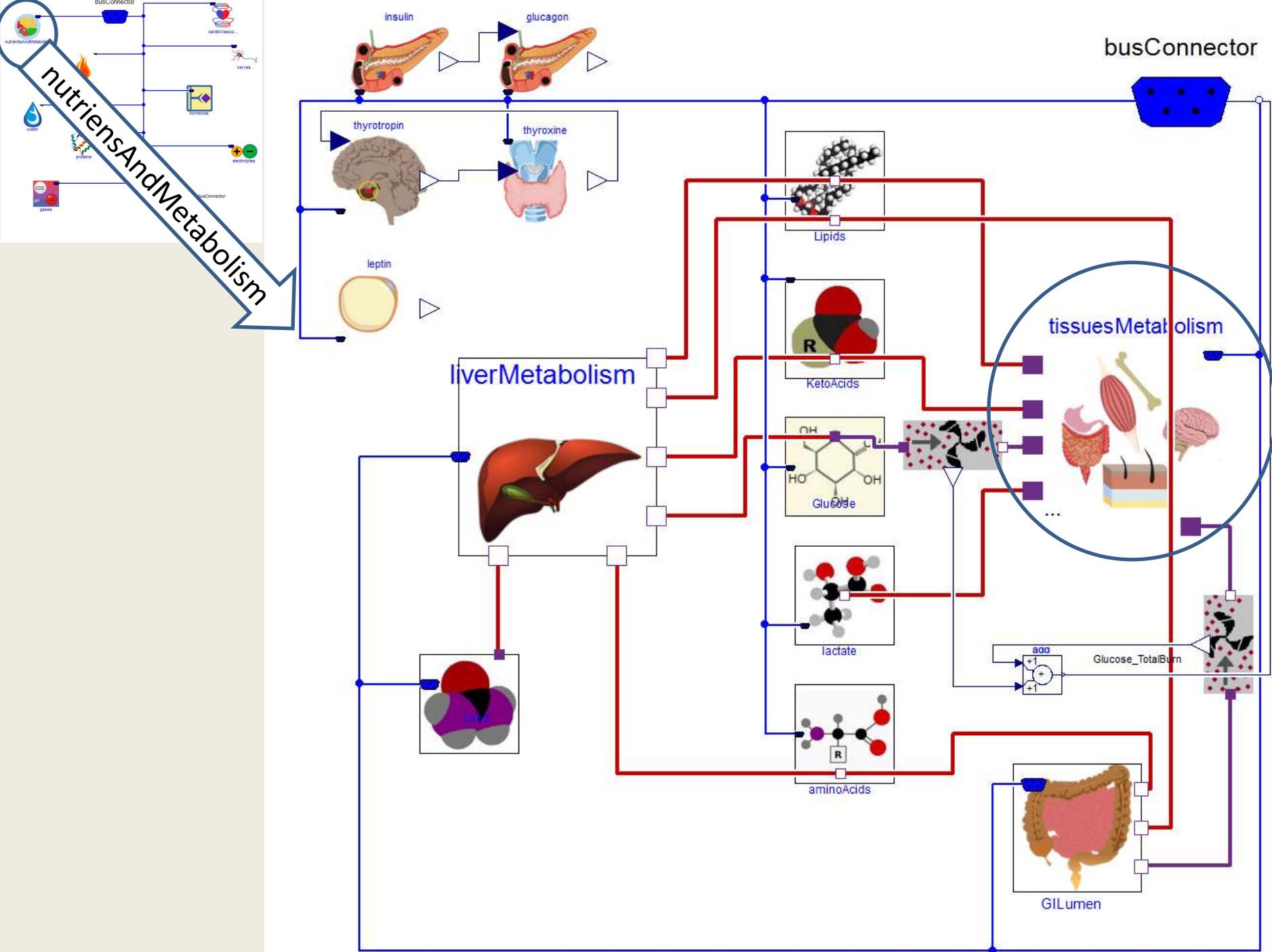


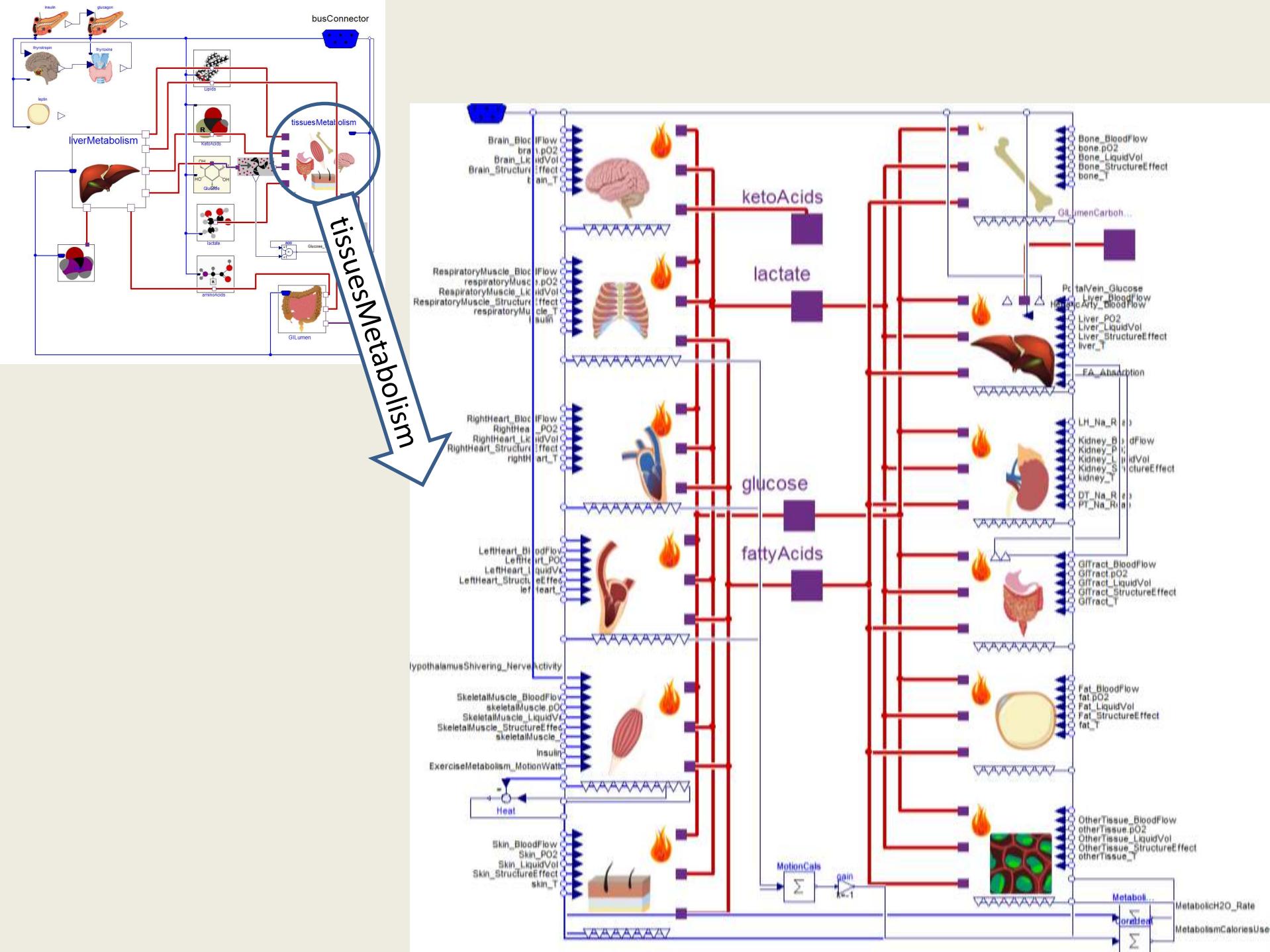


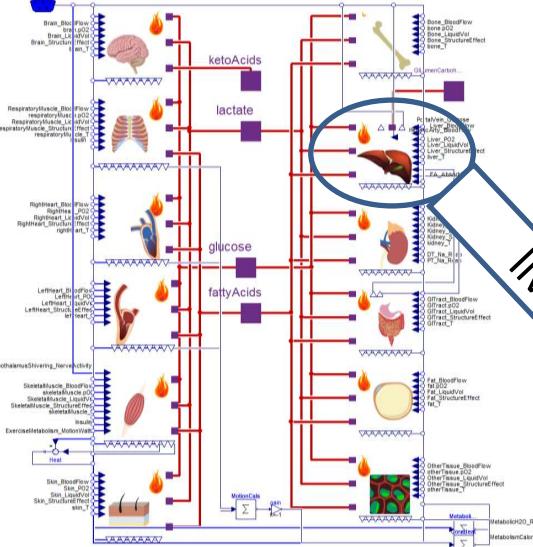


busConnector

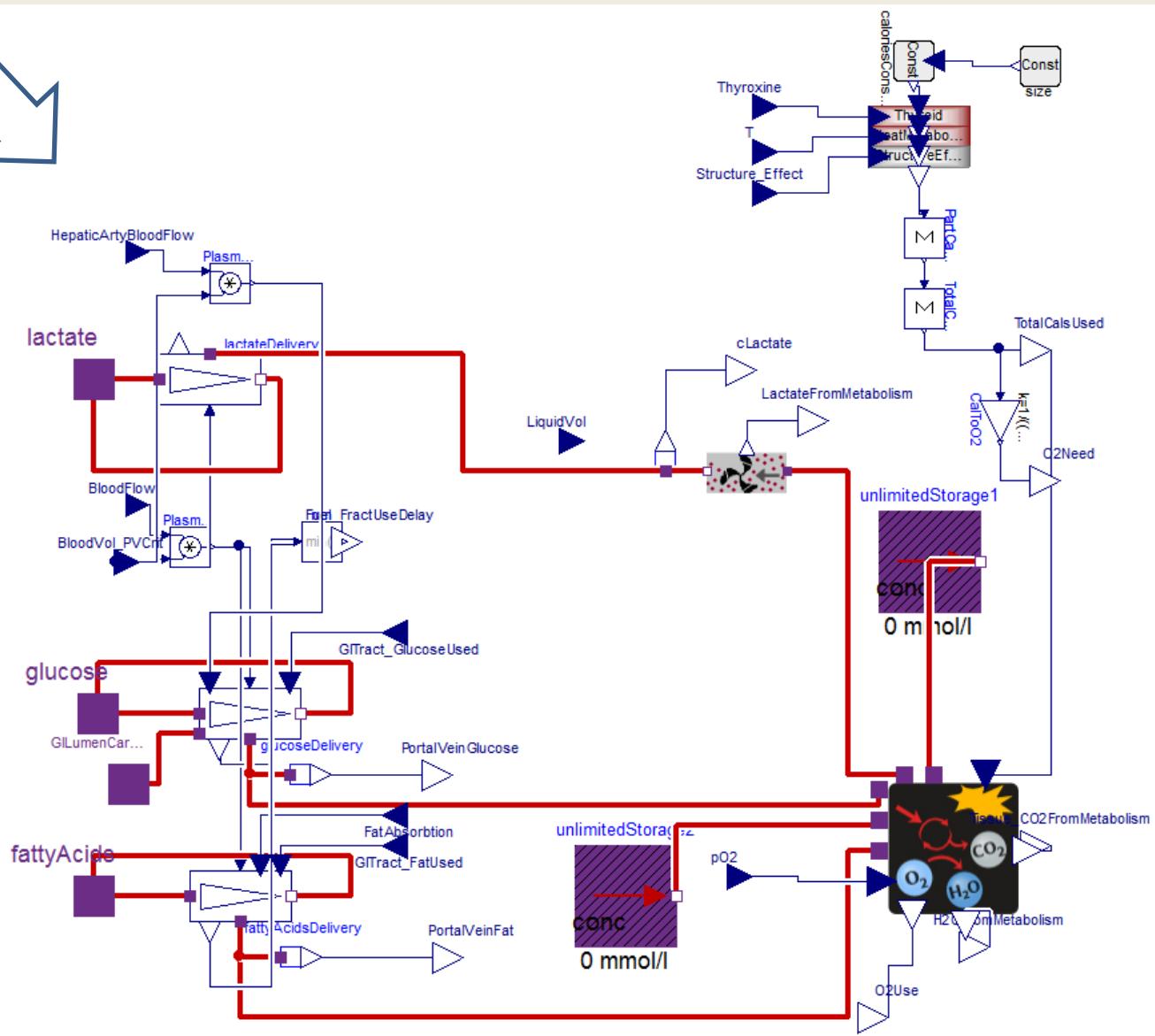


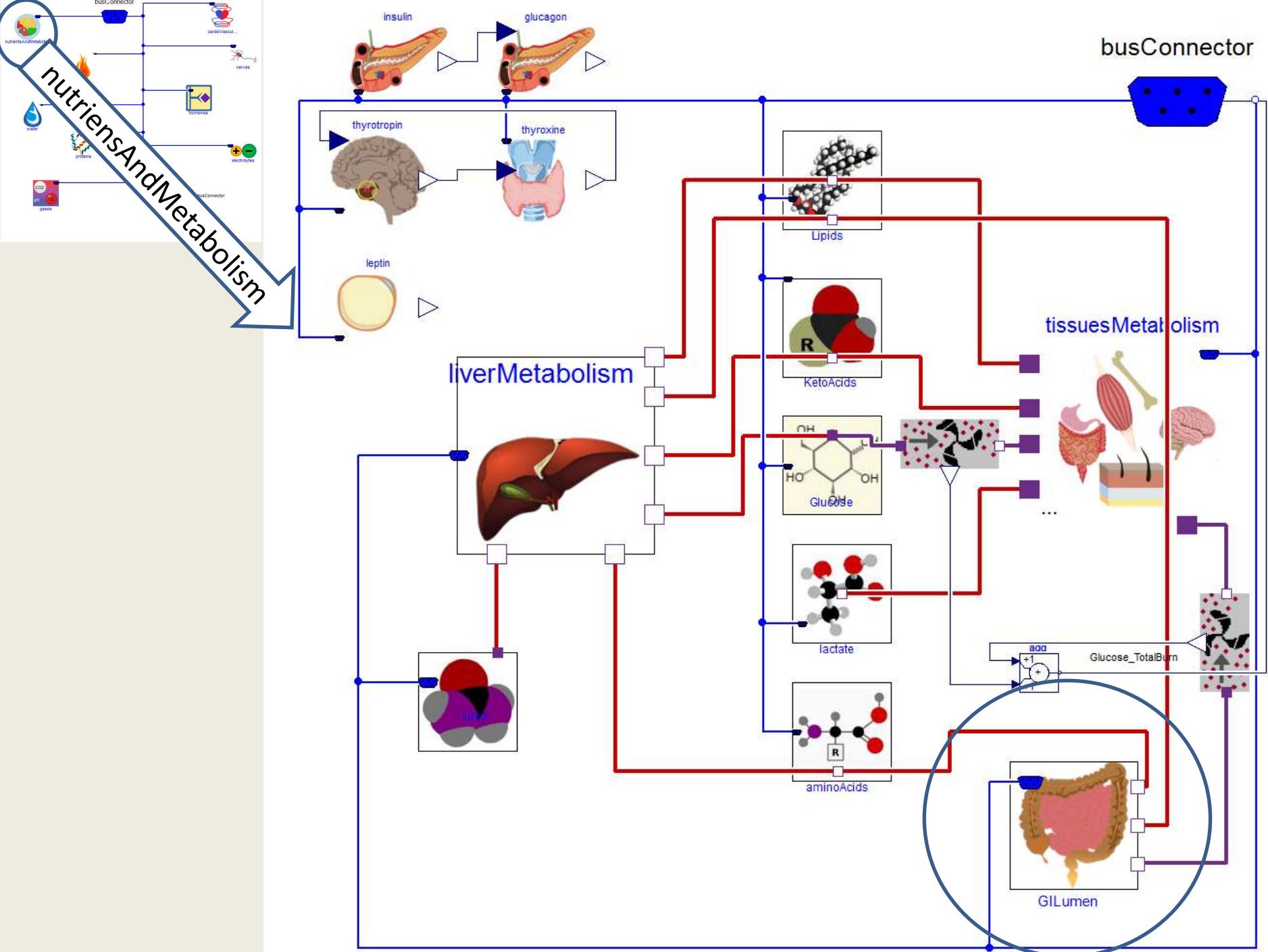


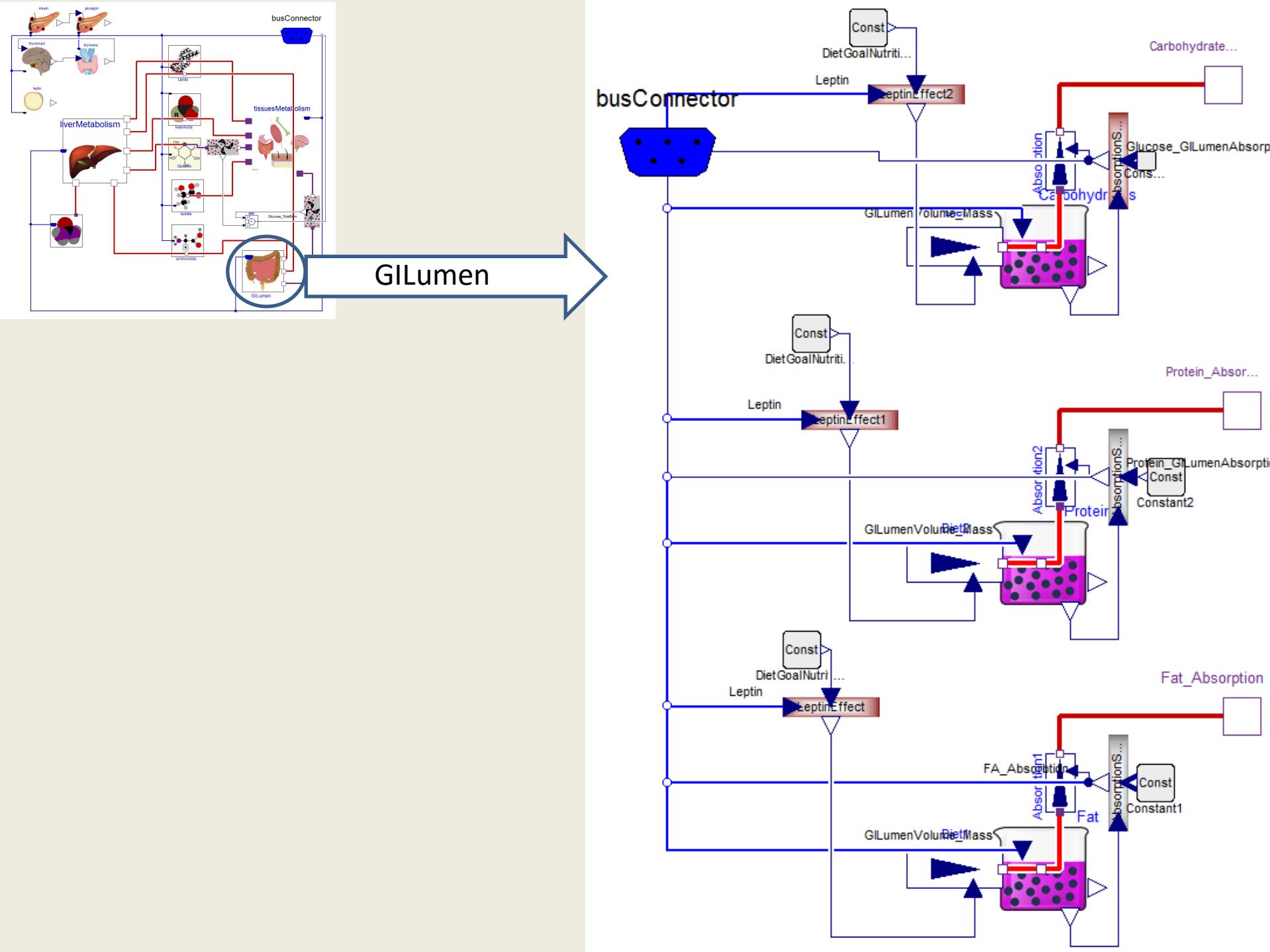


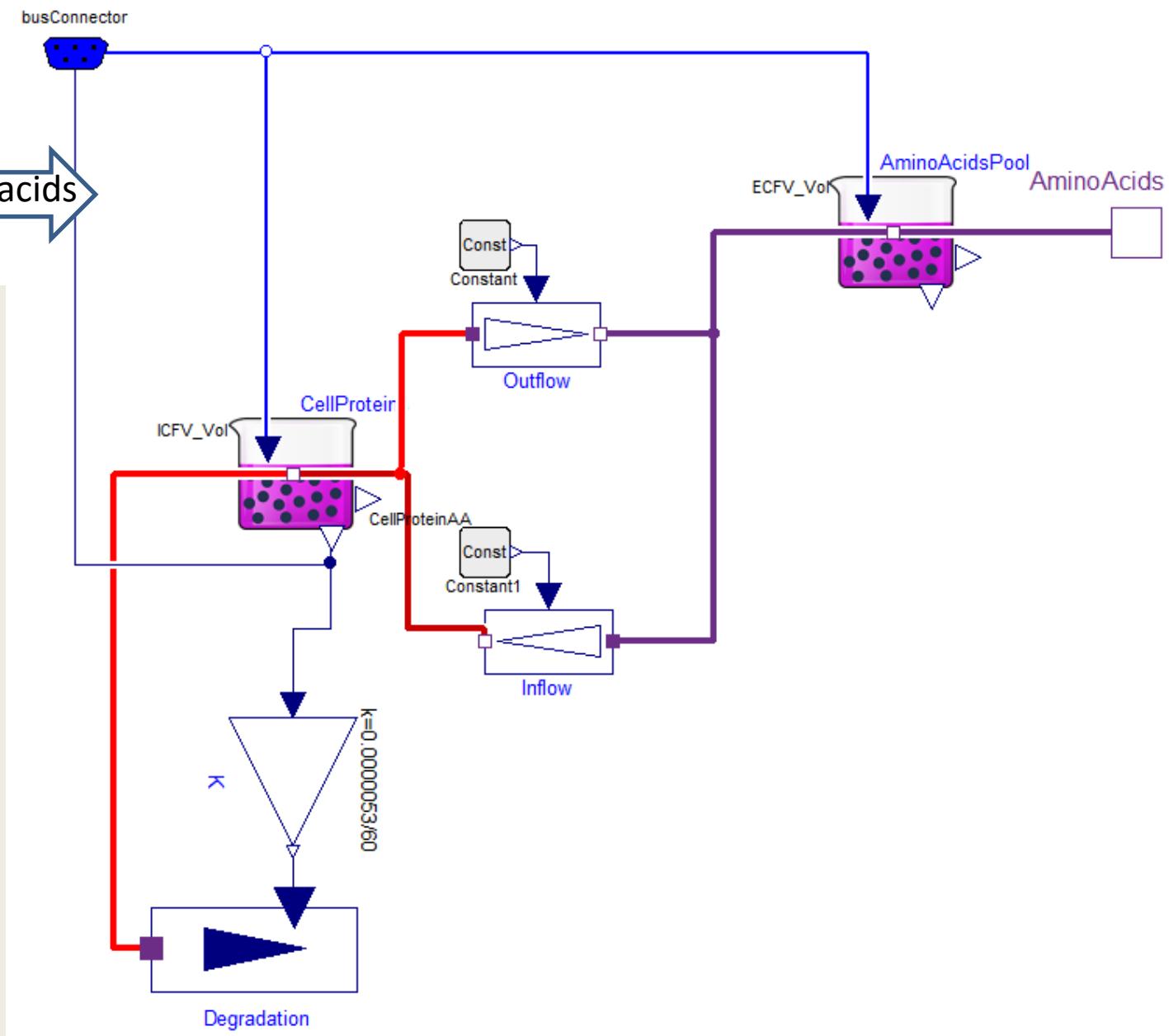
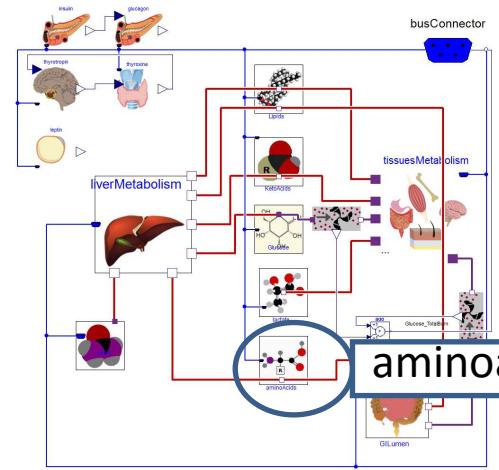


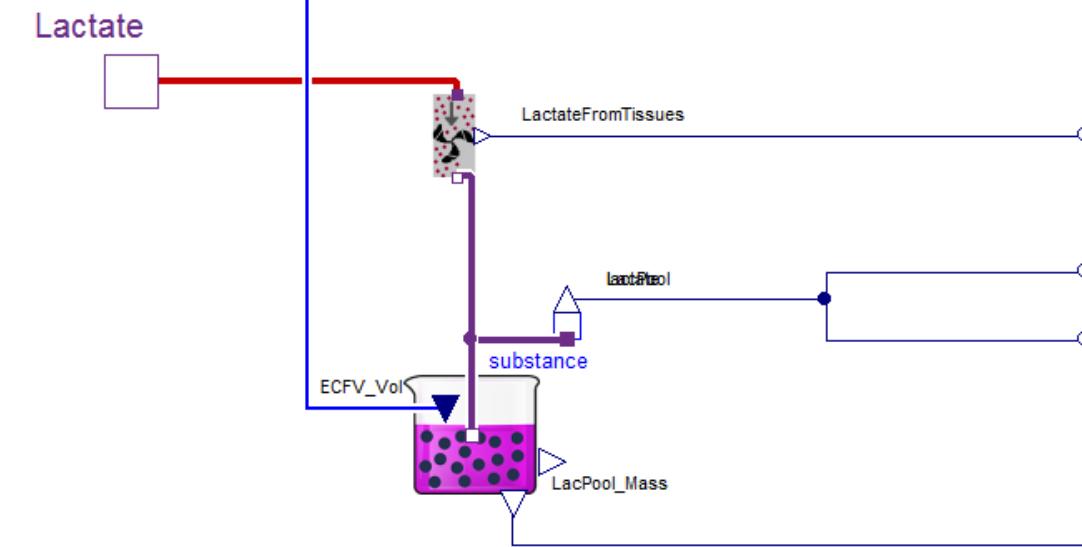
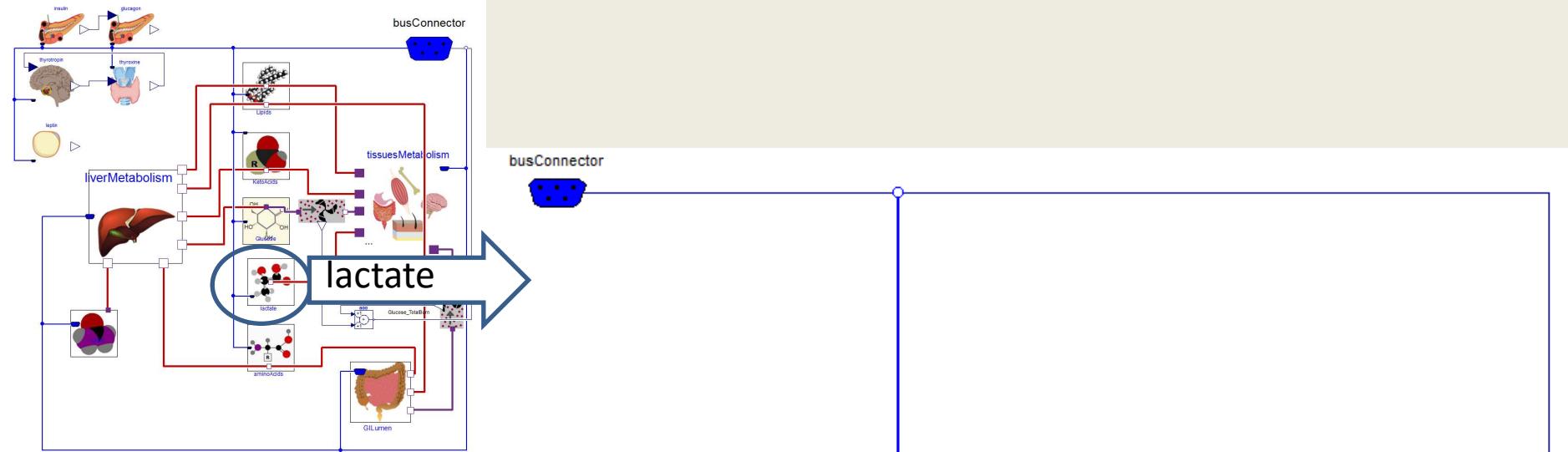
For brain, respiratoryMuscle, rightHeart, leftHeart, skeletalMuscle, skin, bone, liver, kidney, GItract, fat and otherTissue: the instances of the same class with different parameters

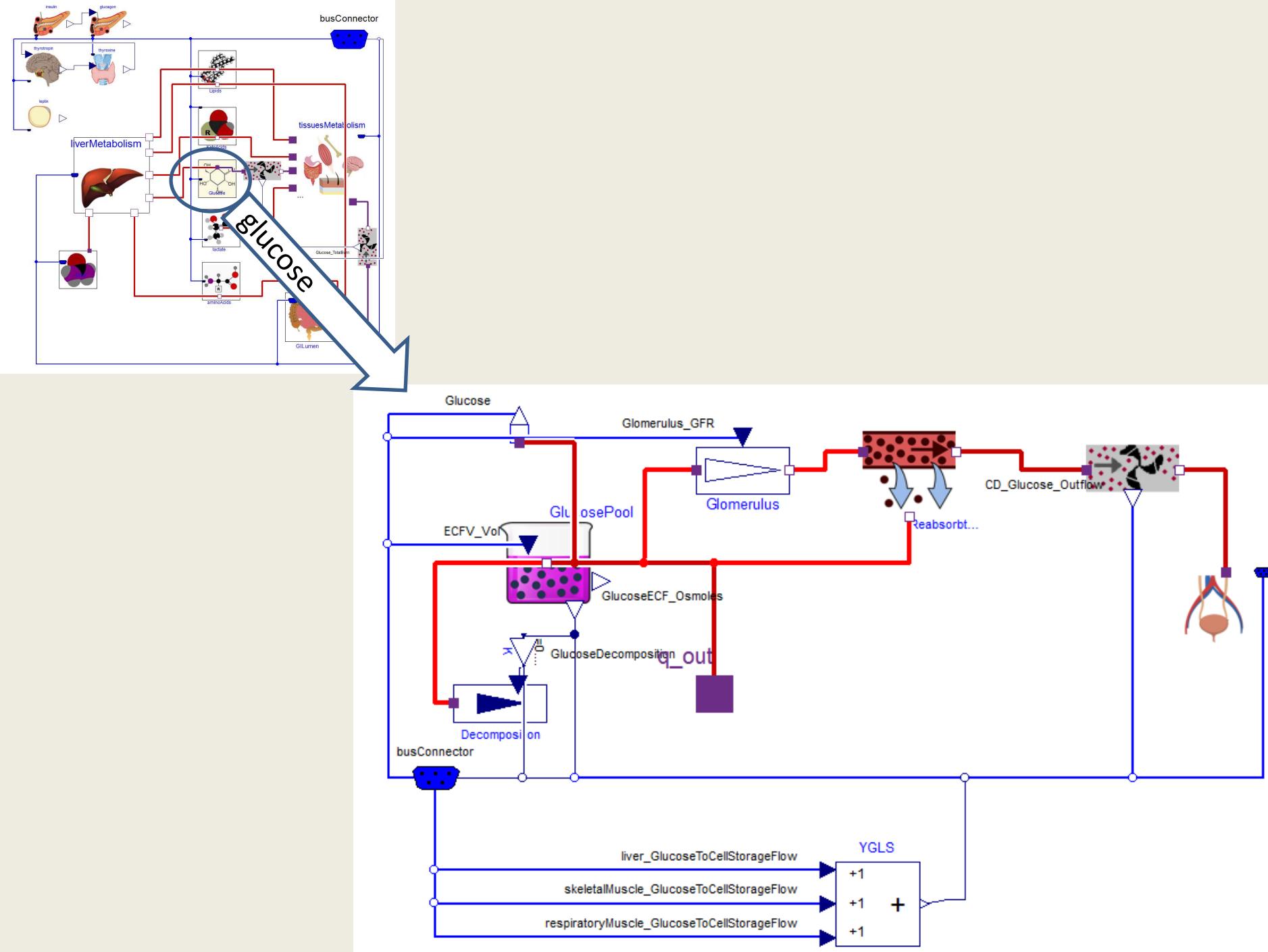


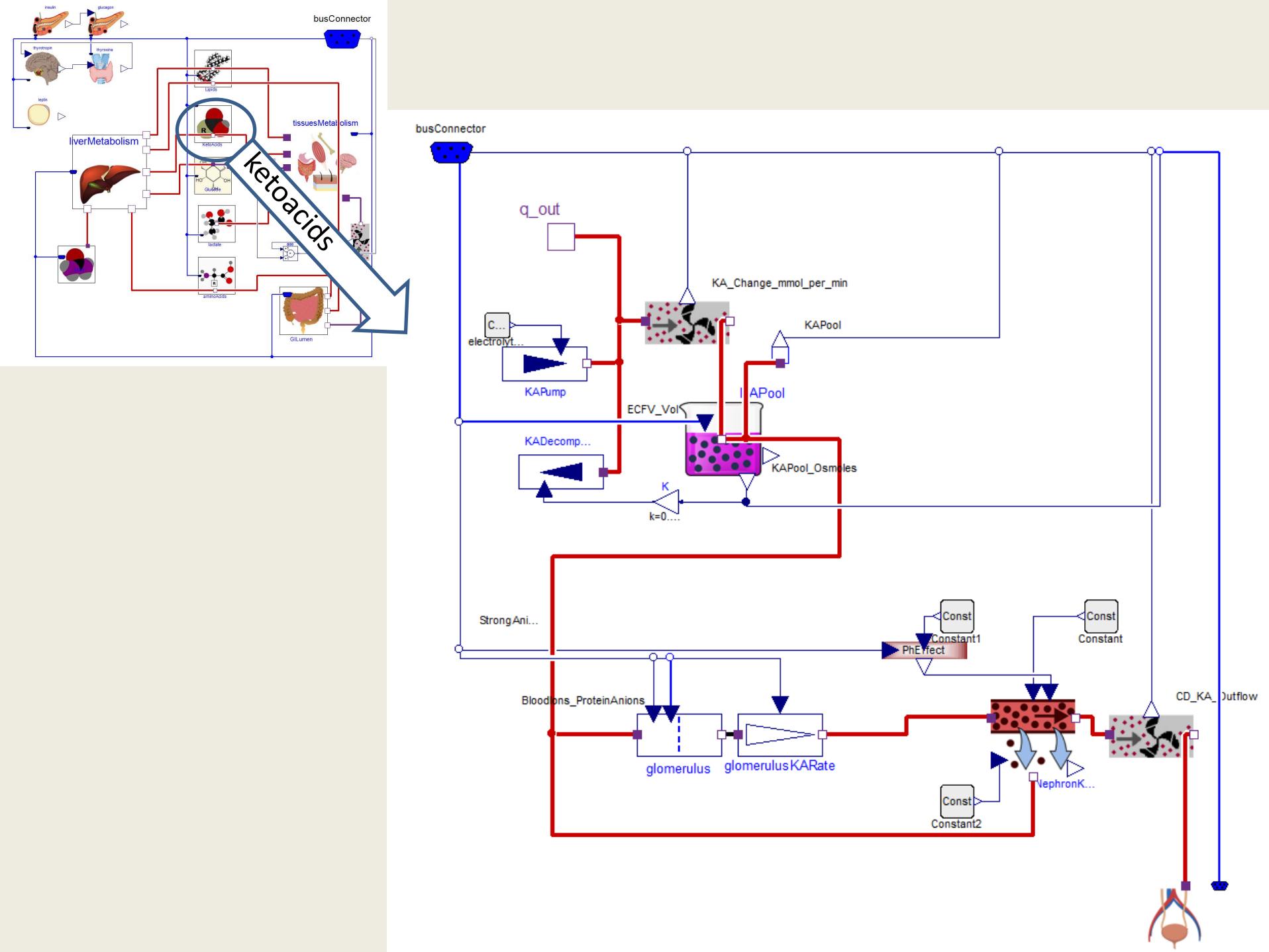


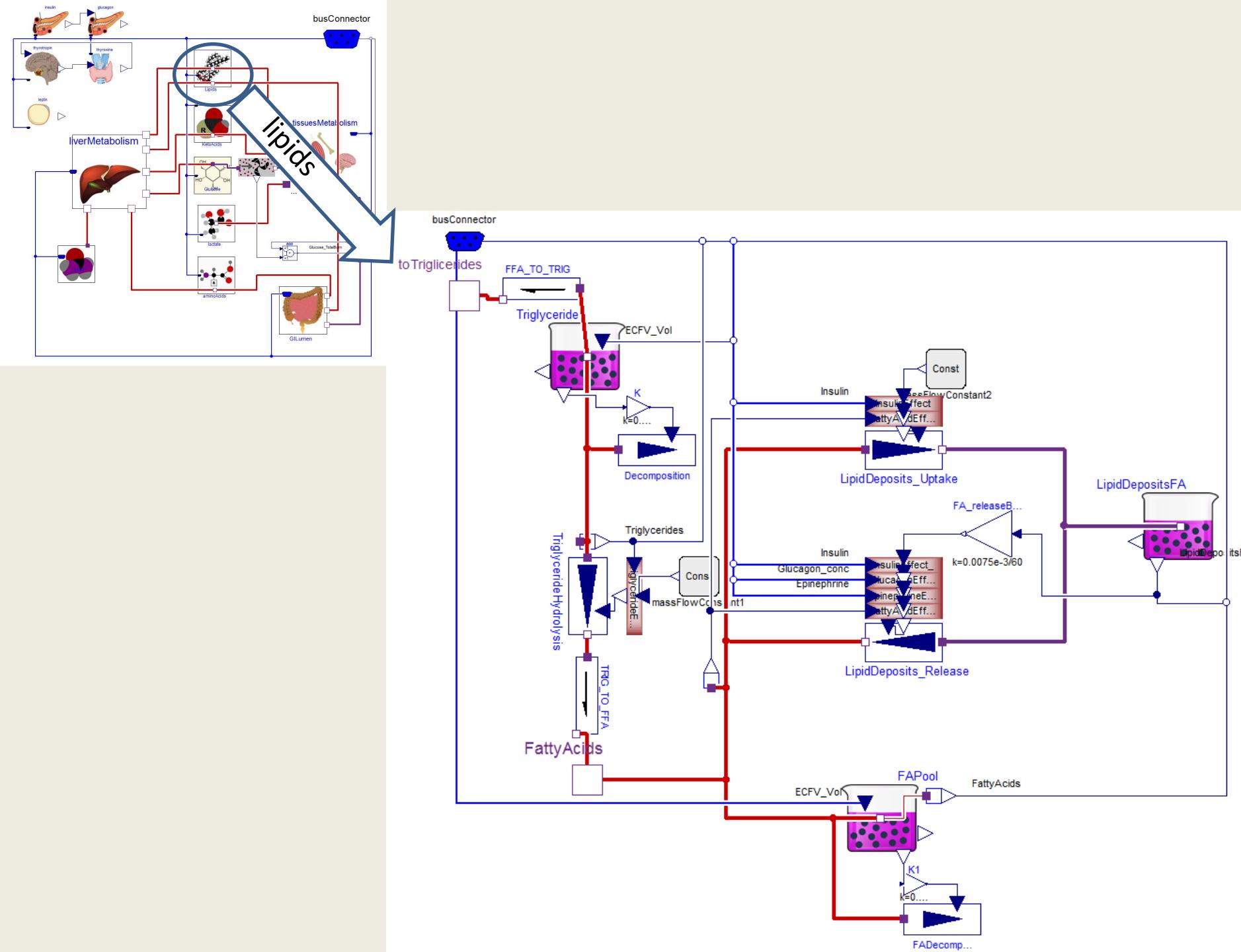


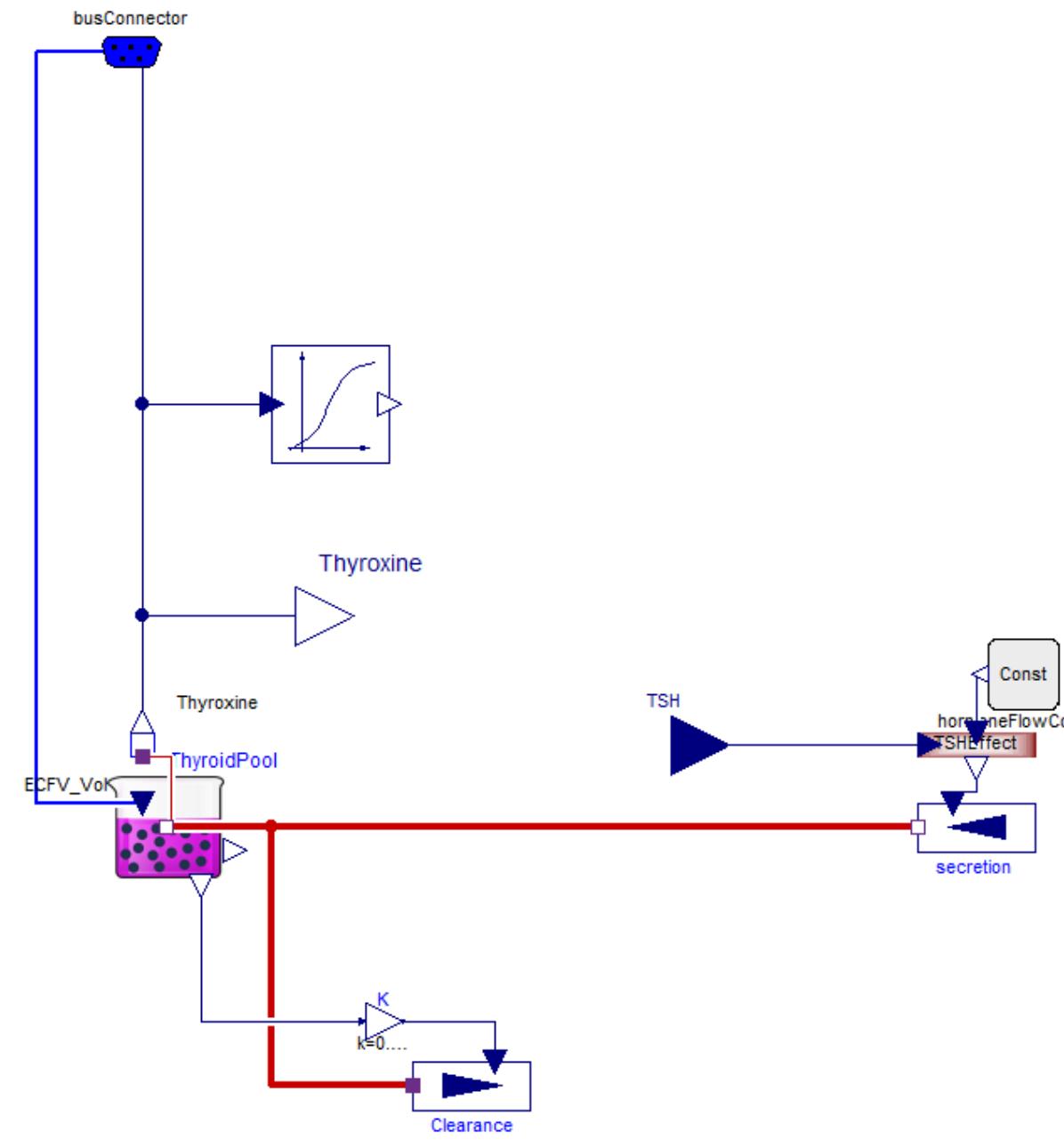
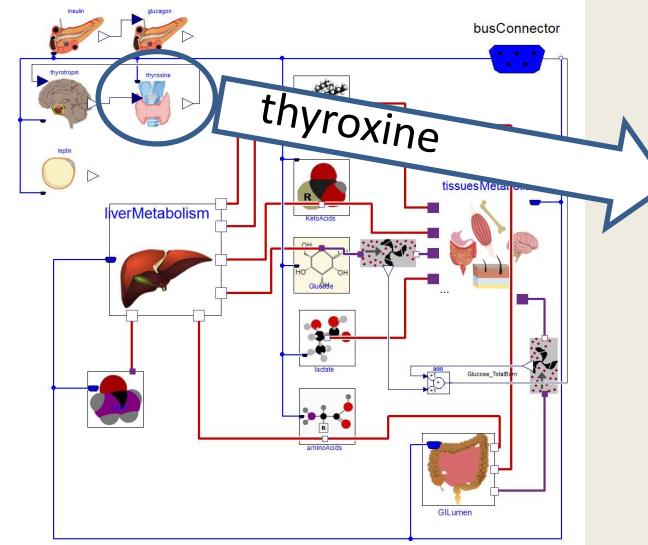


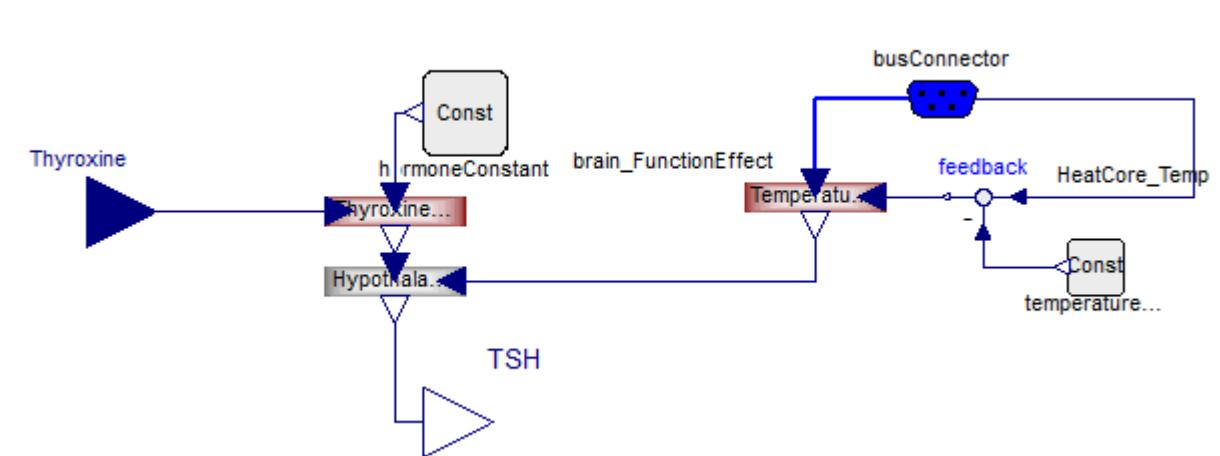
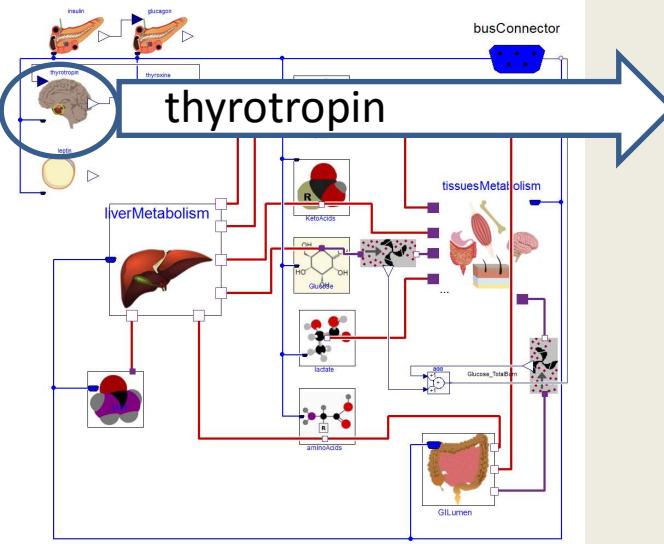


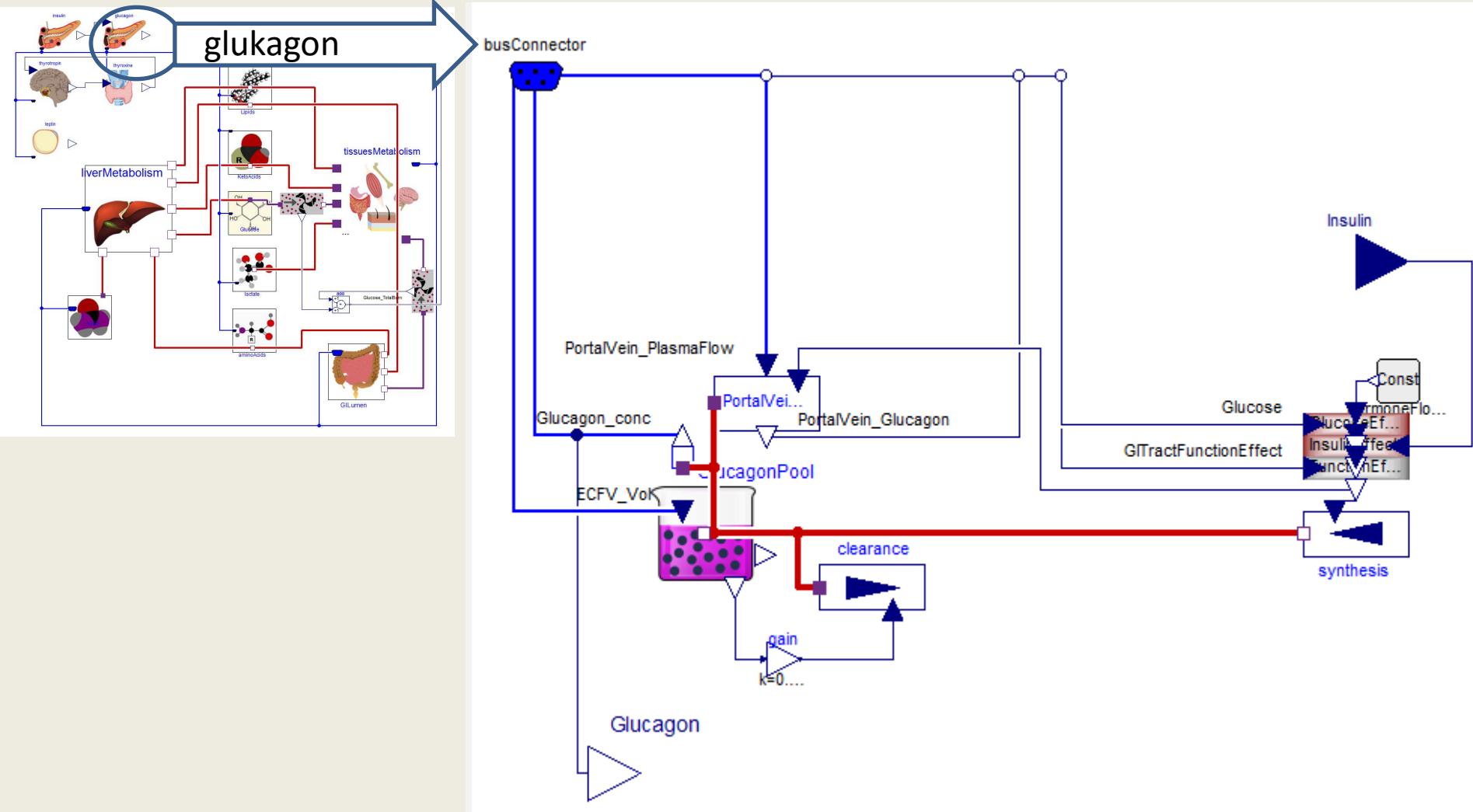


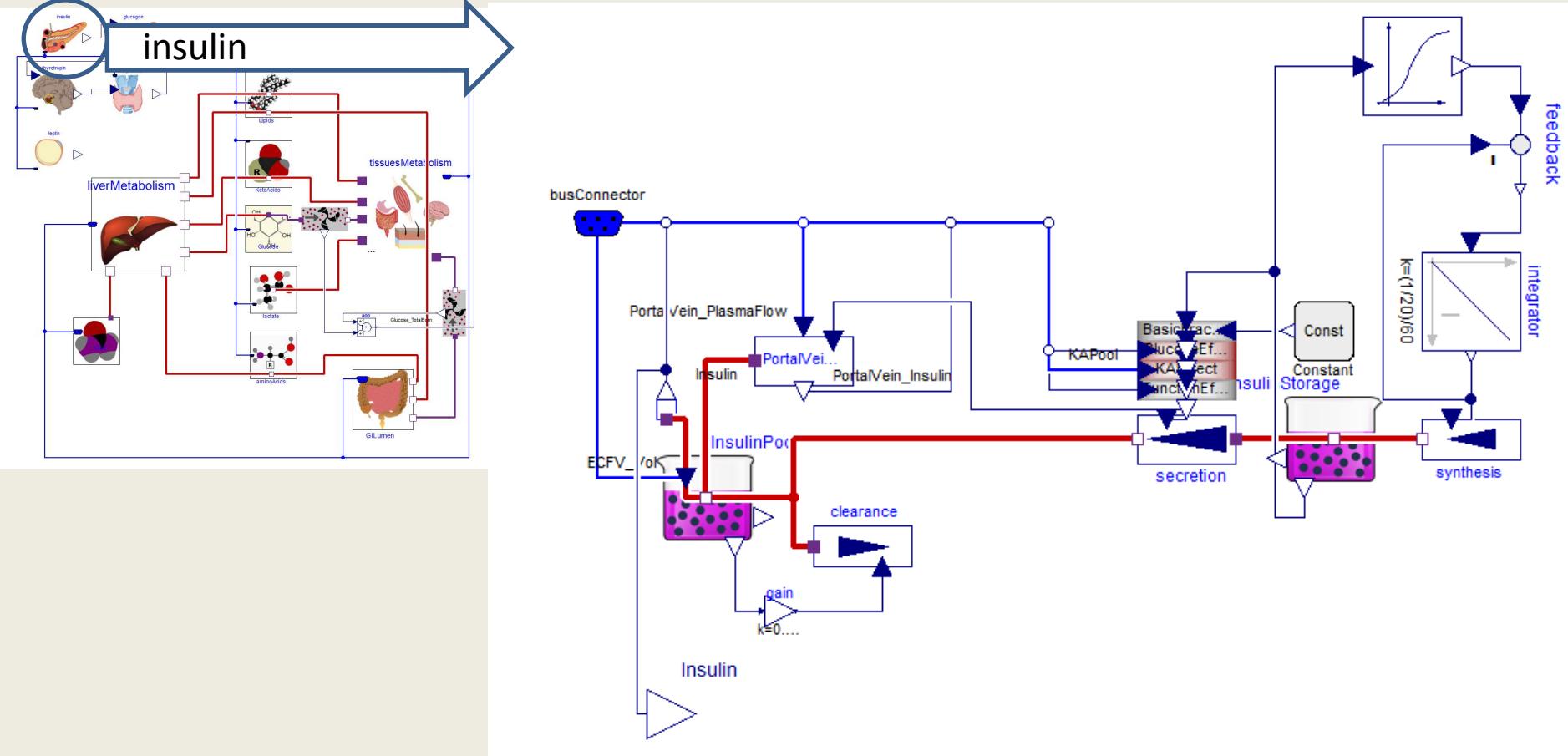


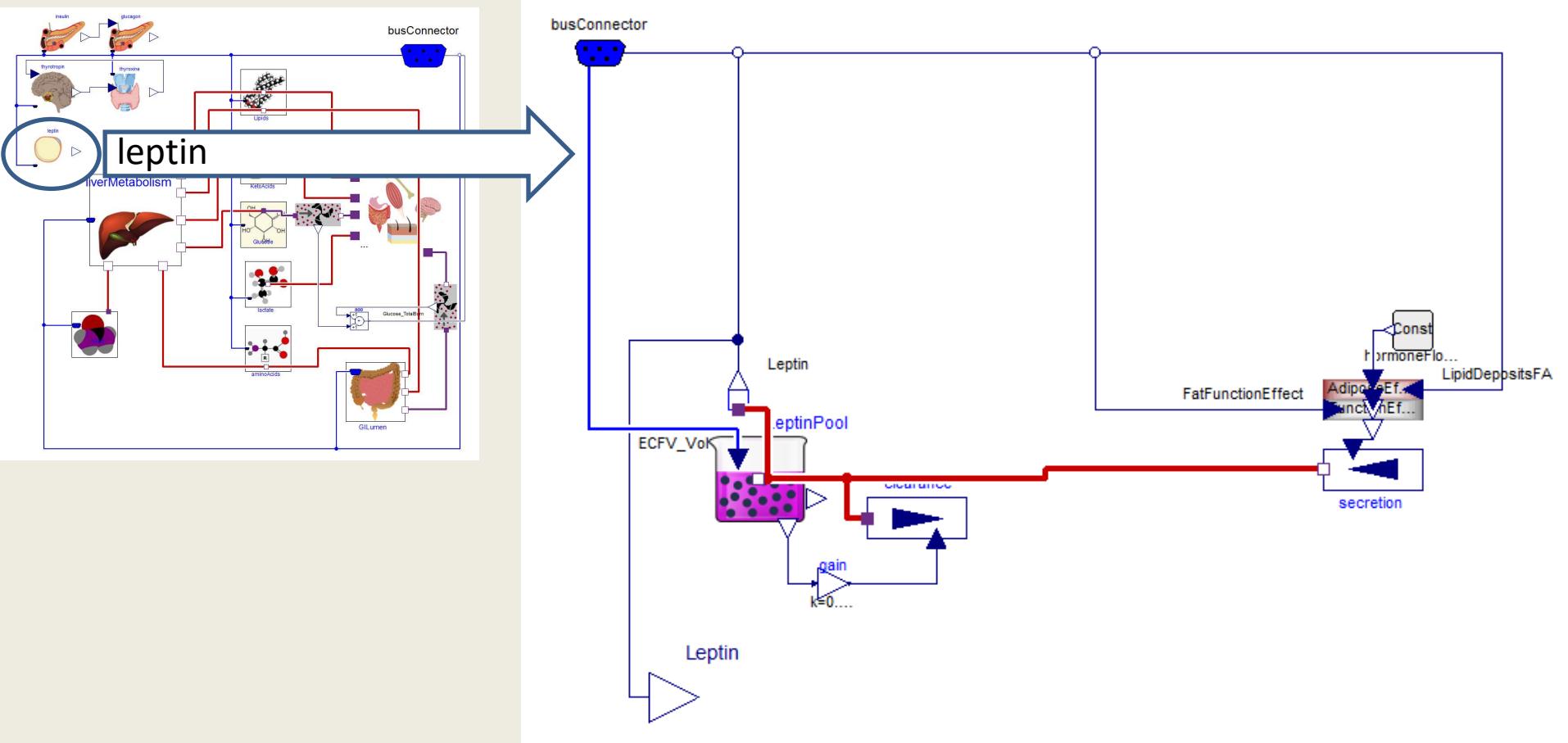


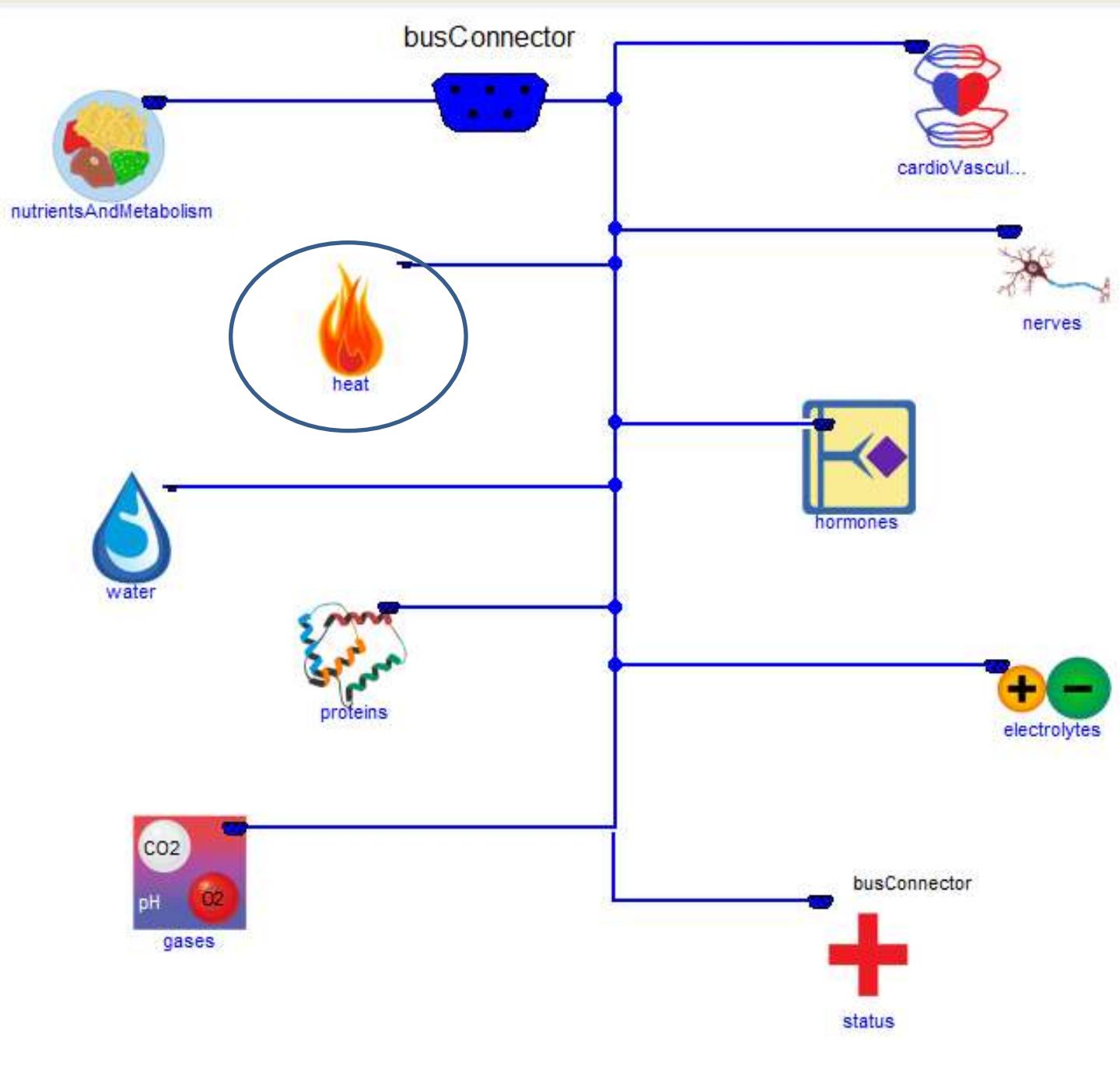


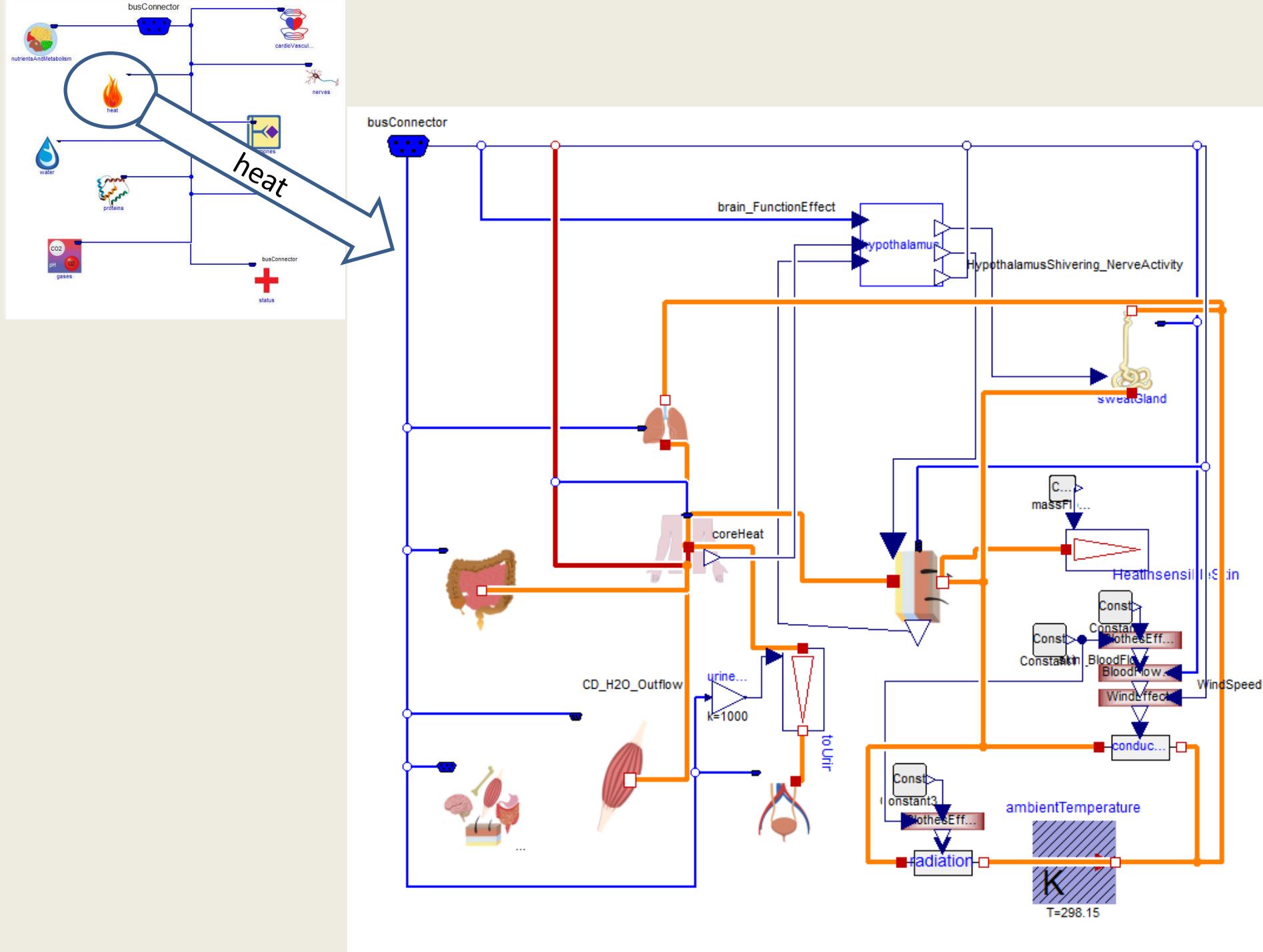


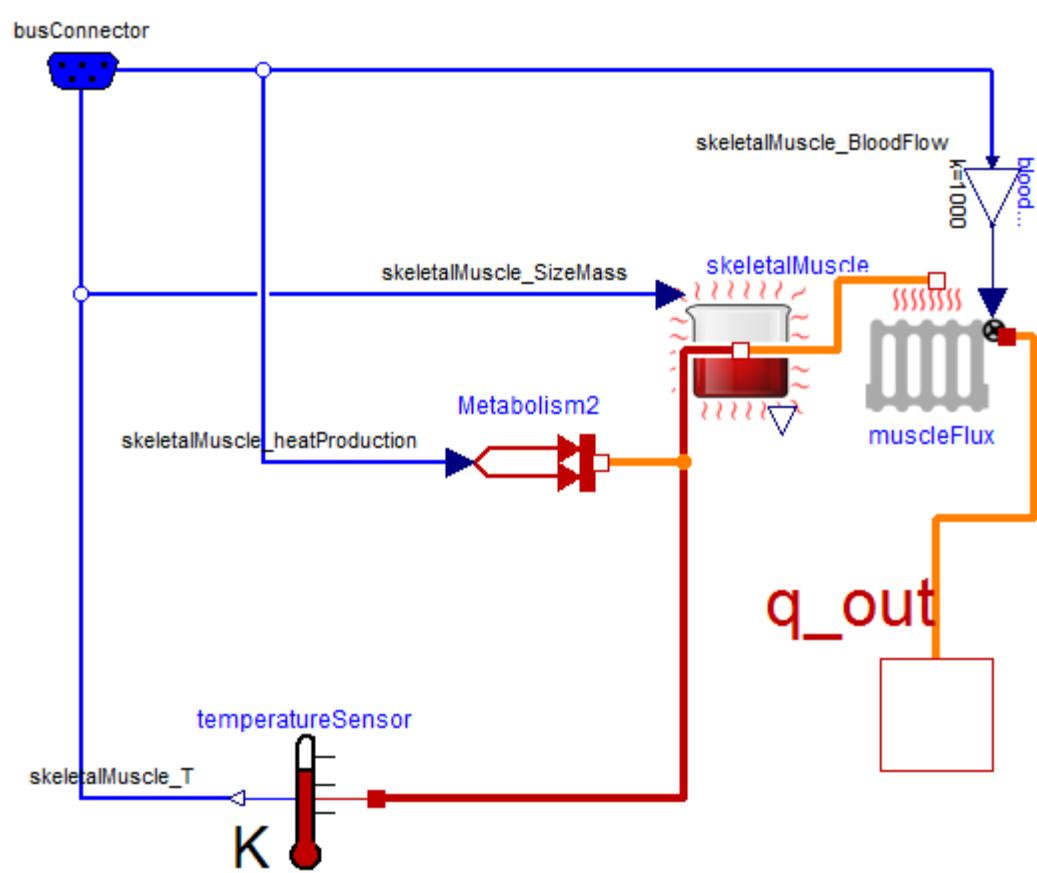
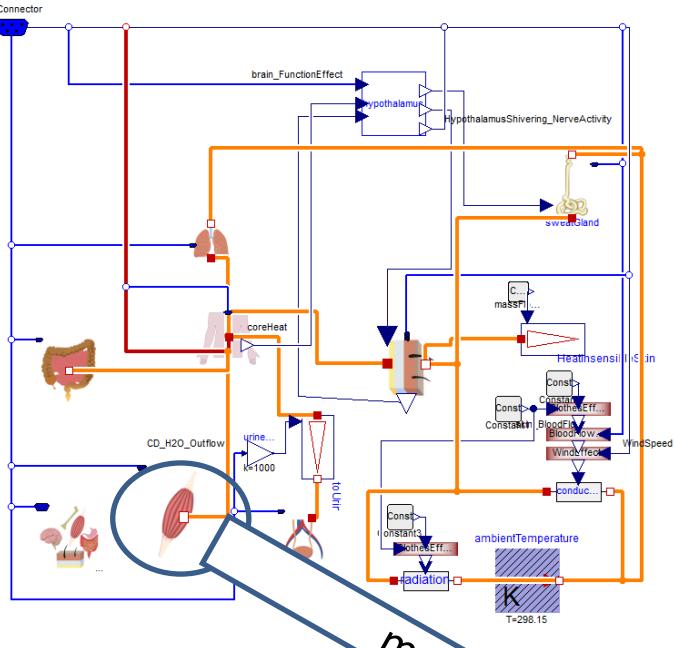


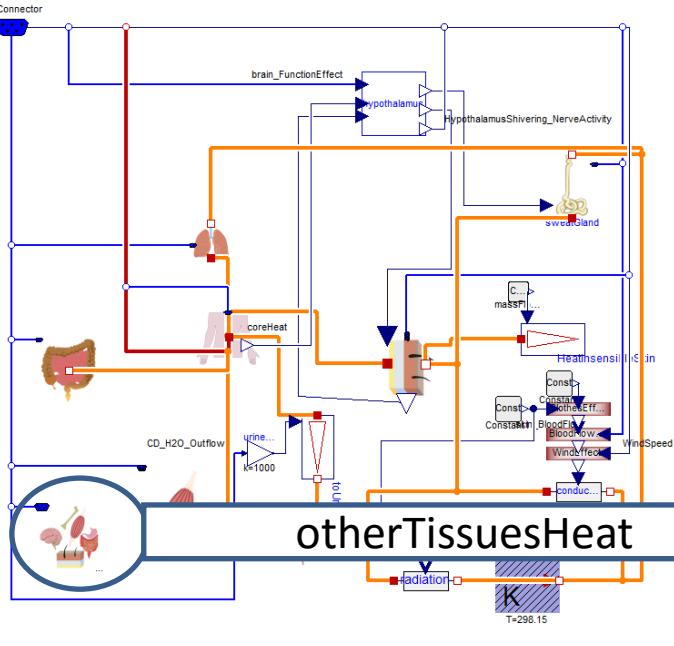






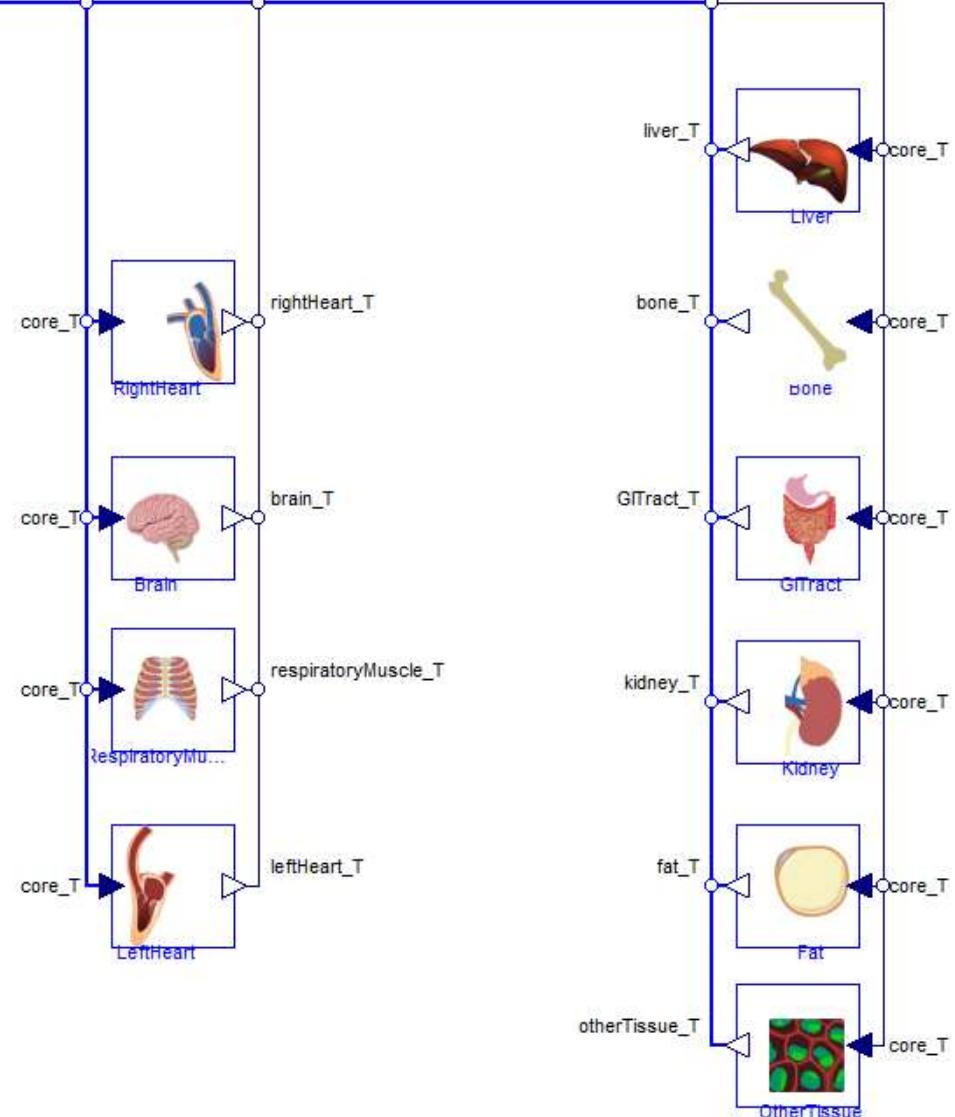


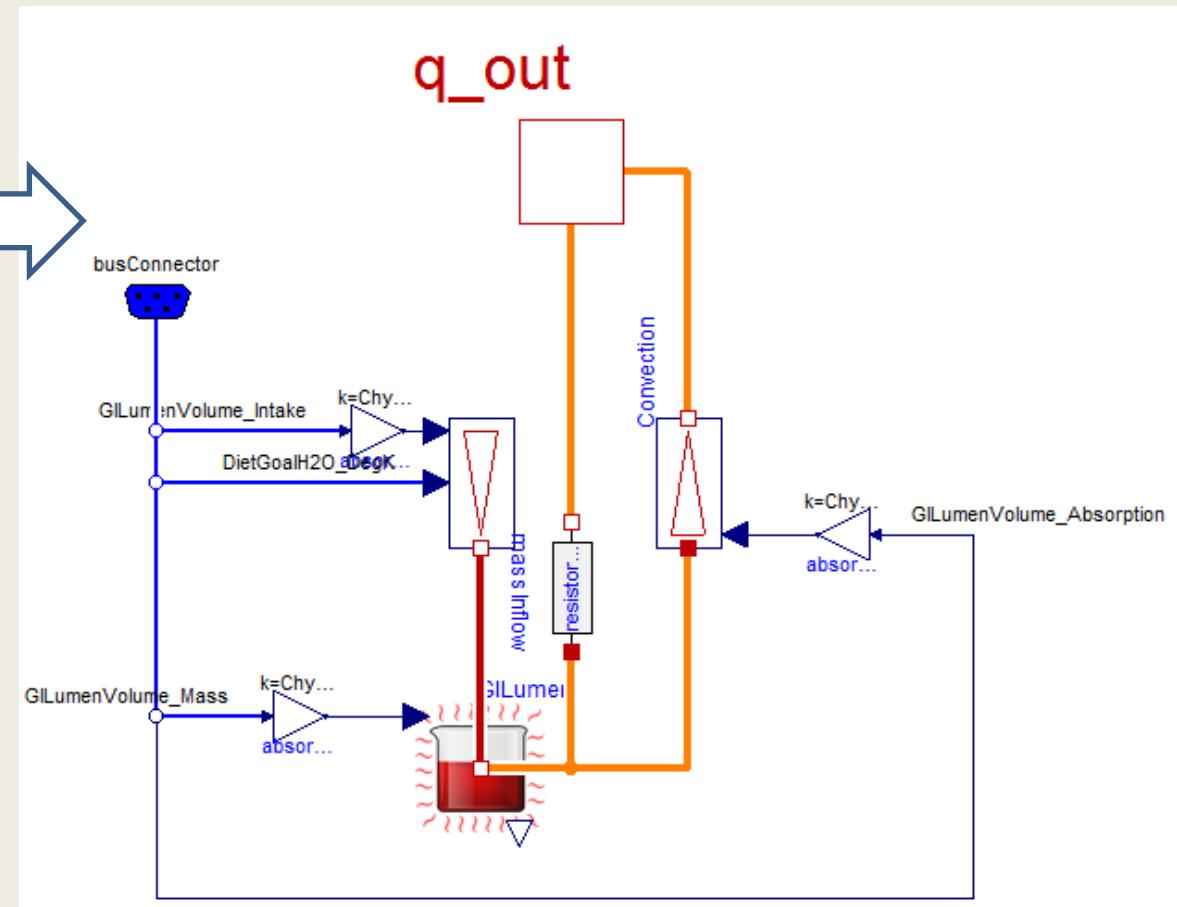
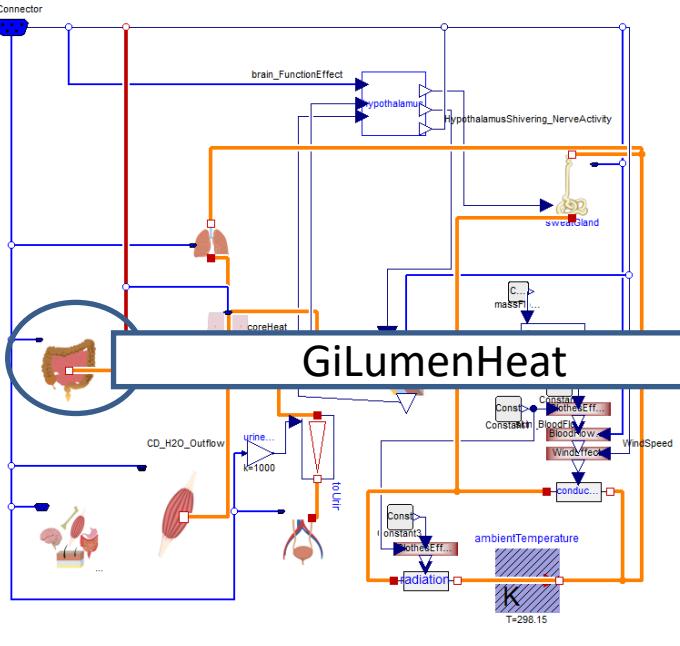


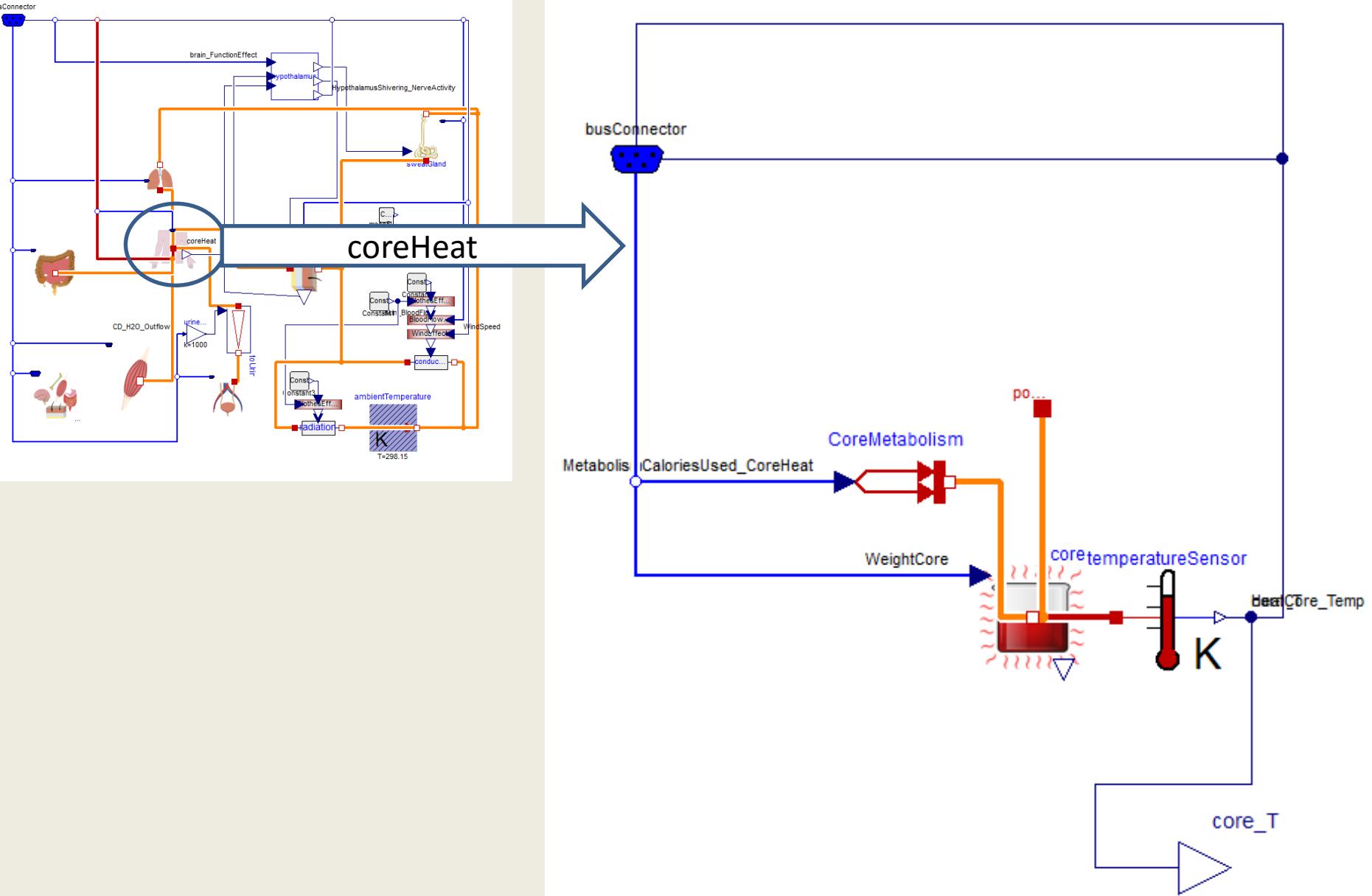


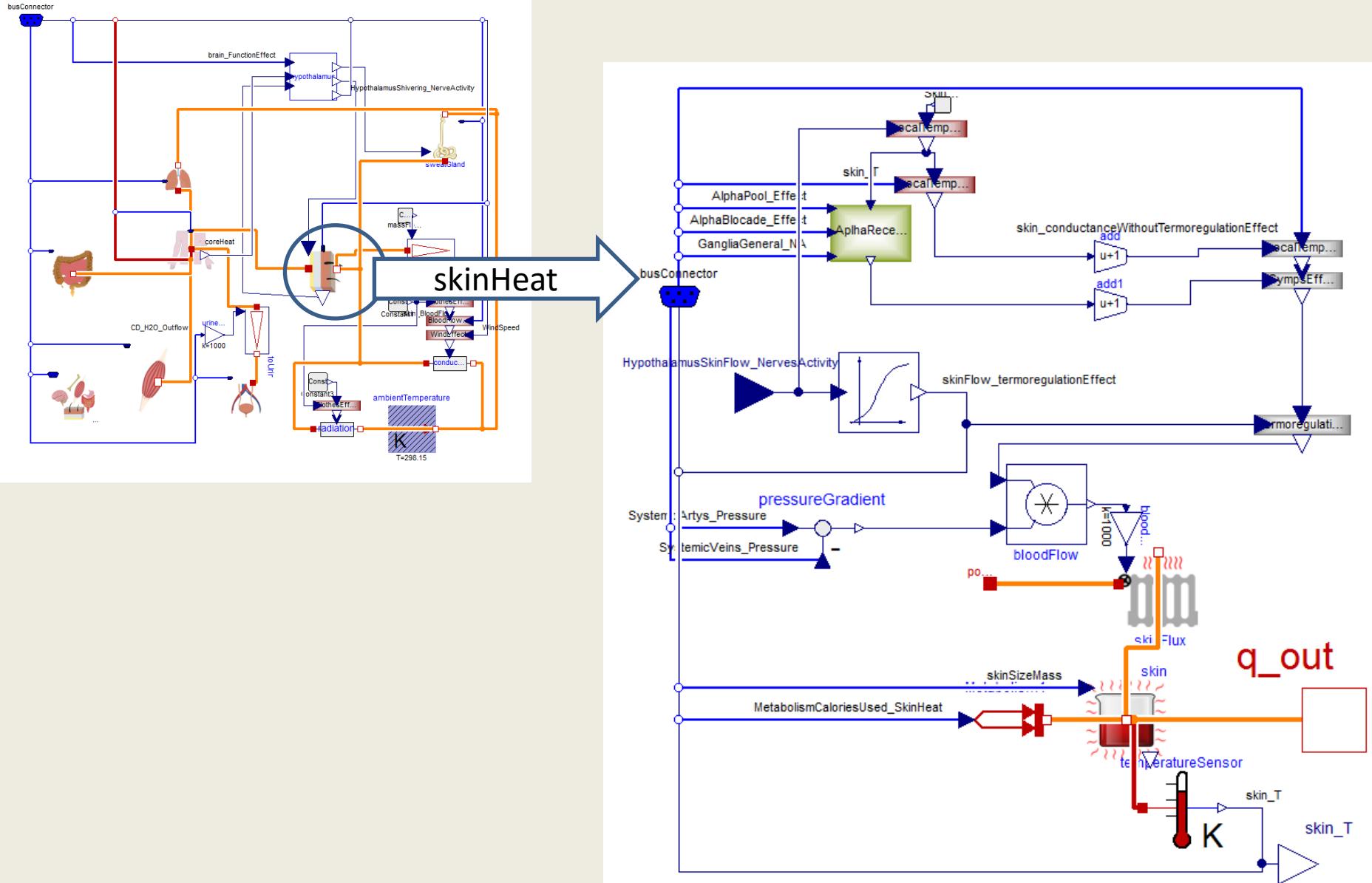
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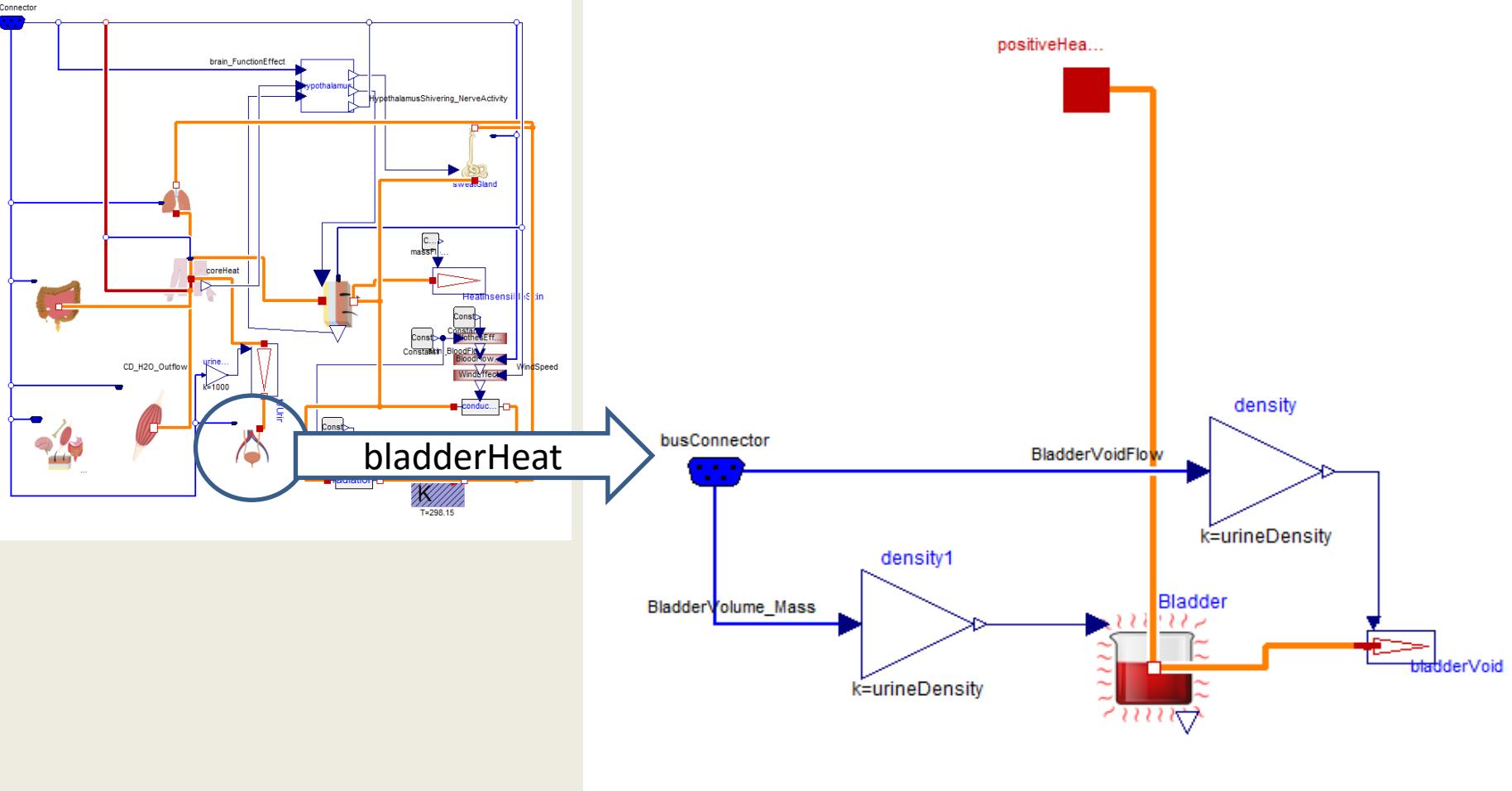
busConnector

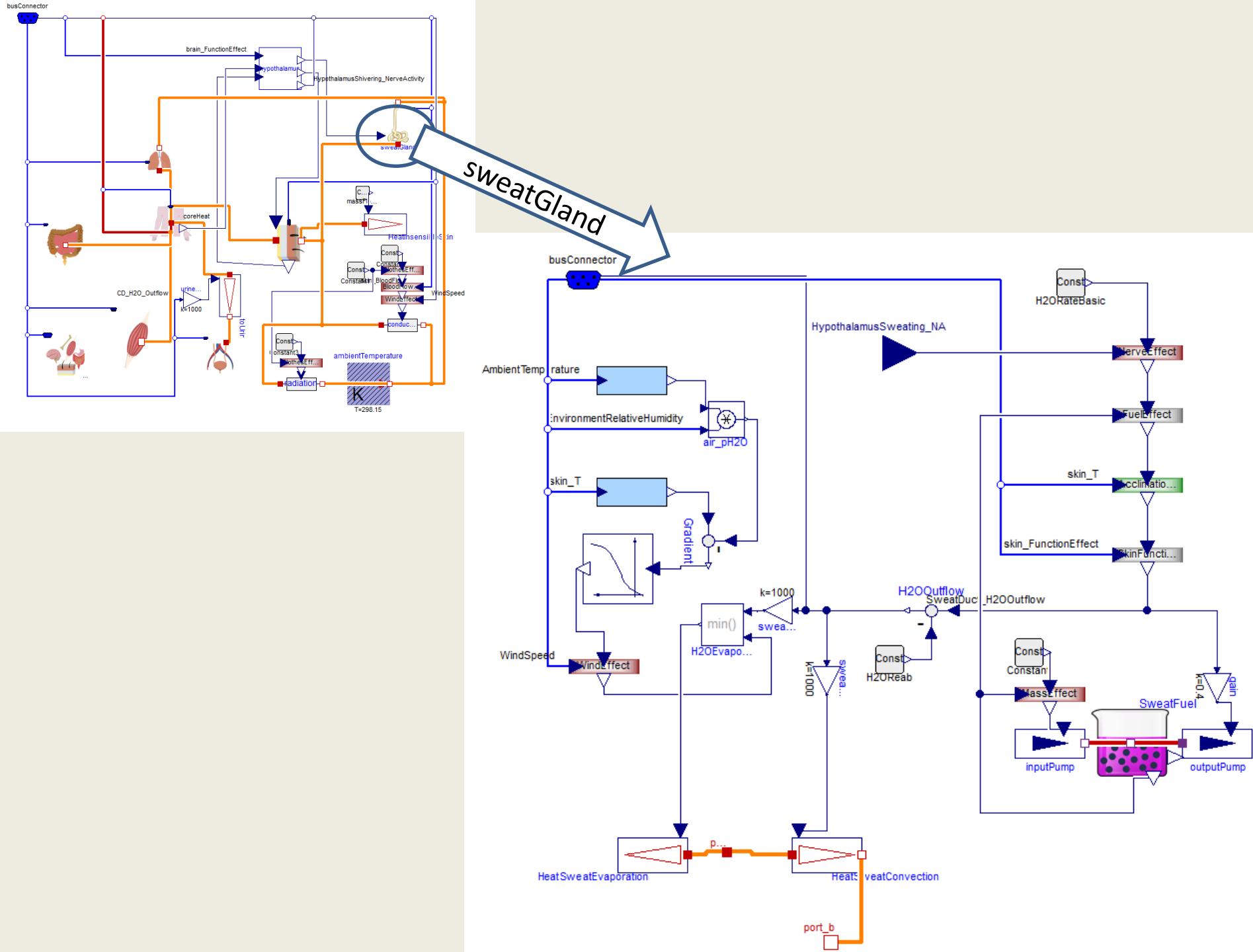


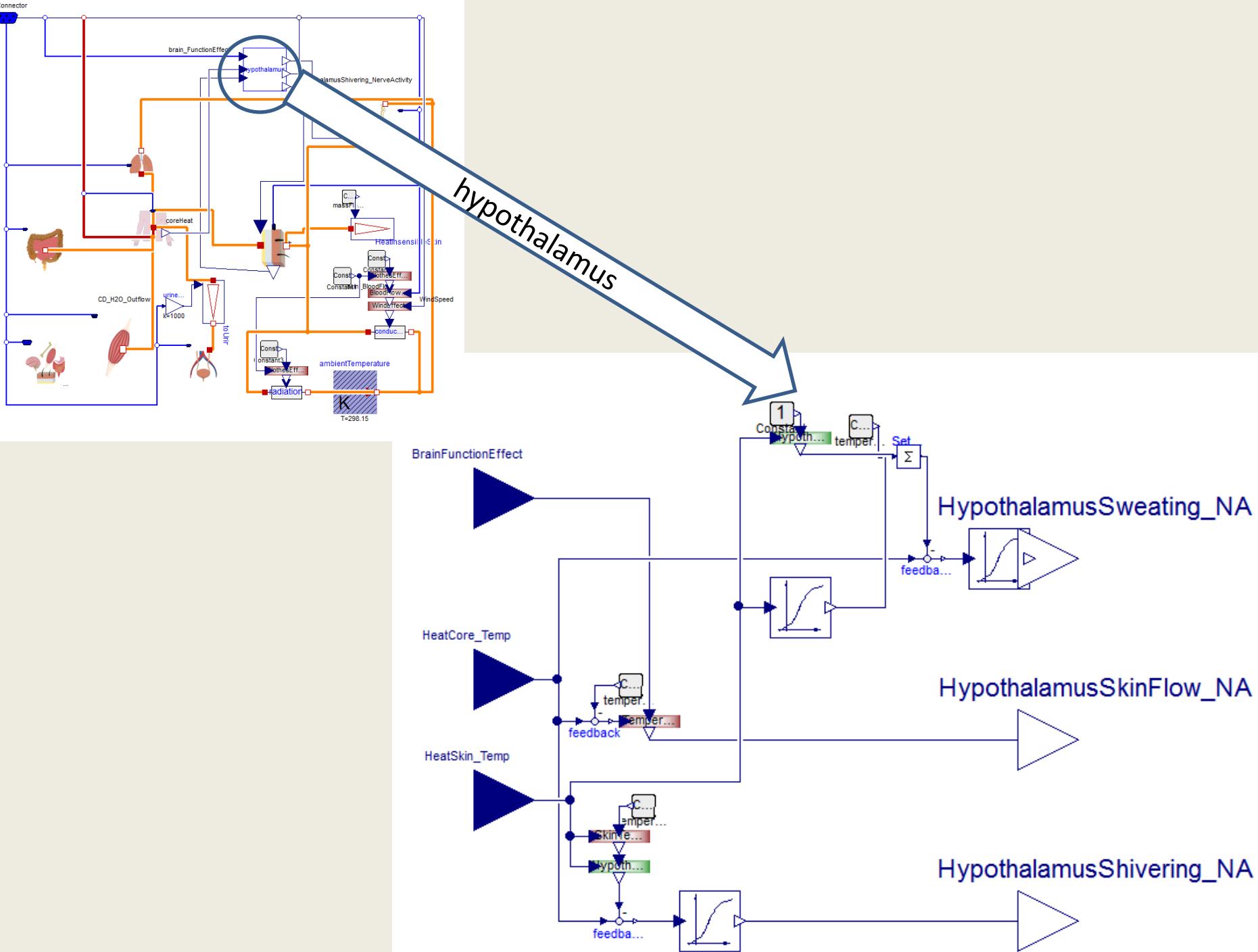


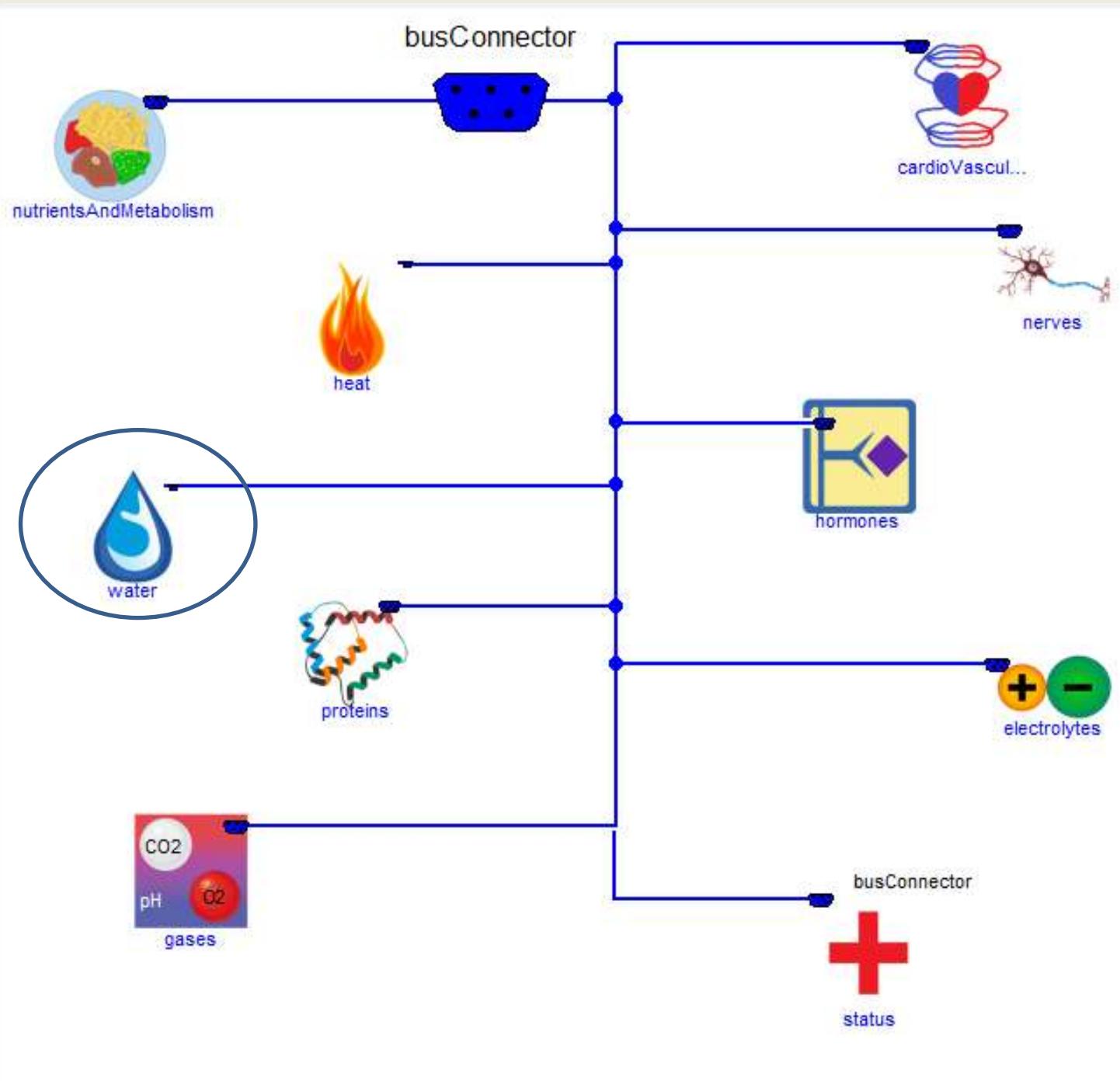


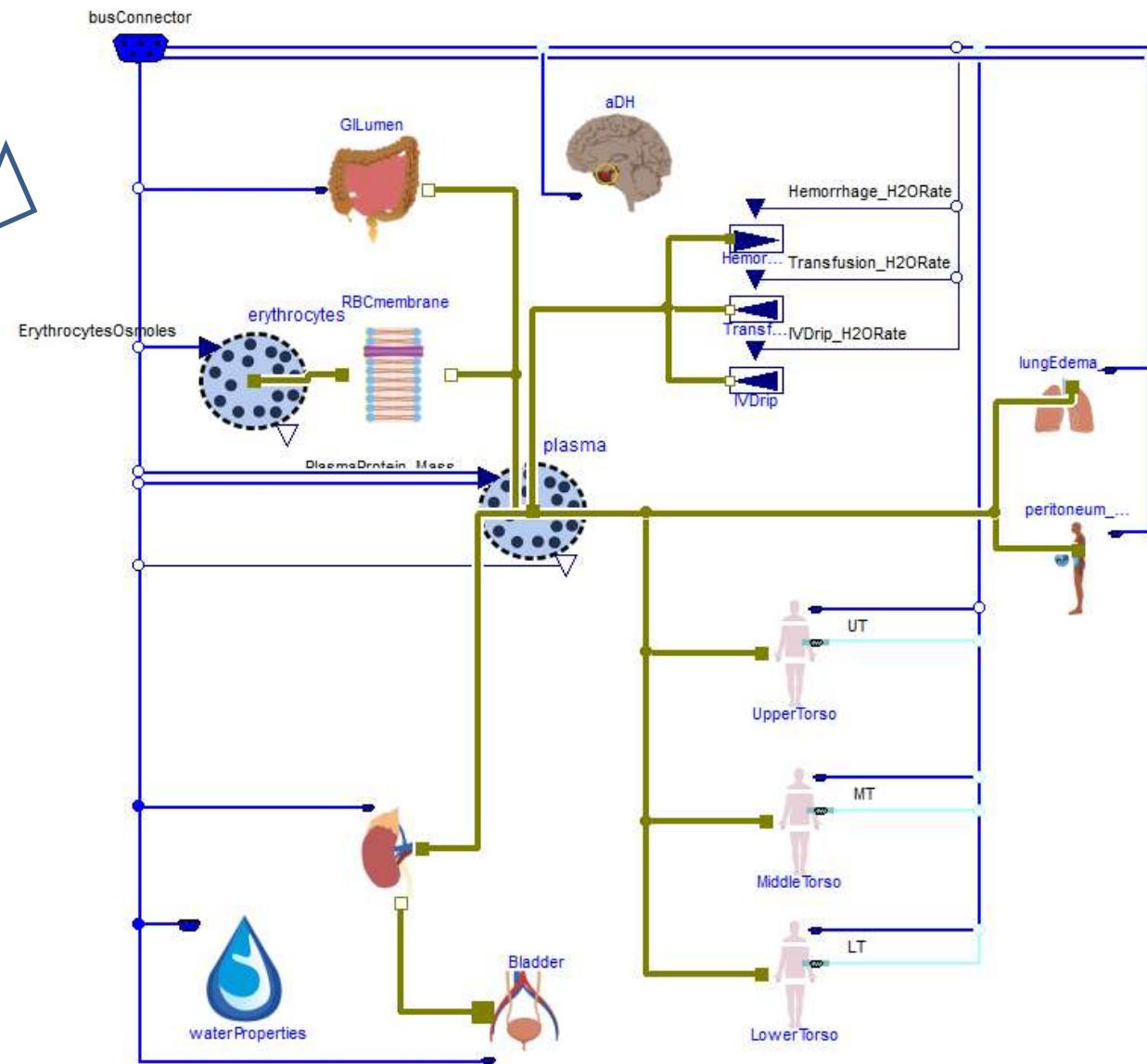
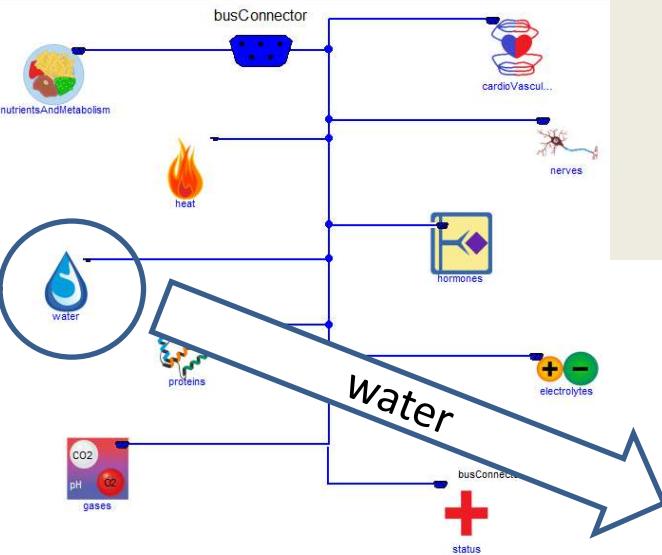


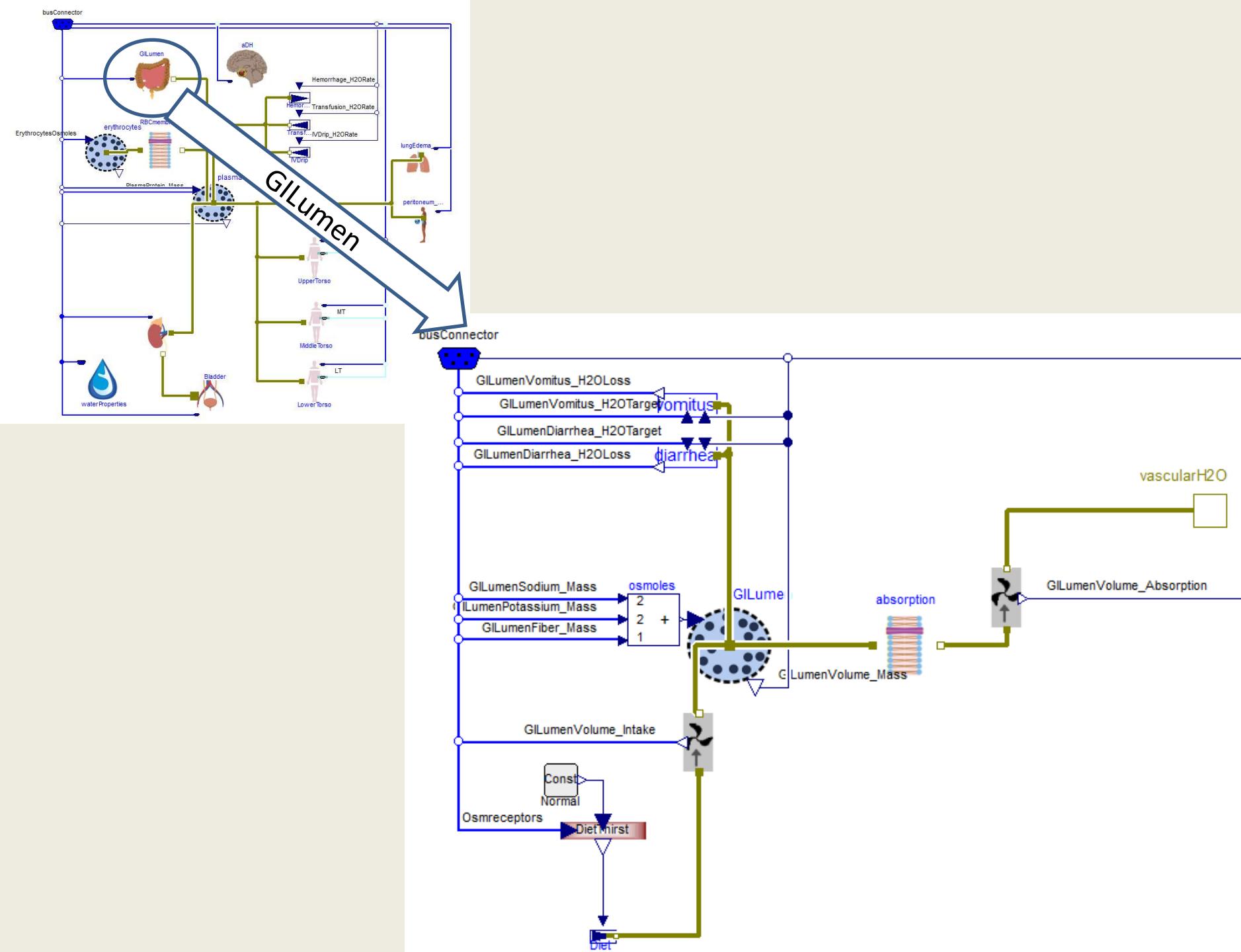


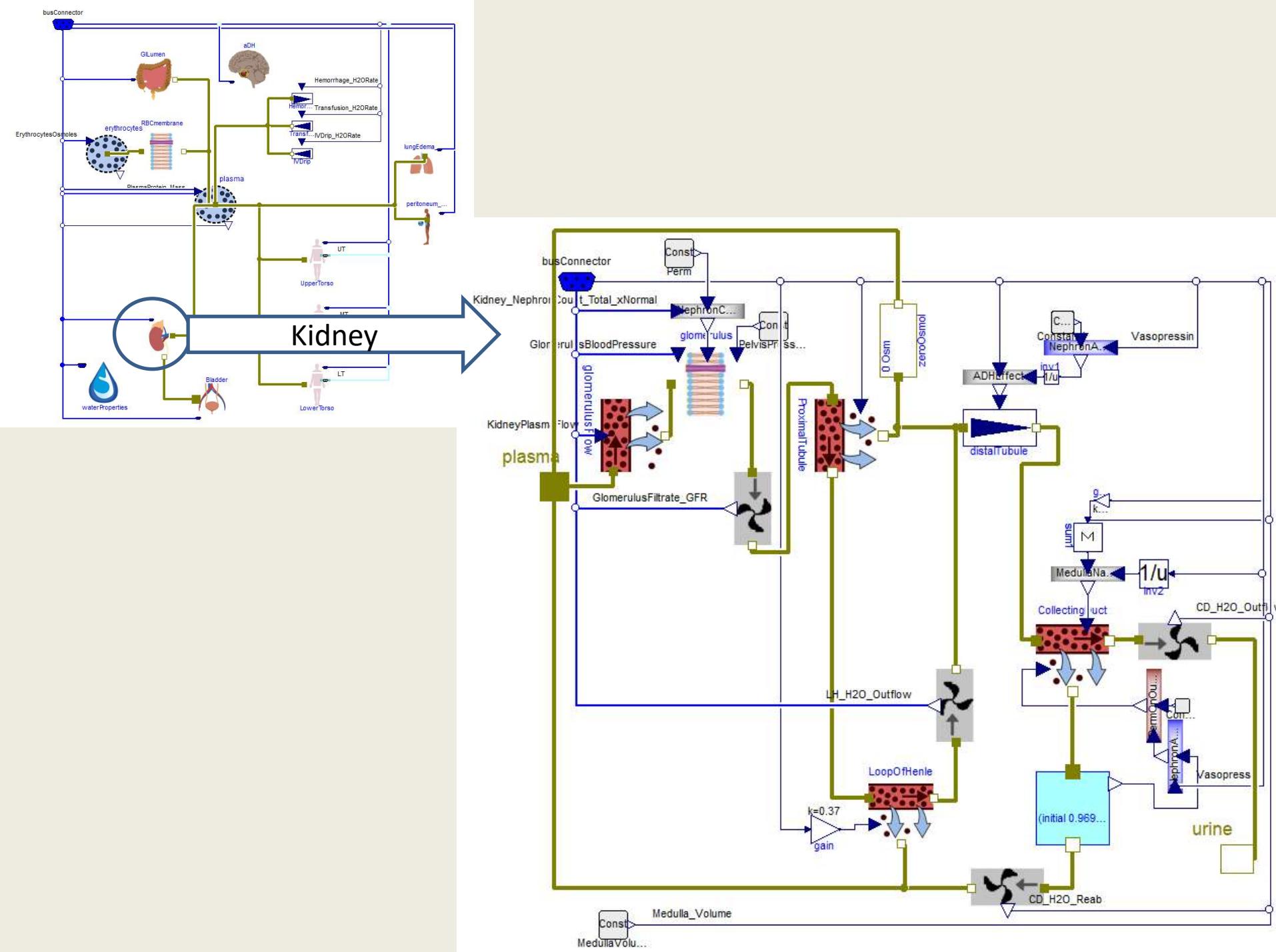


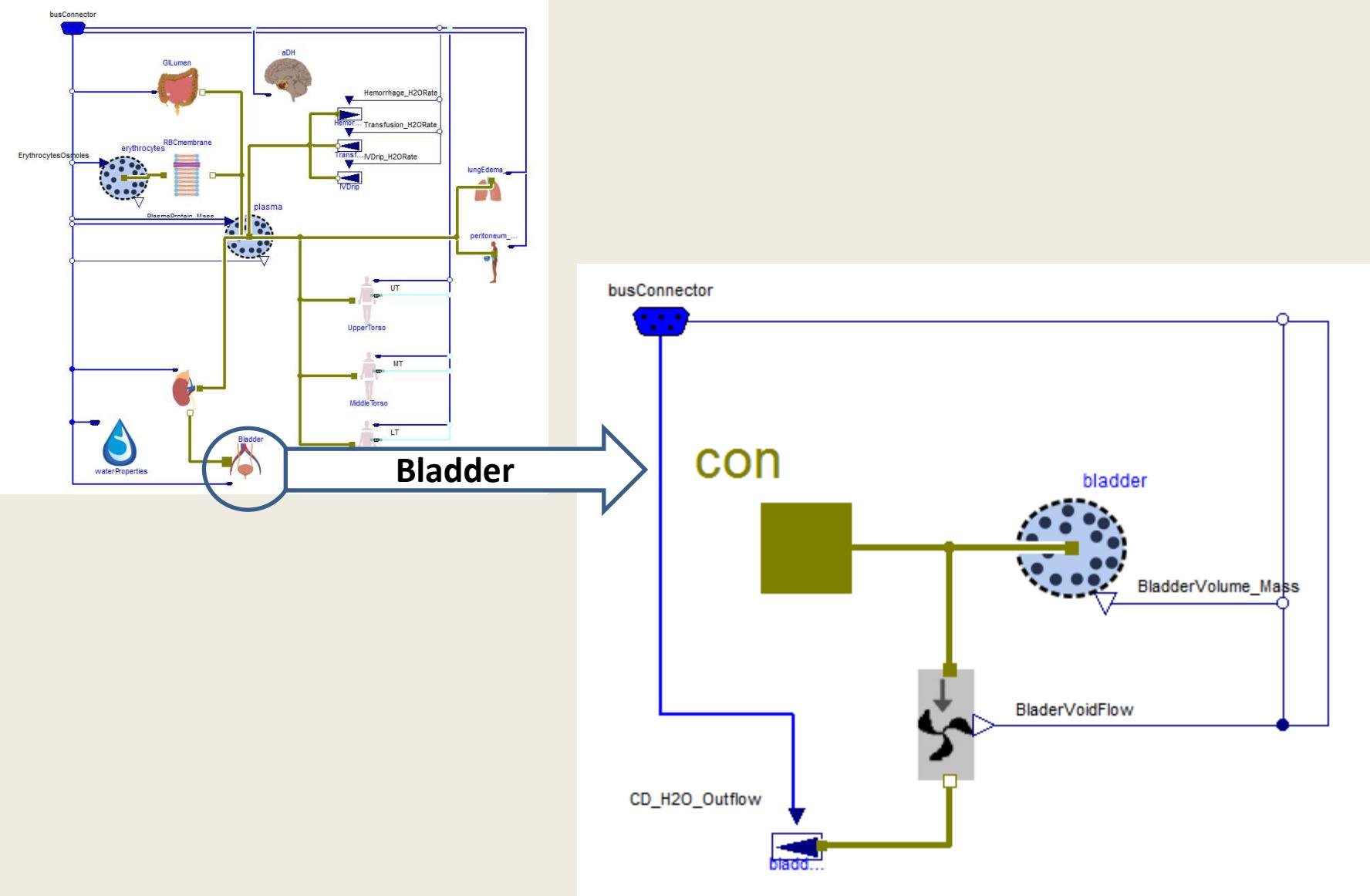


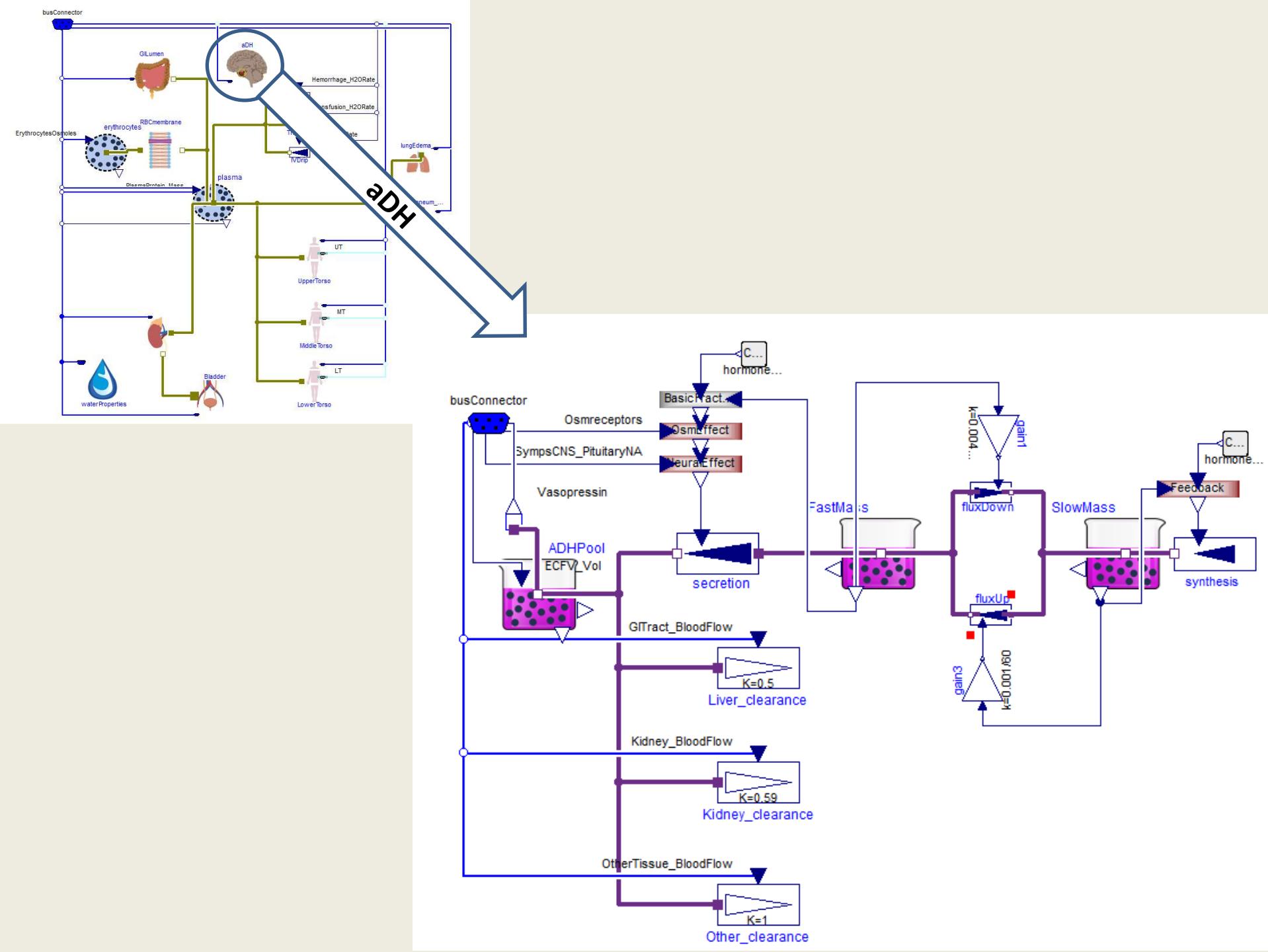


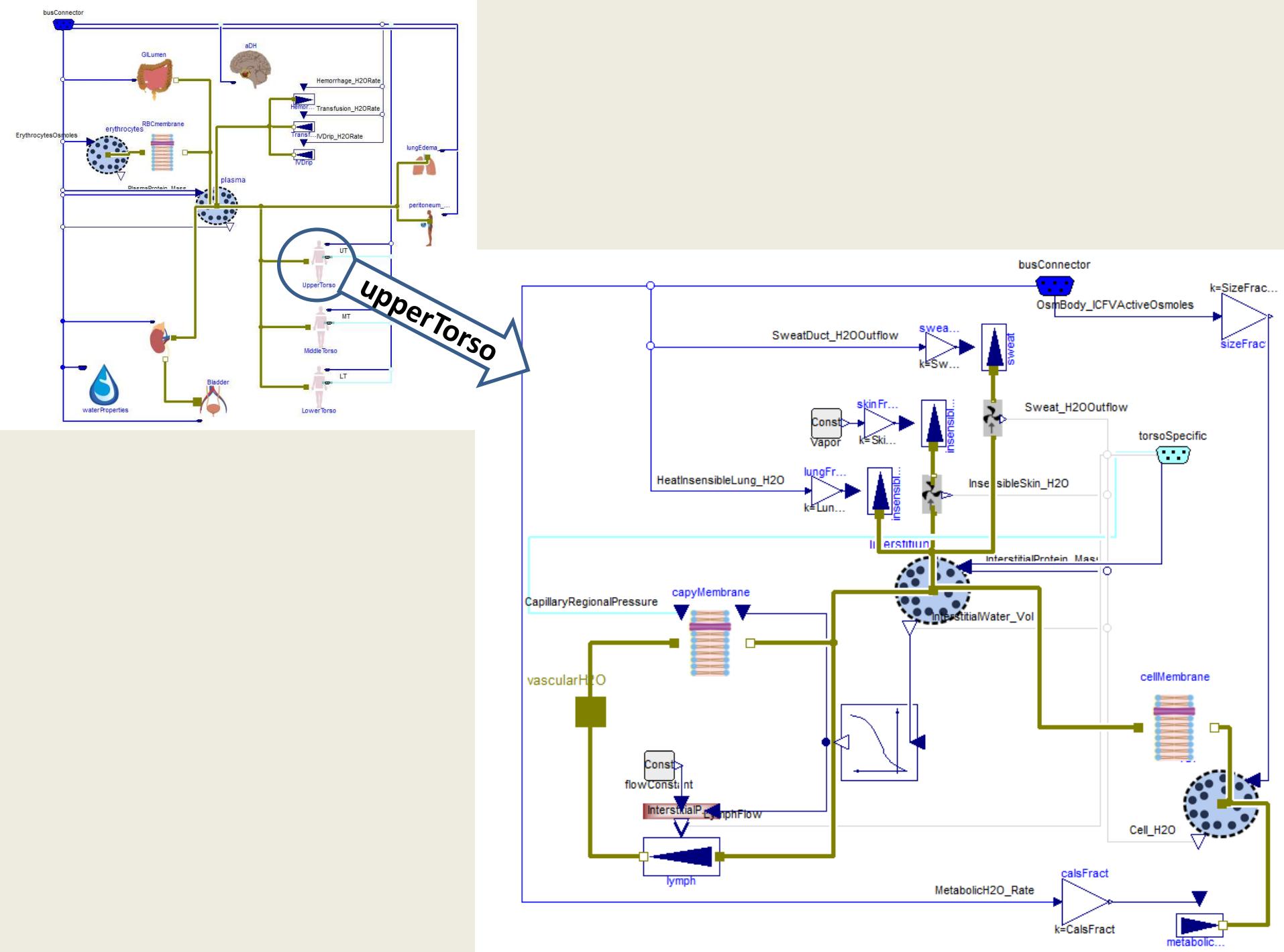


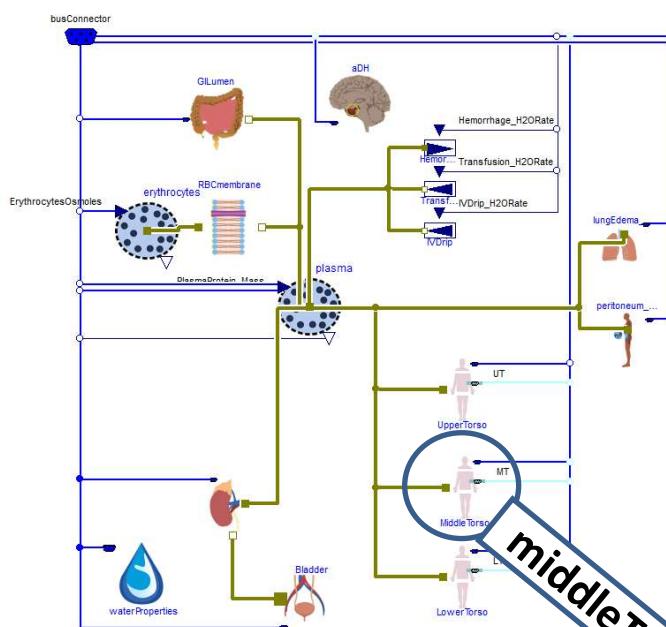




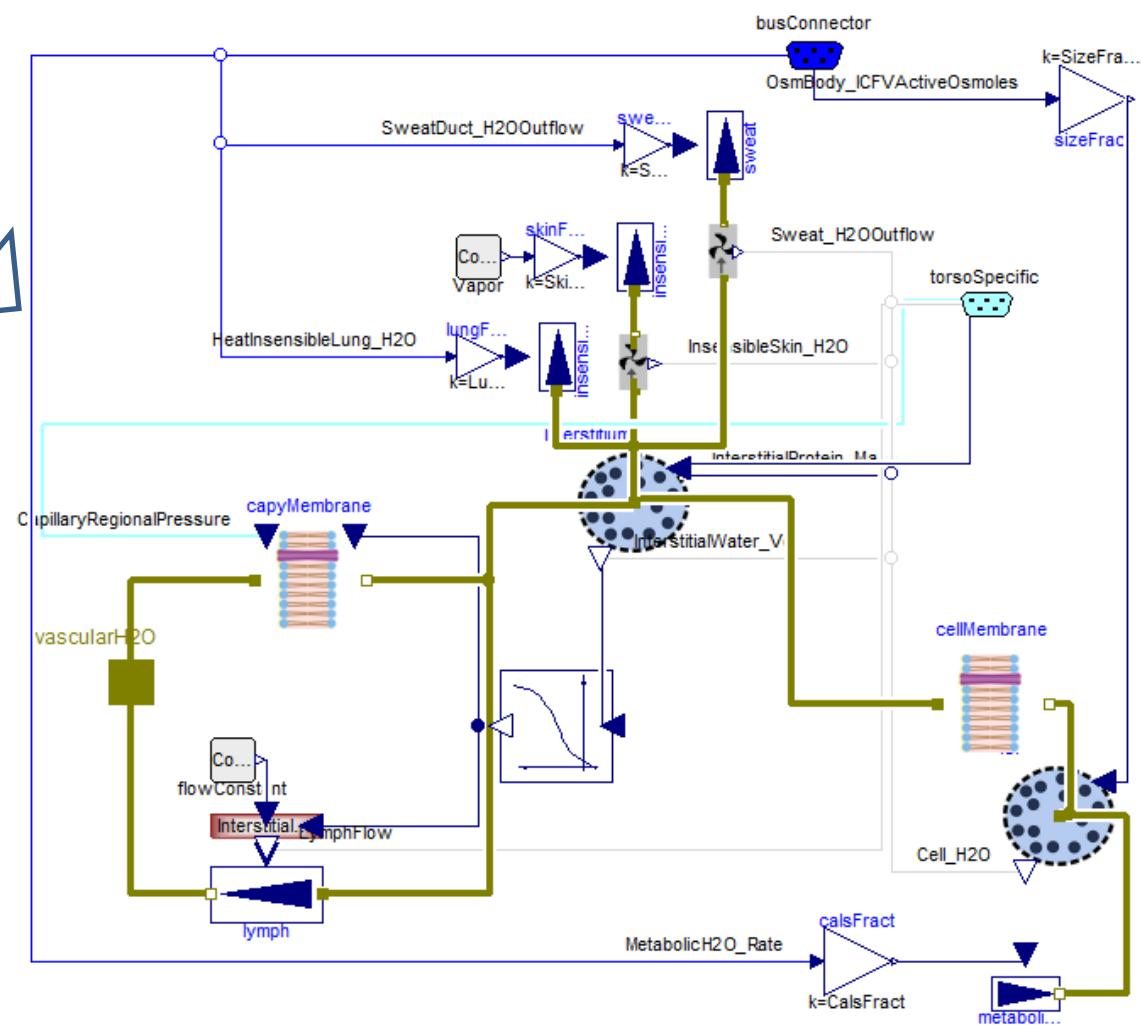


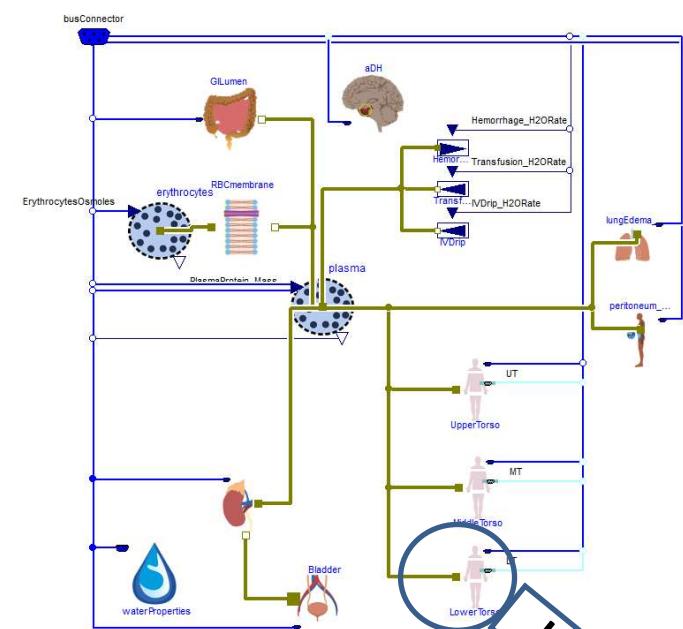




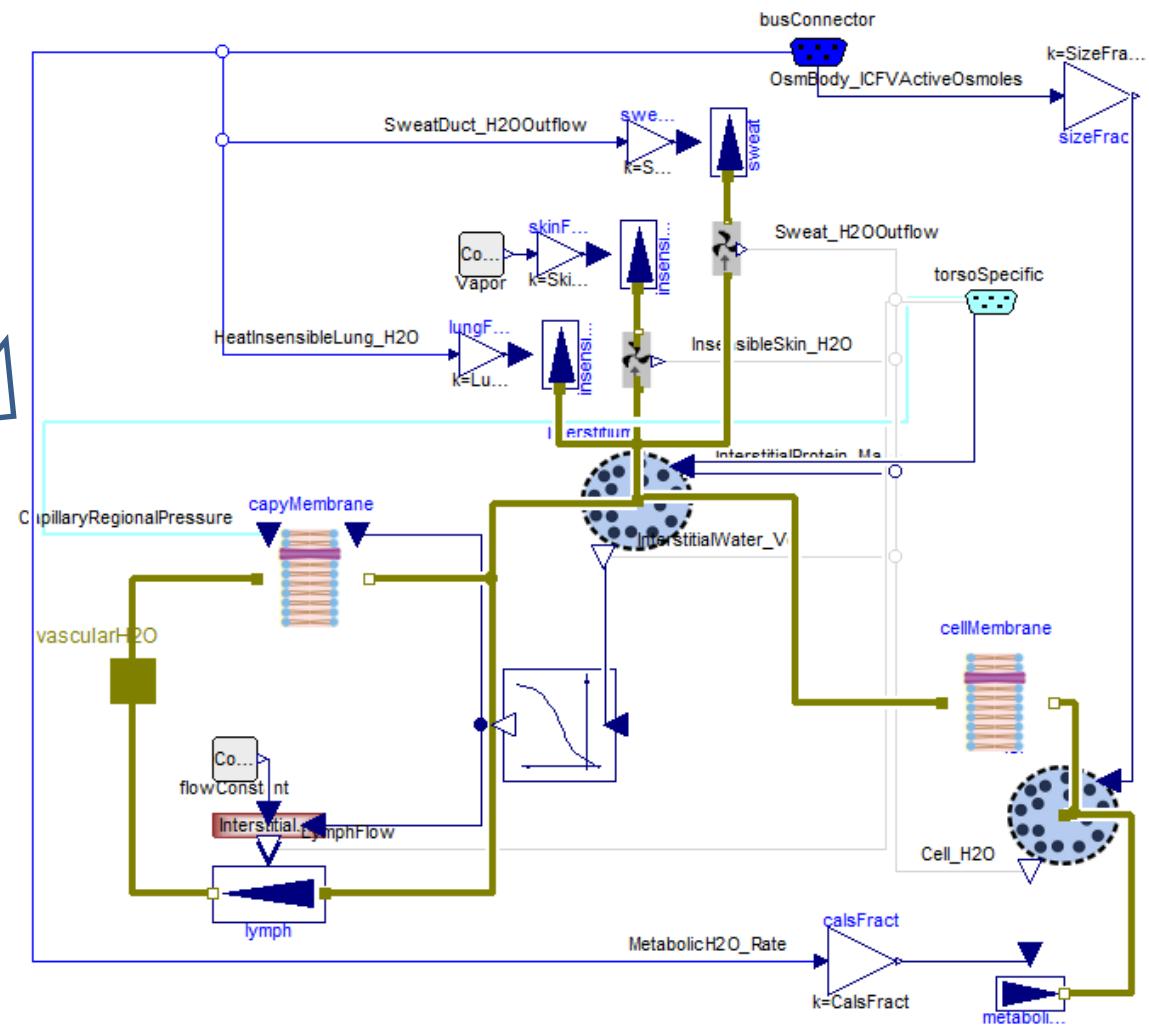


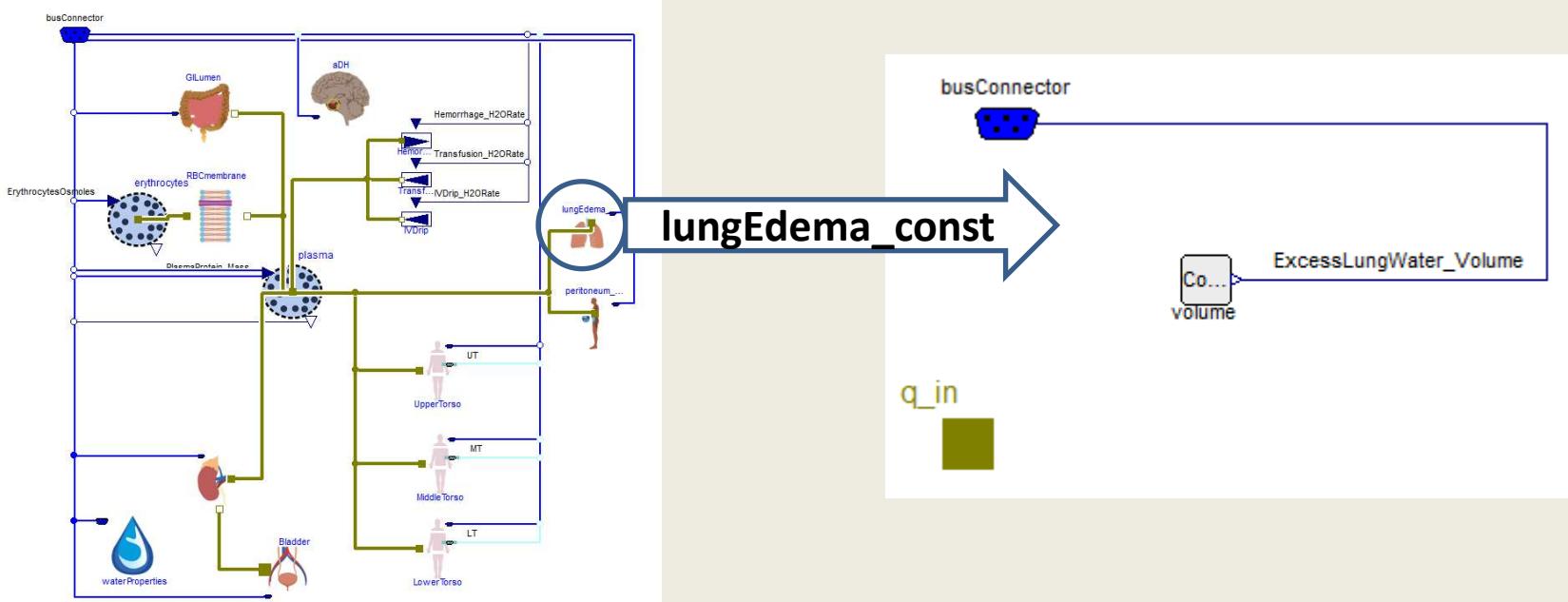
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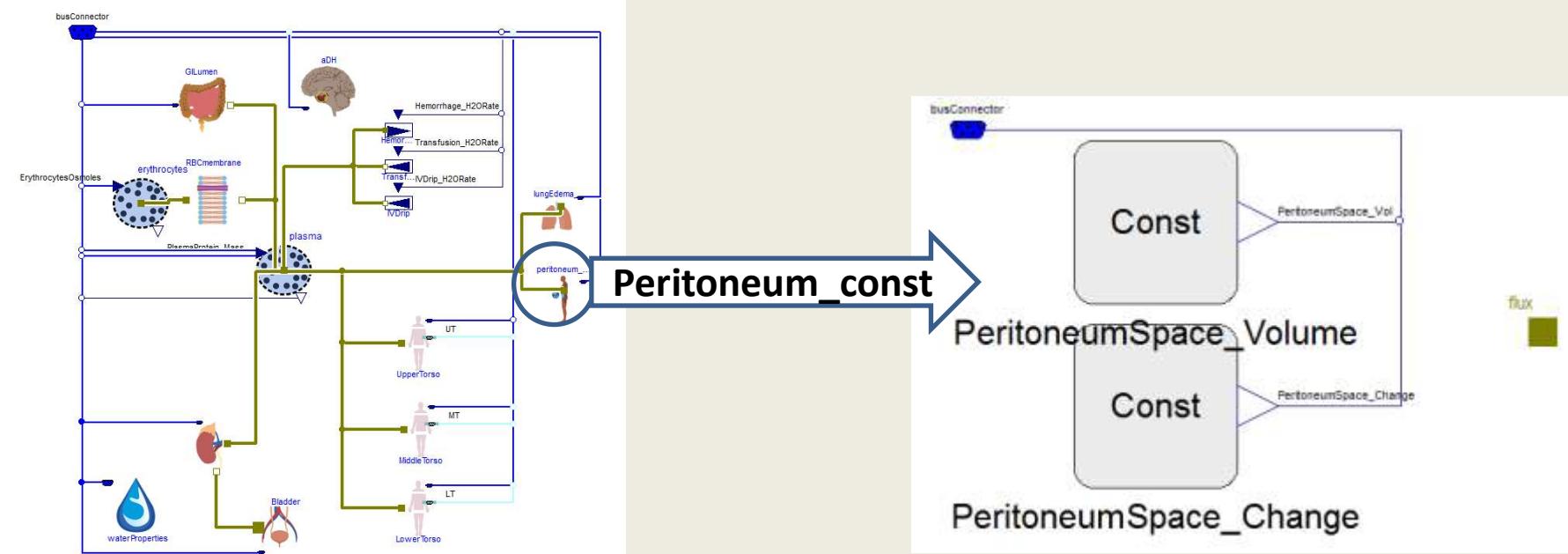


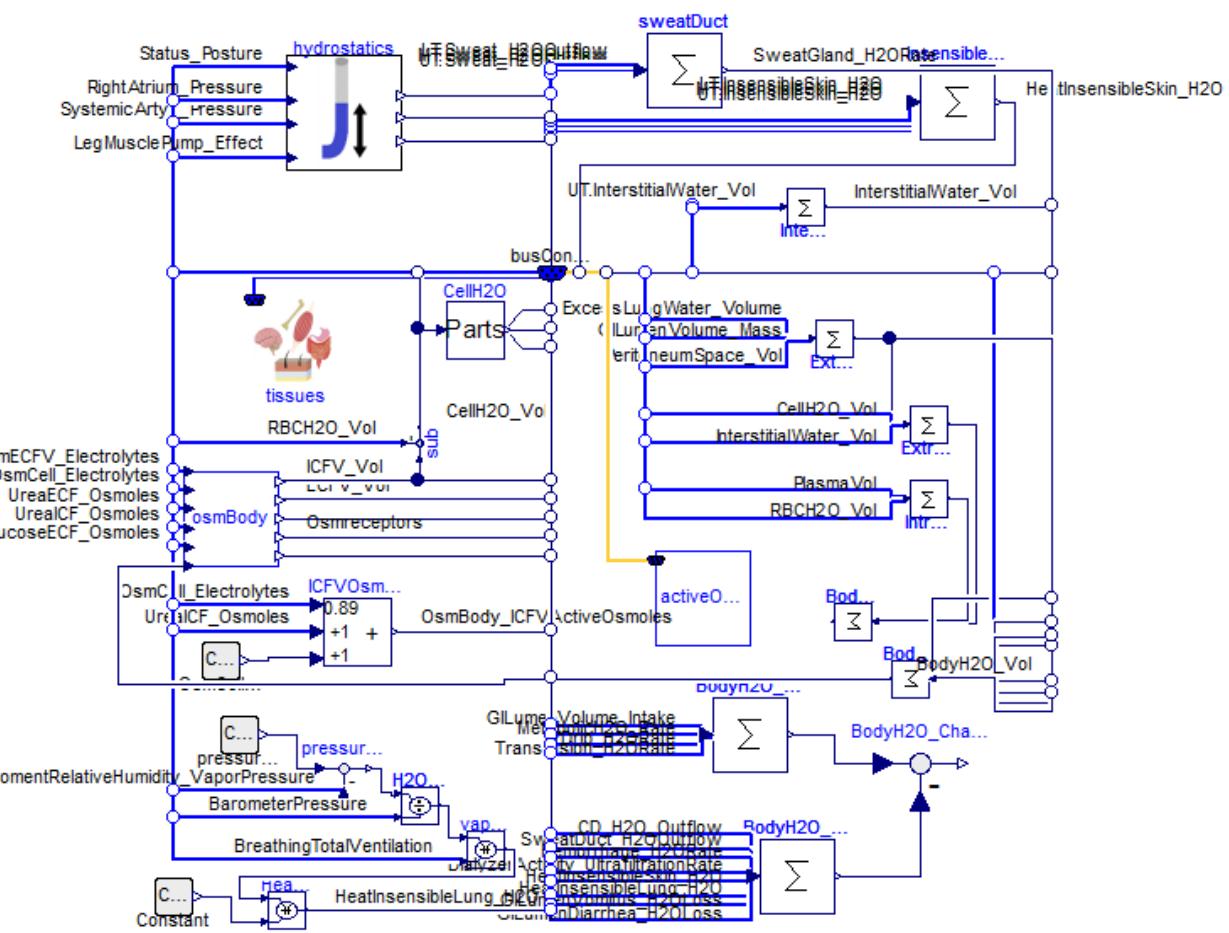
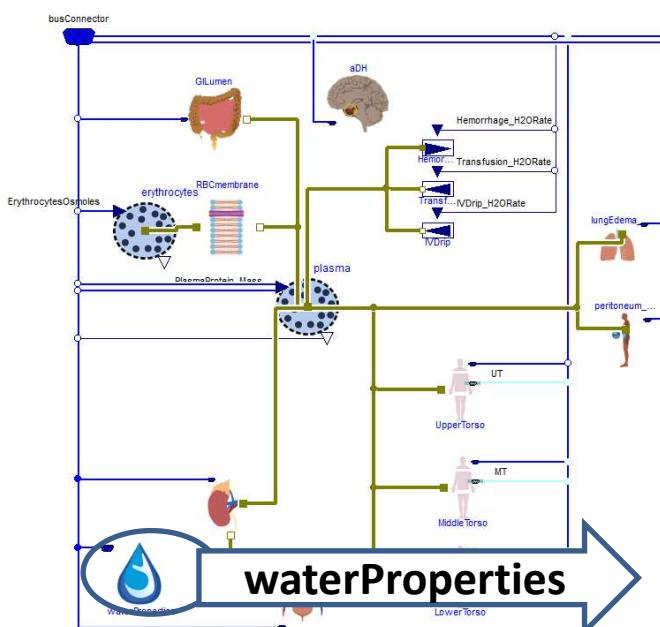


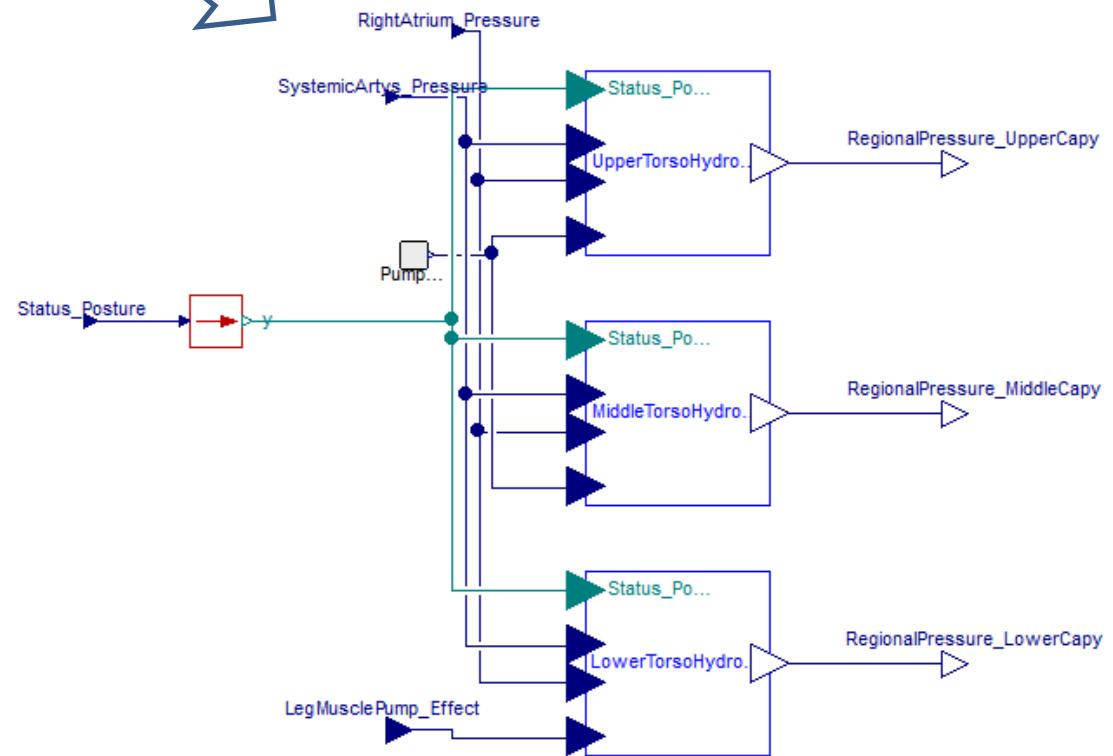
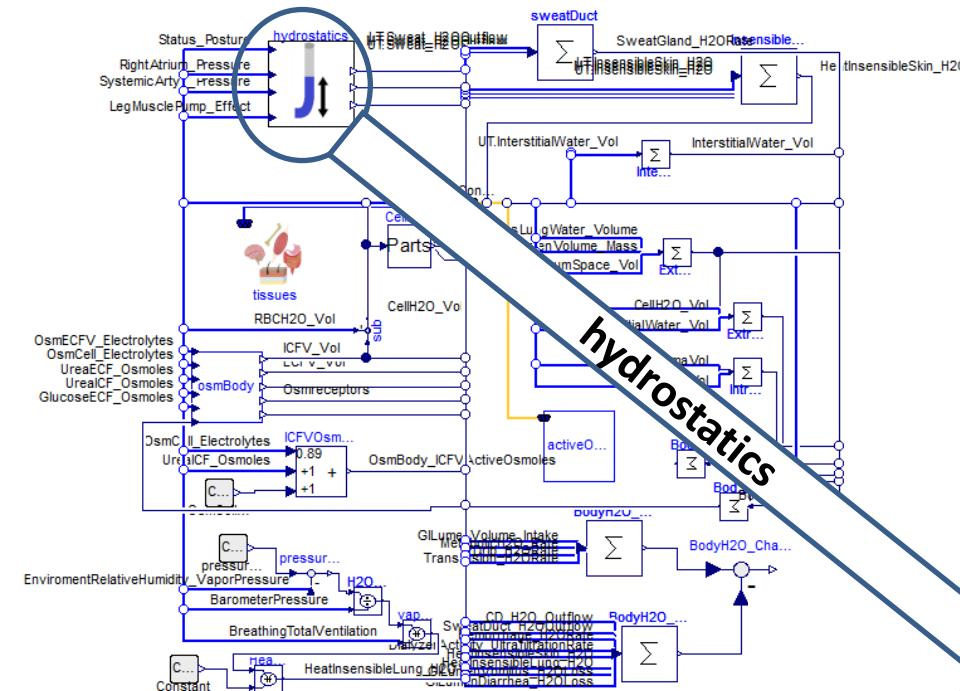
lowerTorus

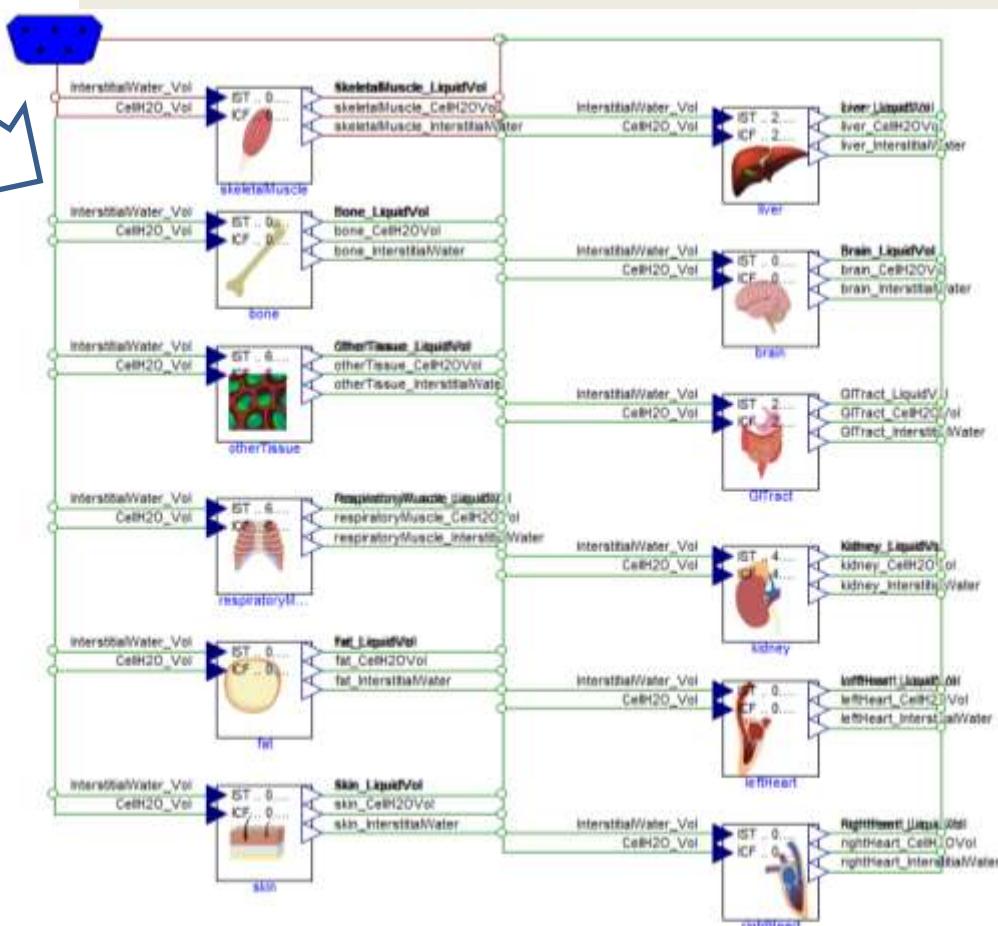
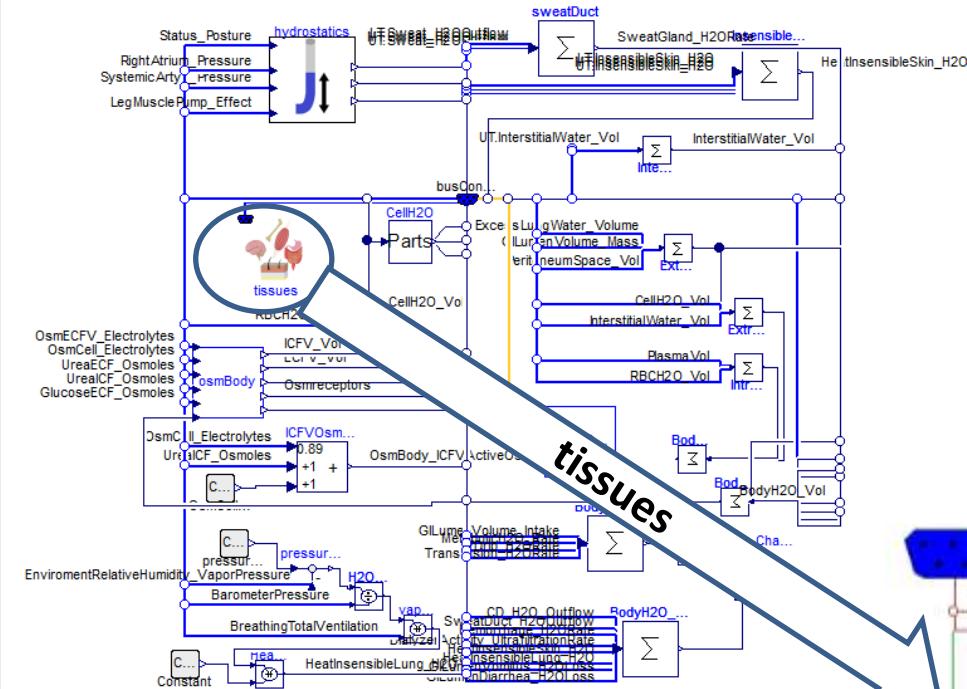


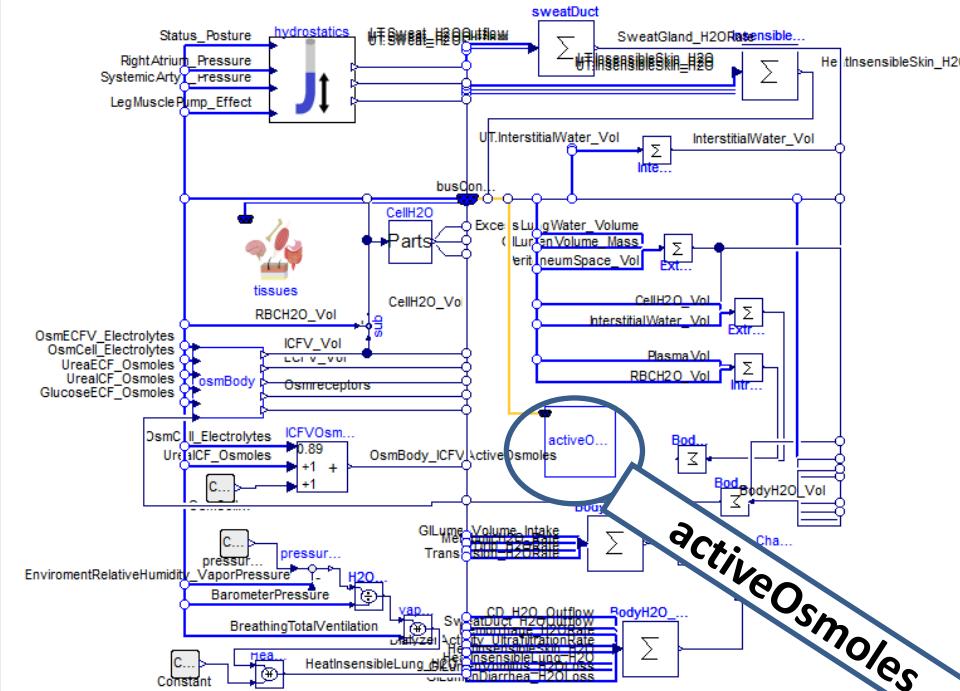




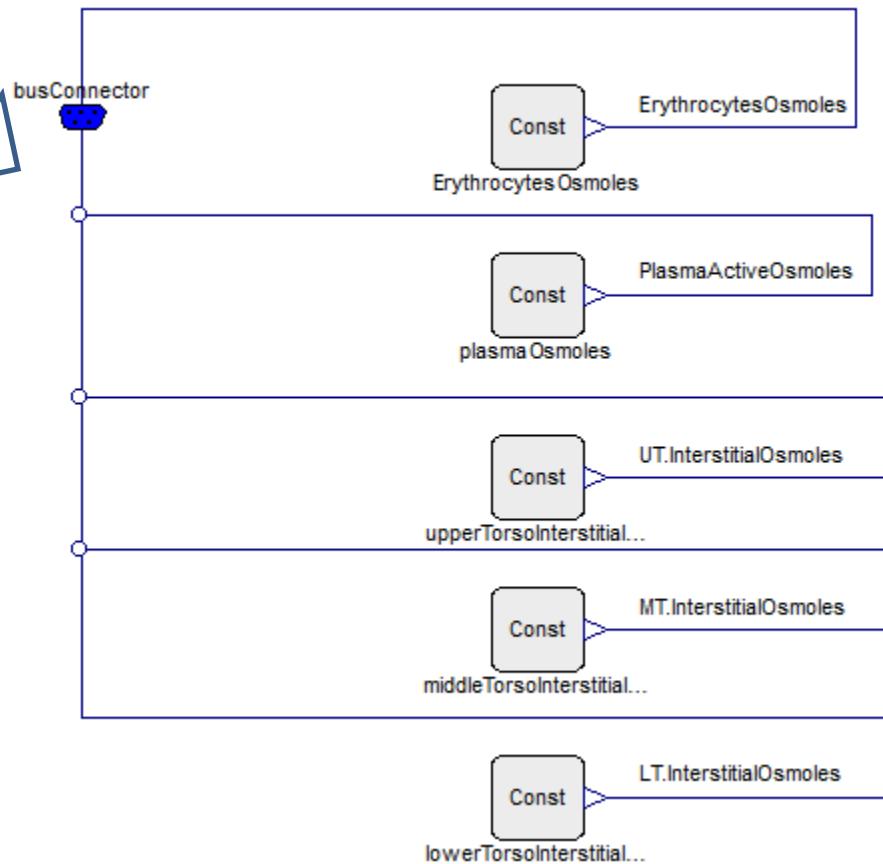


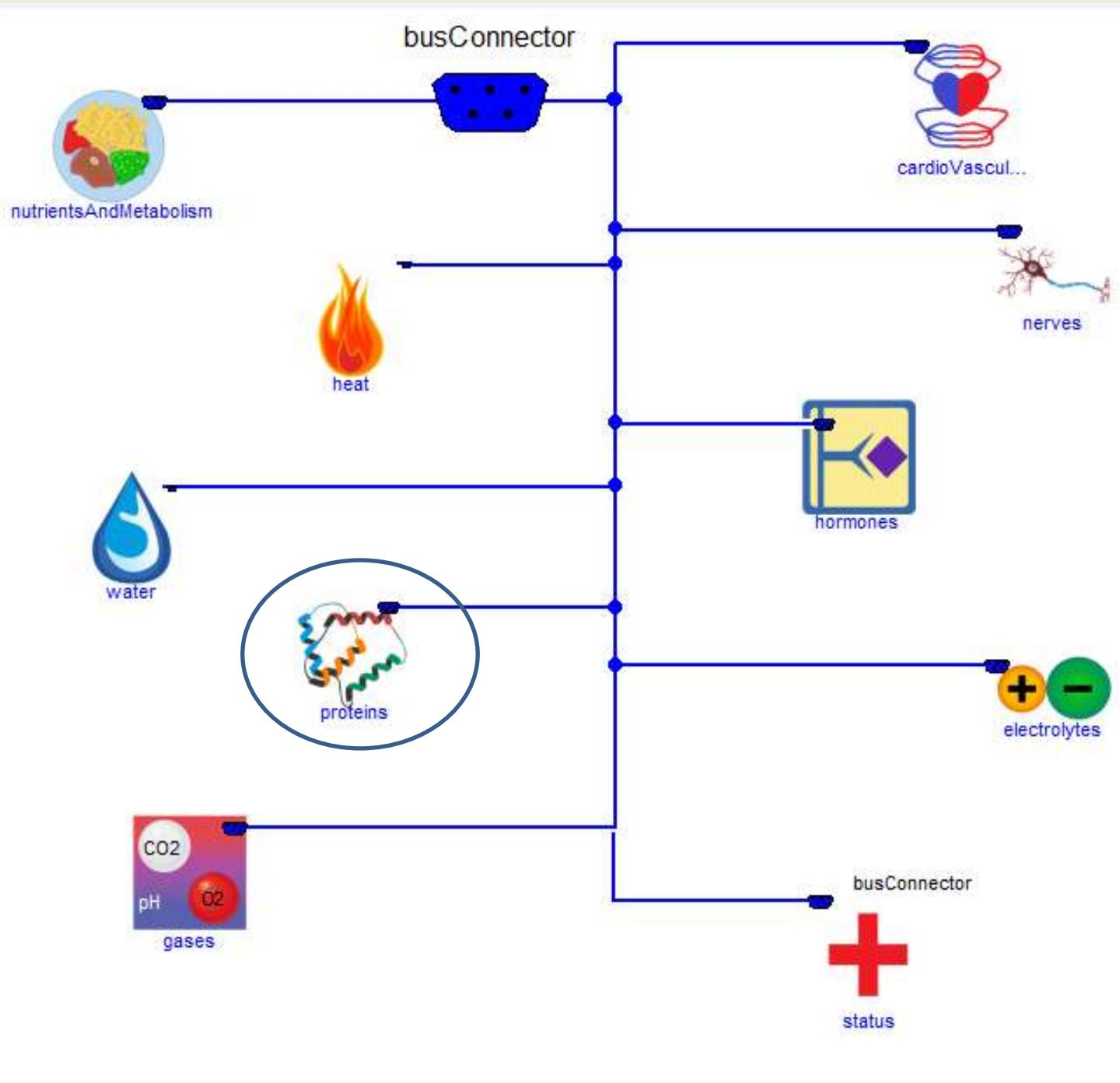


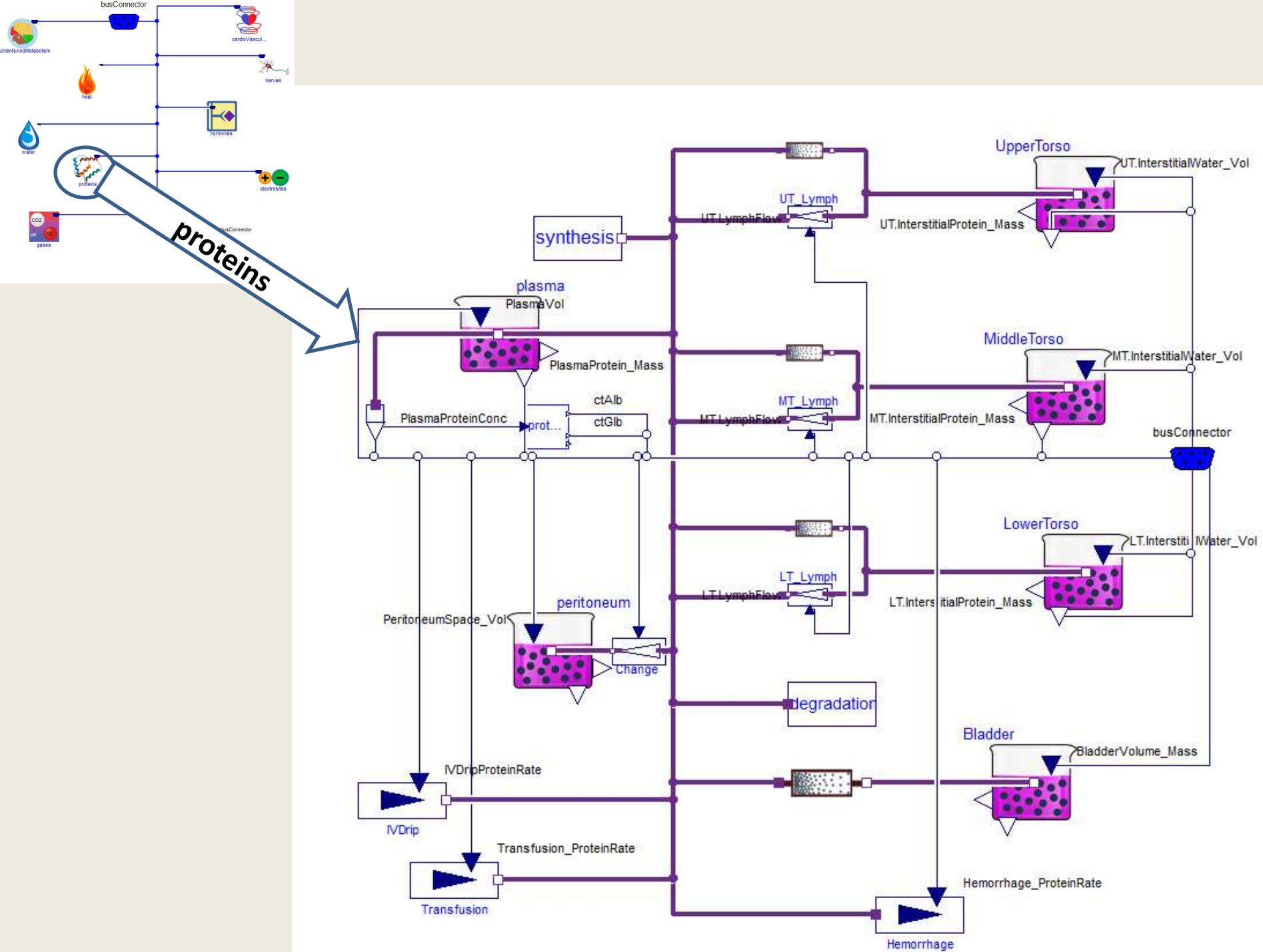


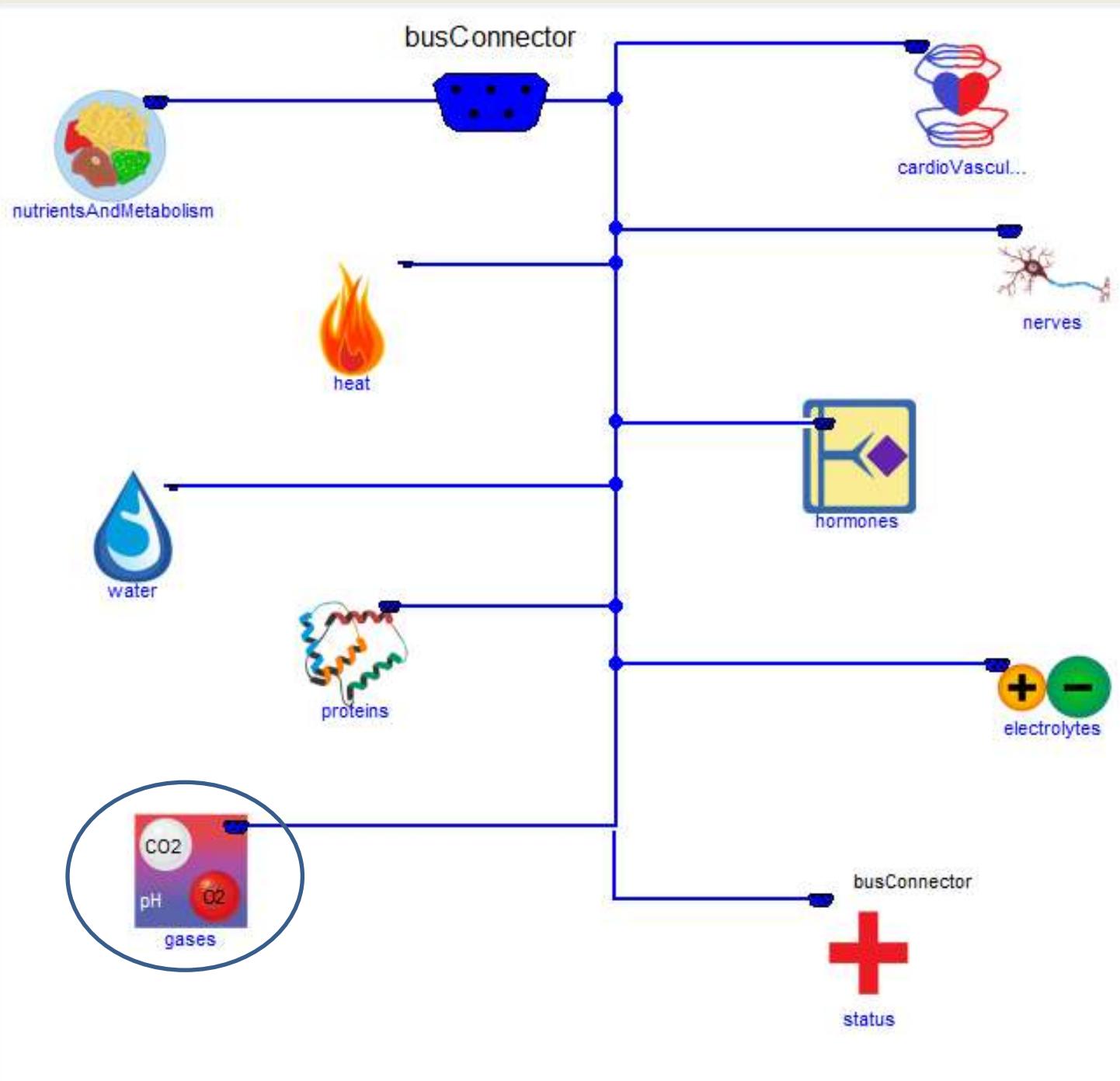


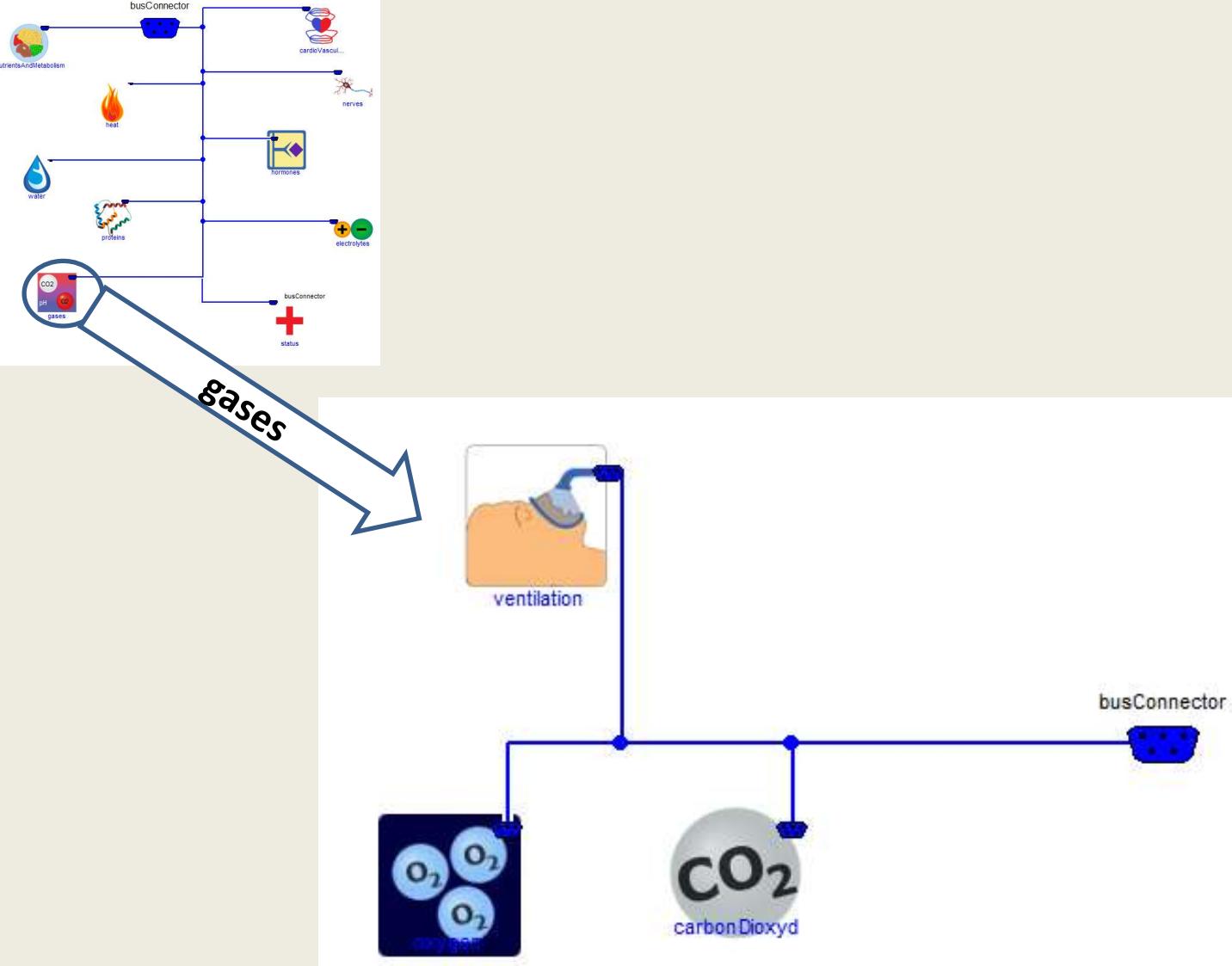
activeOsmoles

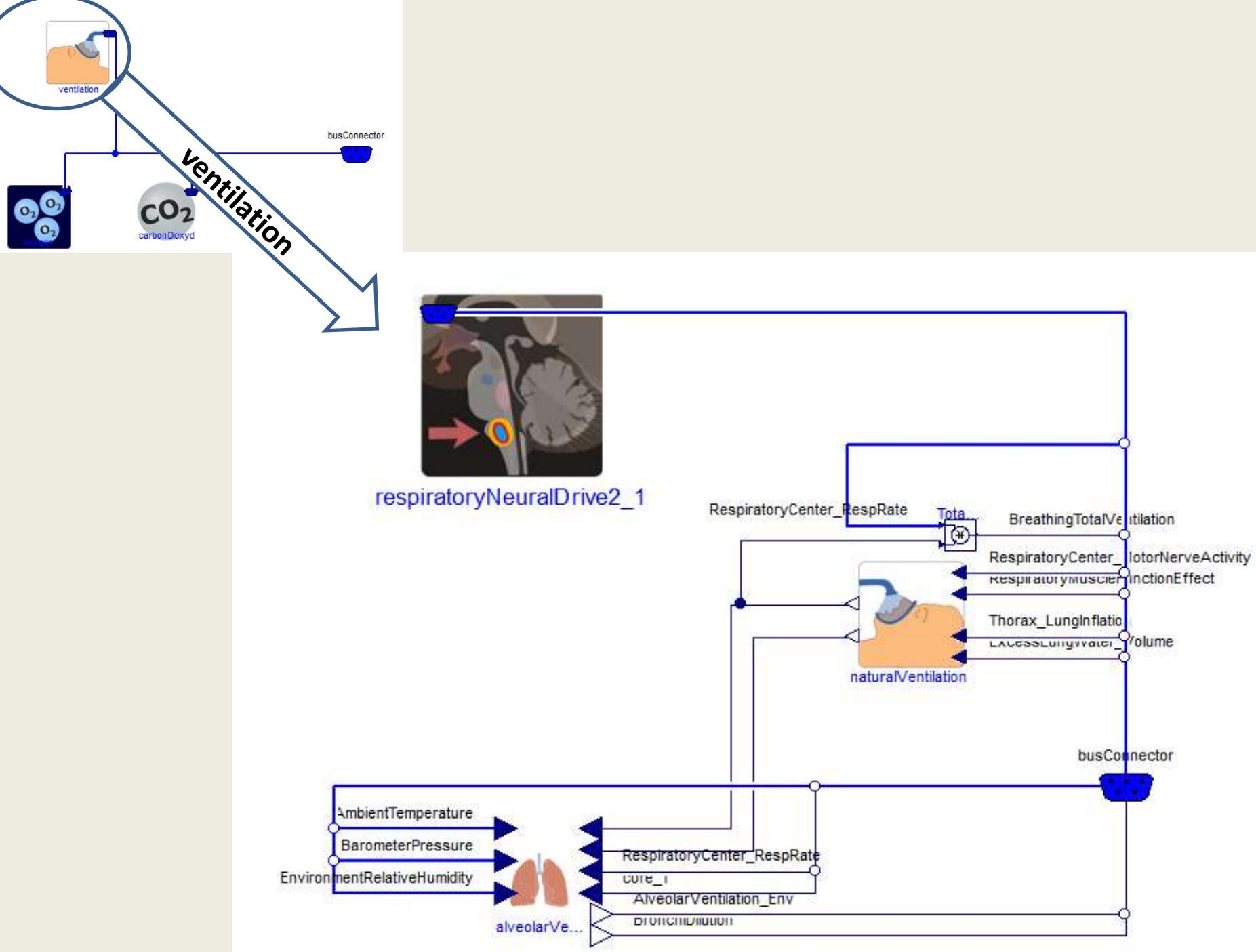






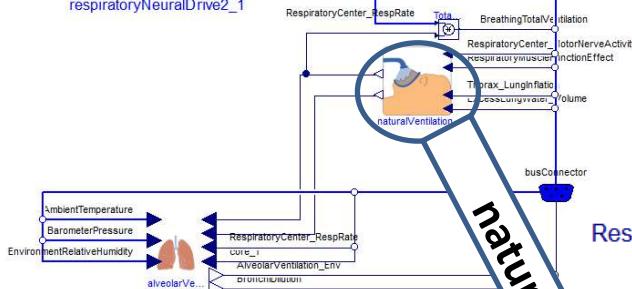




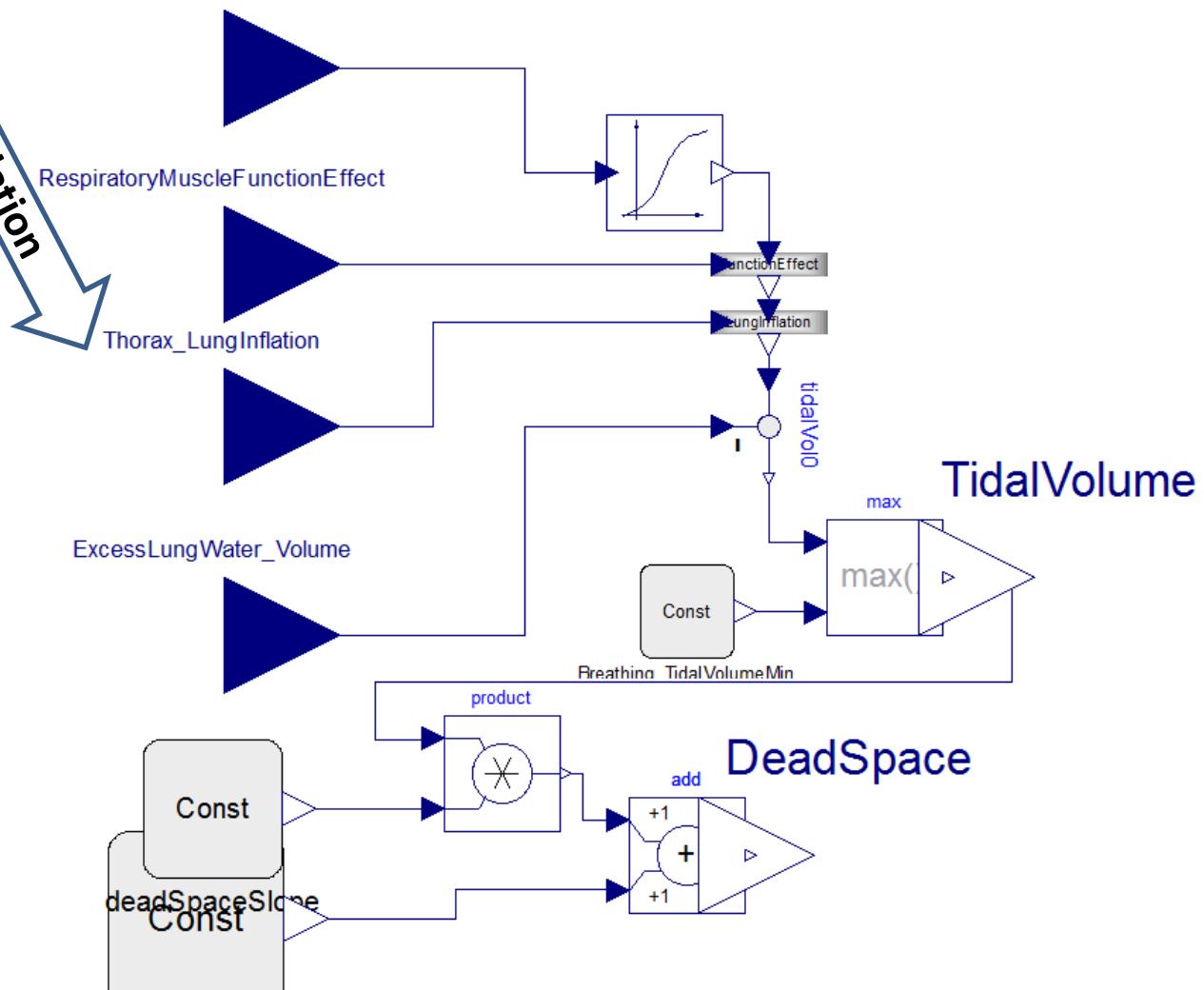




respiratoryNeuralDrive2_1

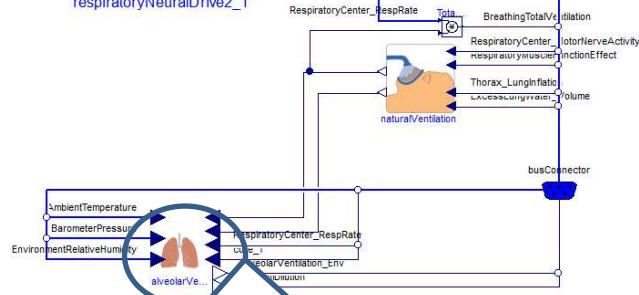


RespiratoryCenterOutput_MotorNerveActivity

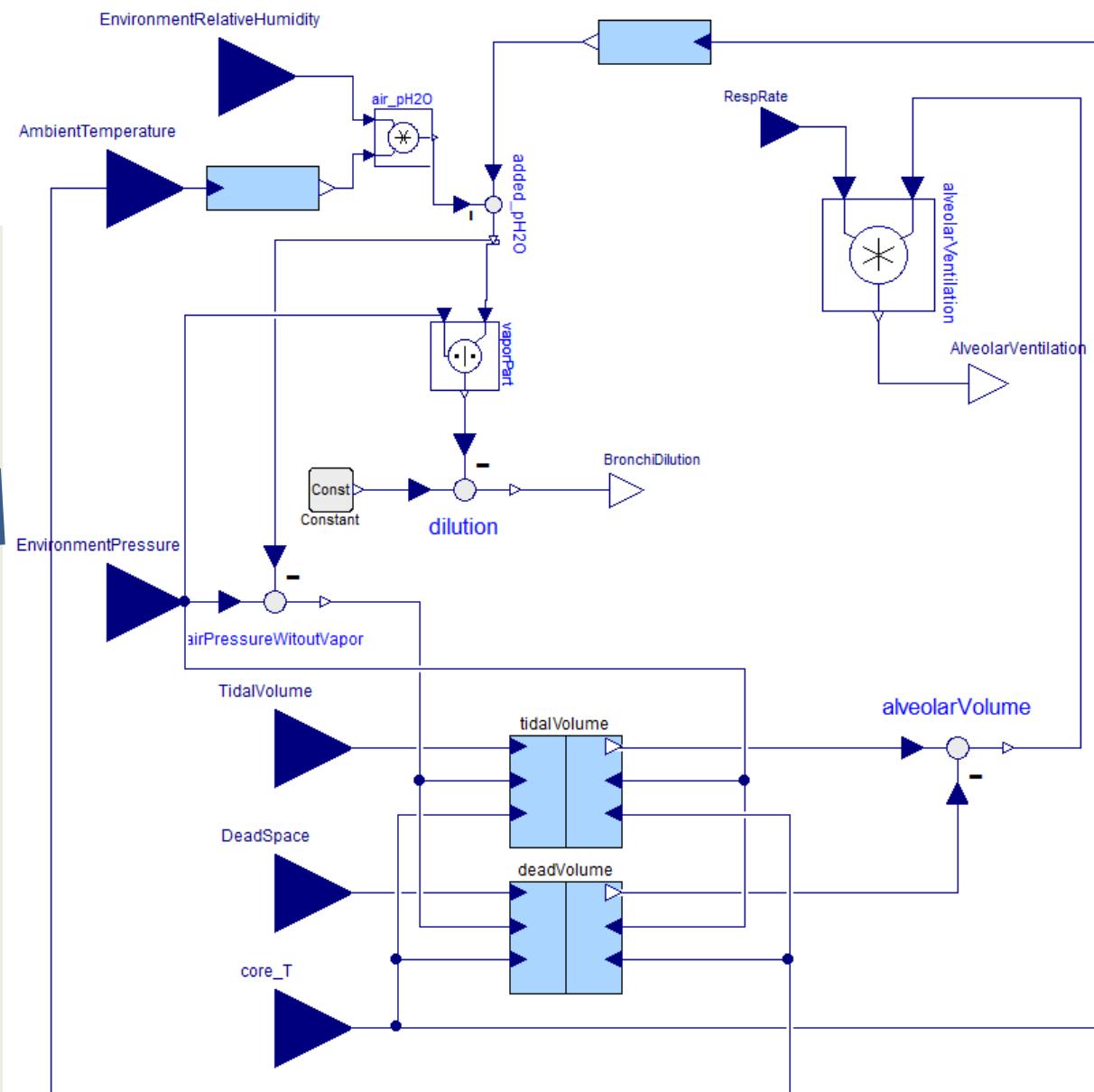


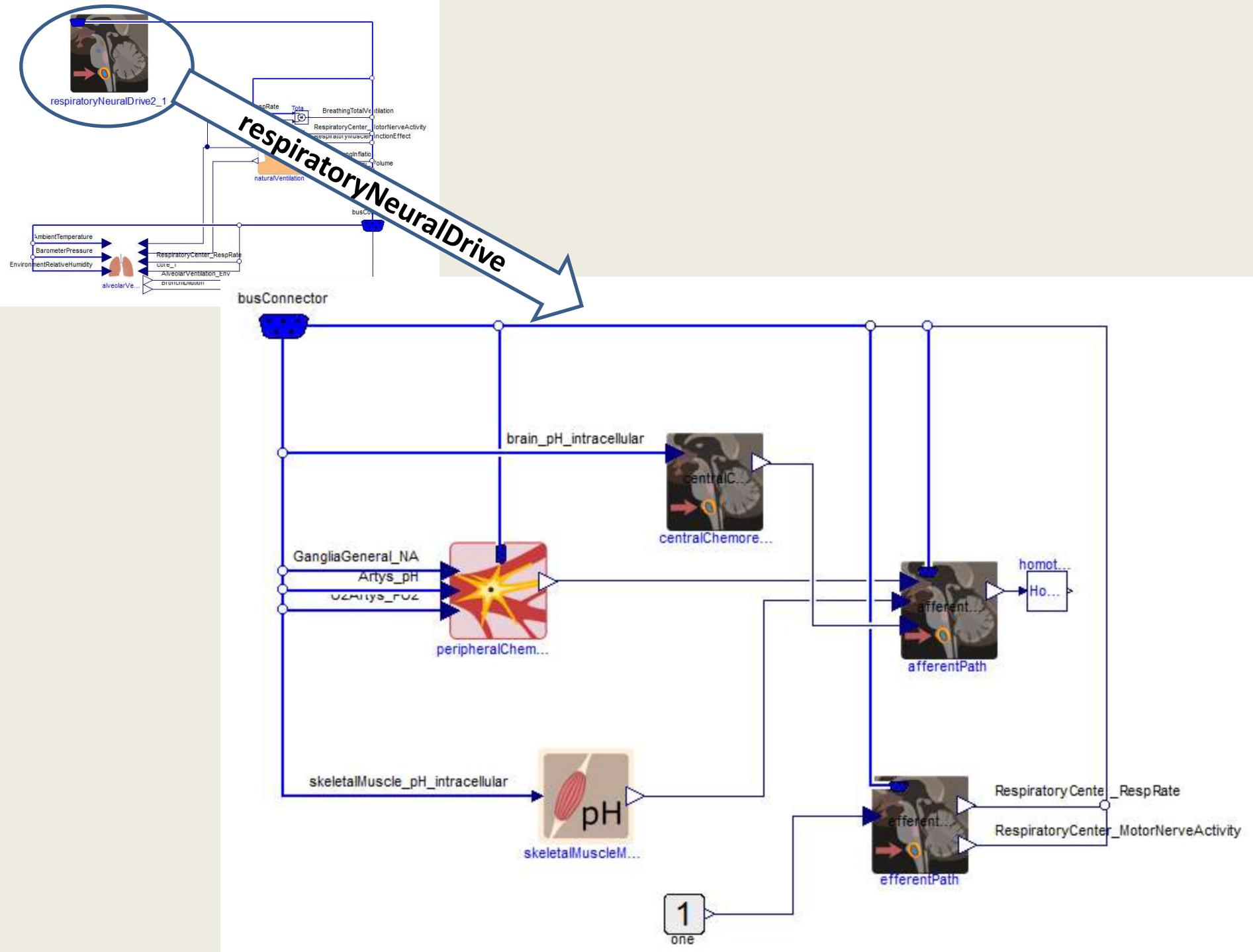


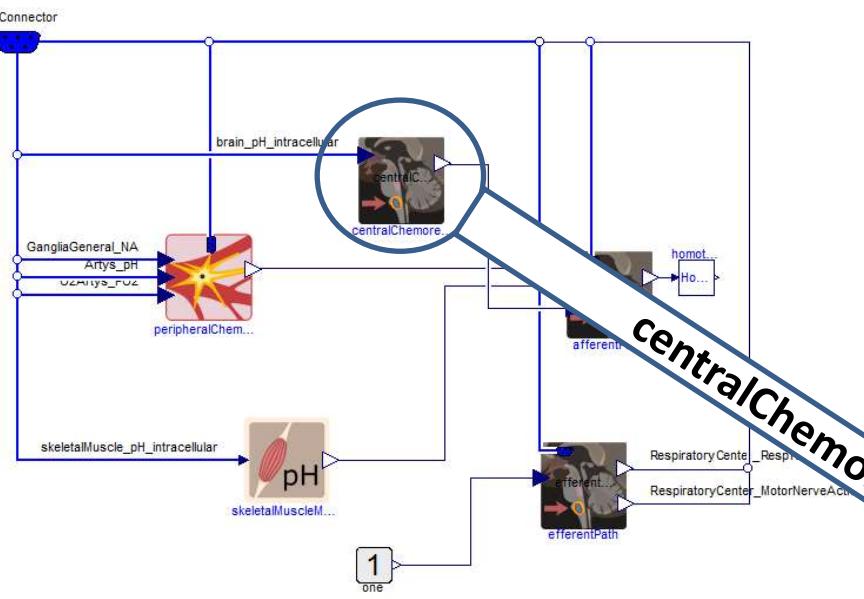
respiratoryNeuralDrive2_1



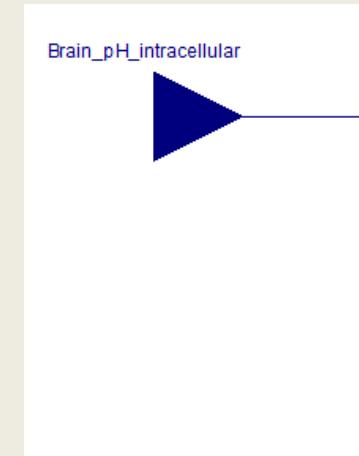
alveolarVentilation

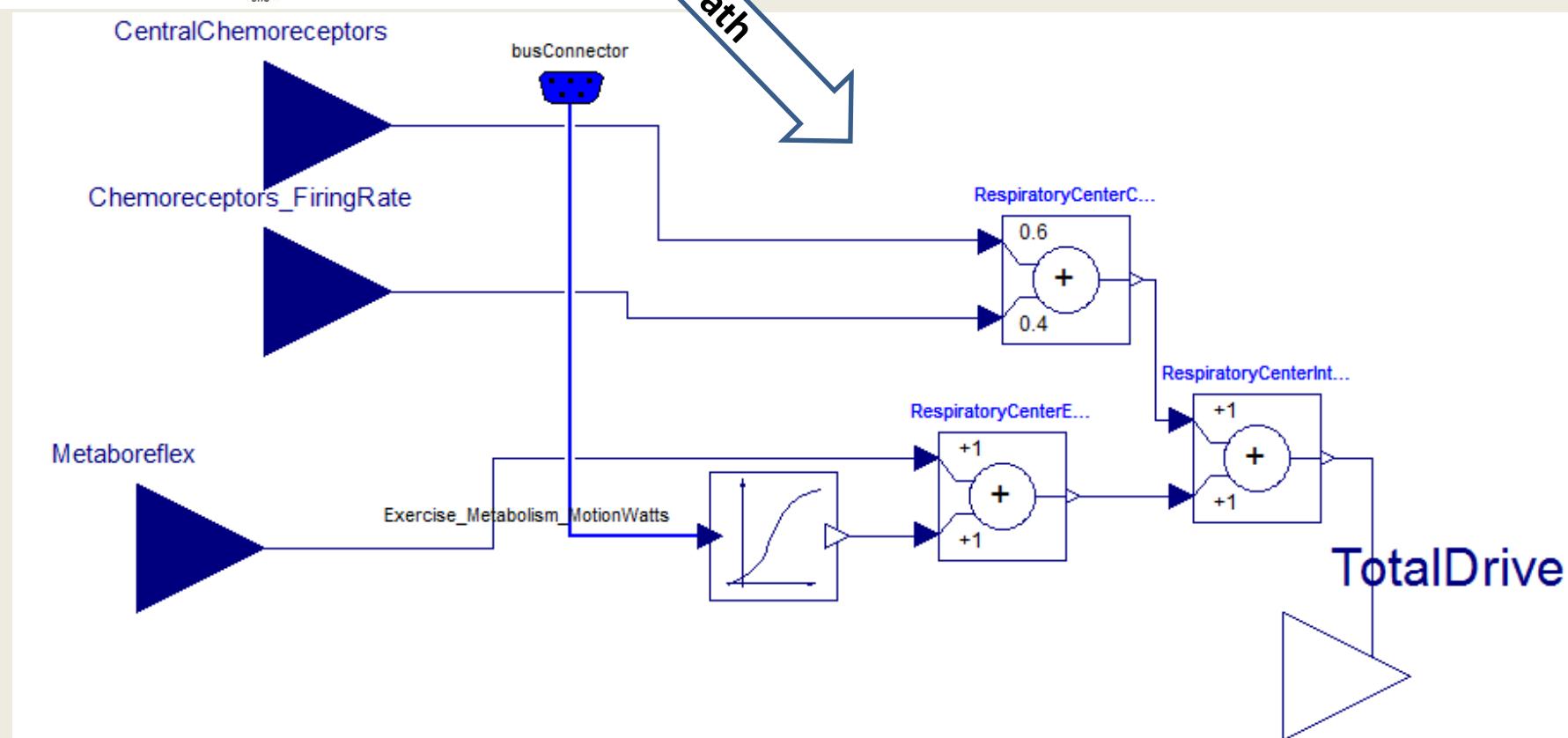
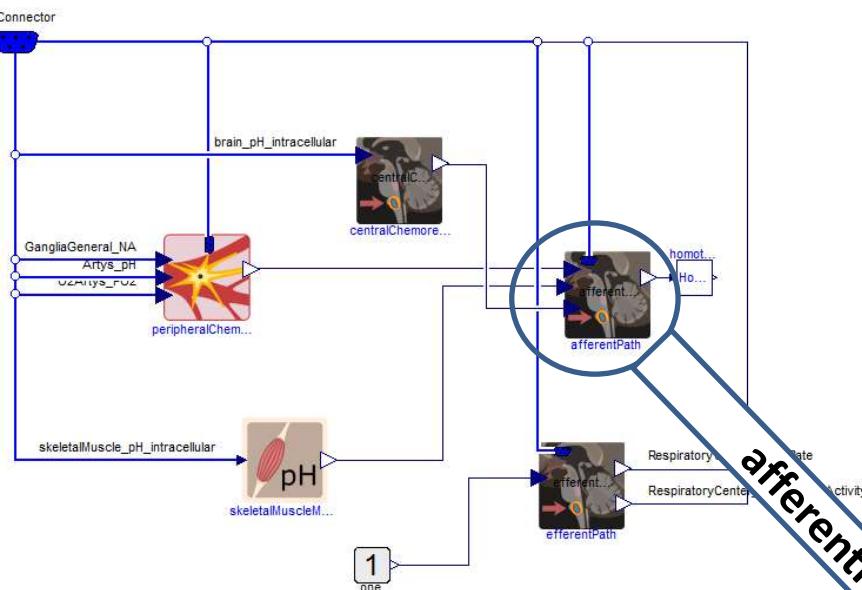


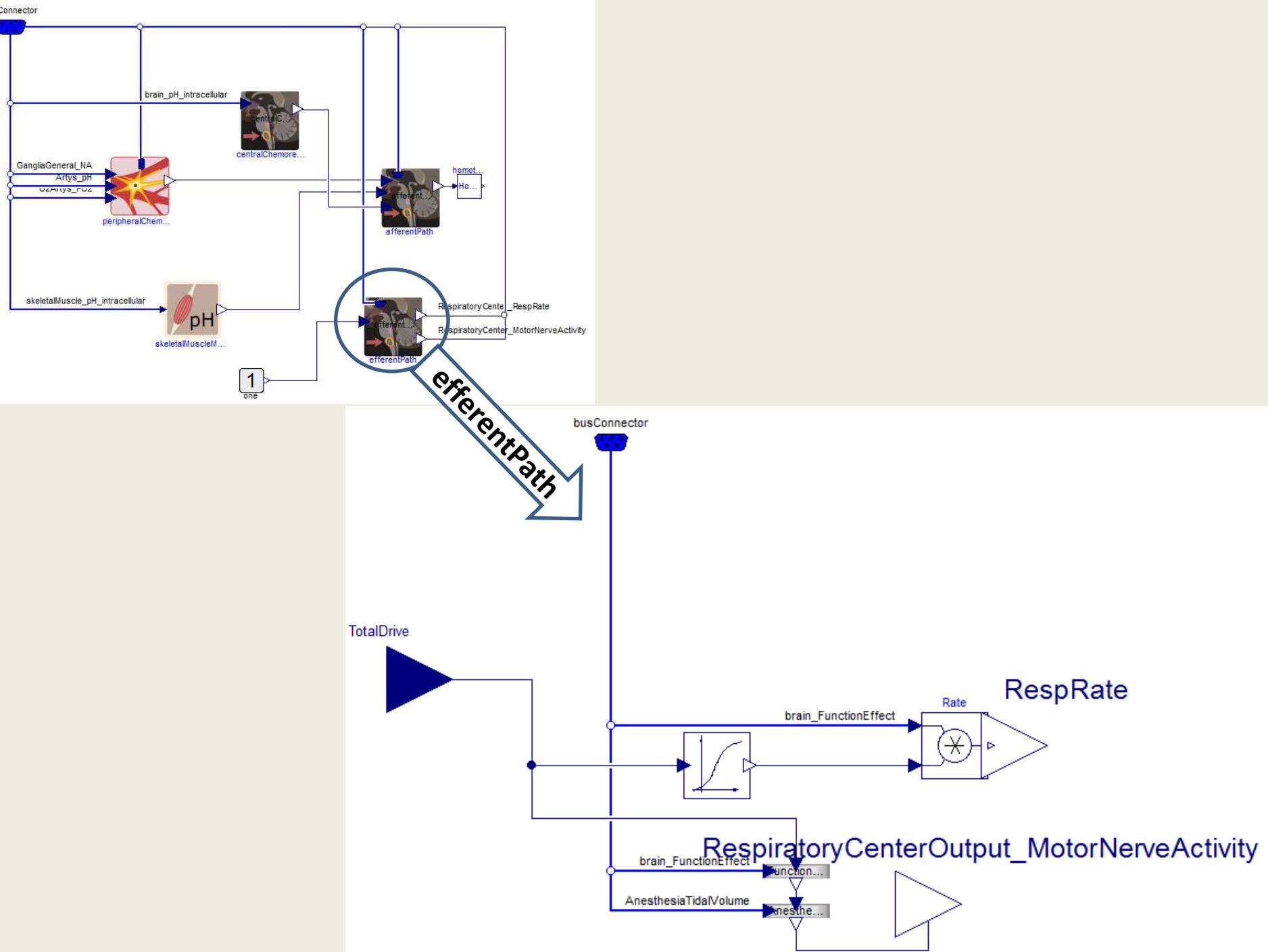


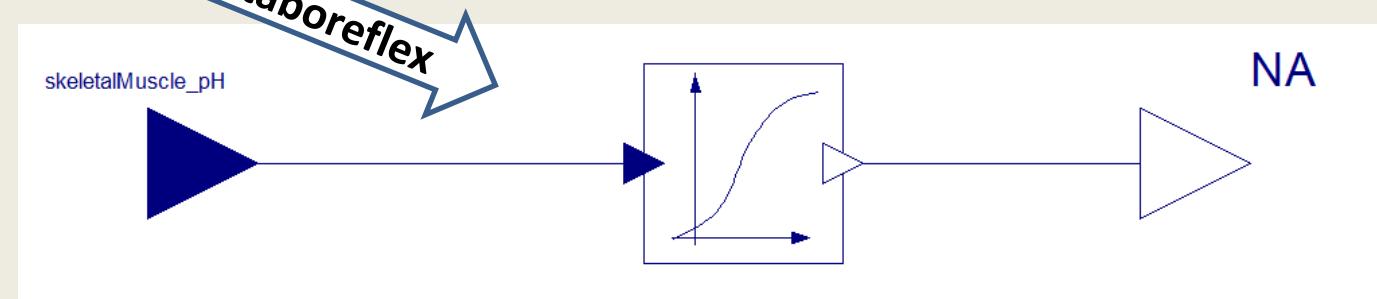
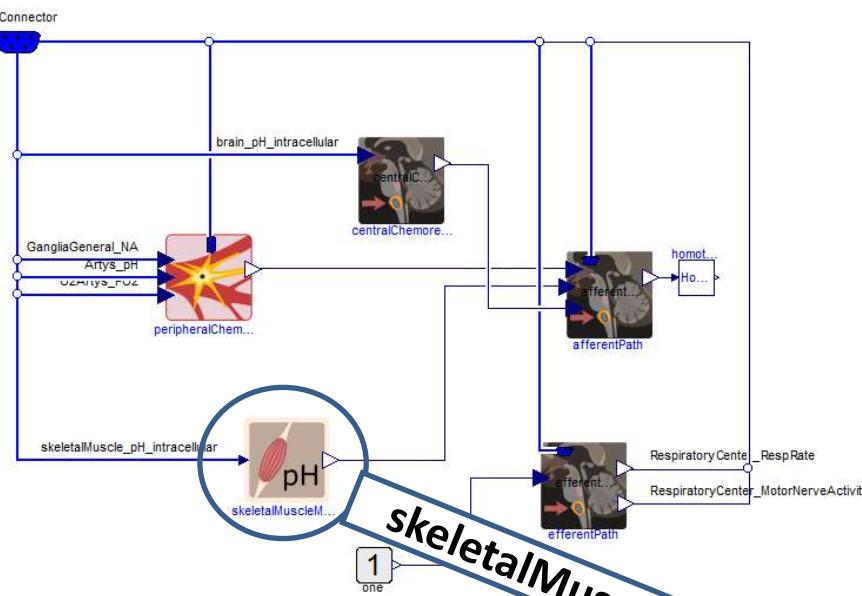


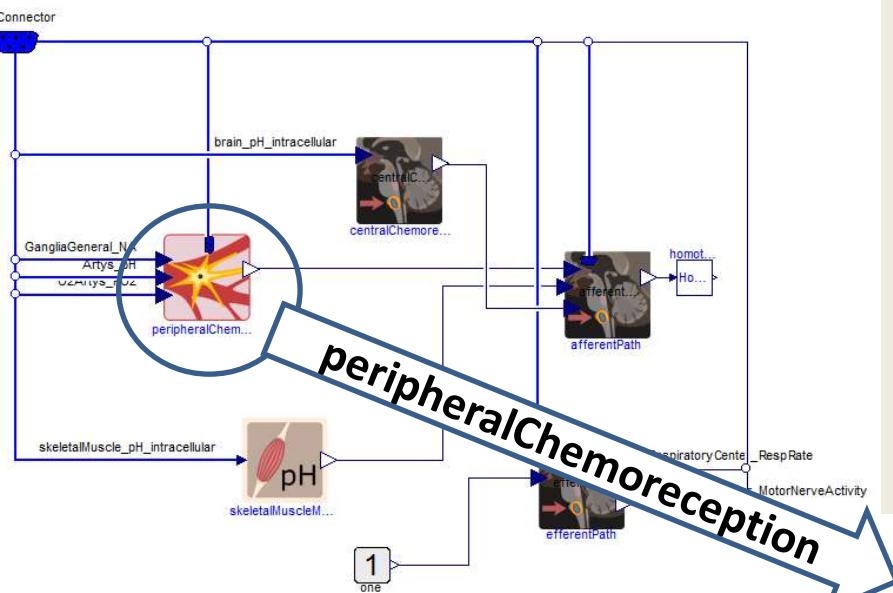
centralChemoreceptor



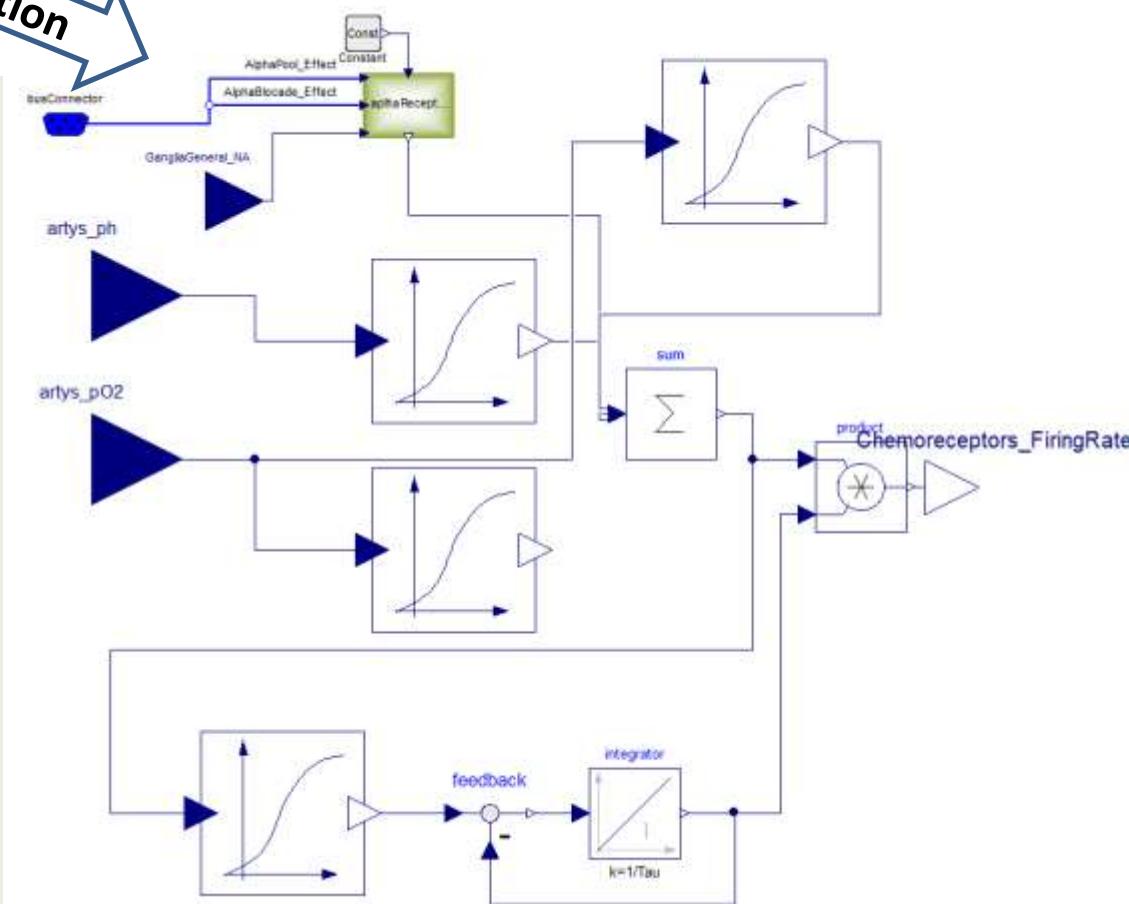


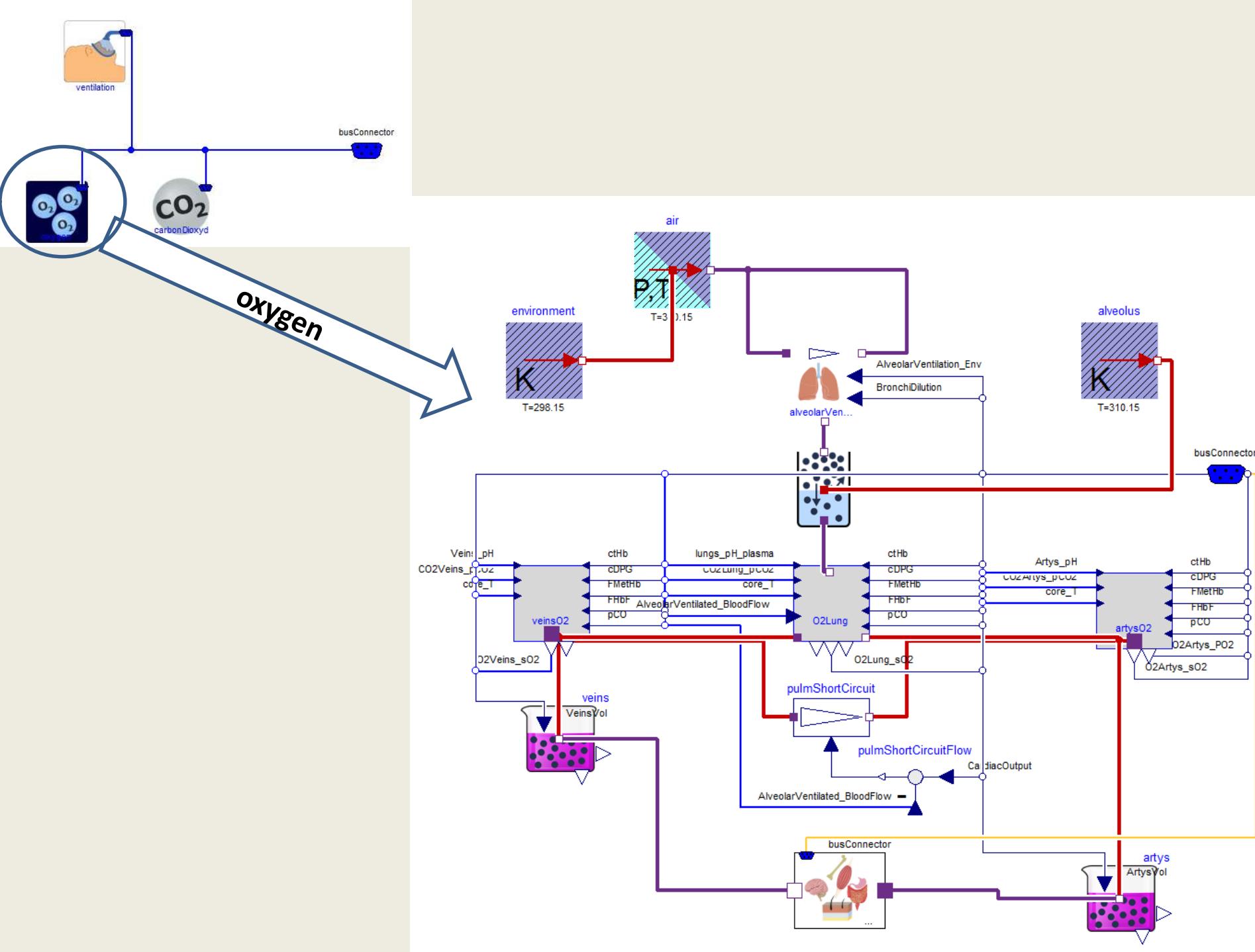


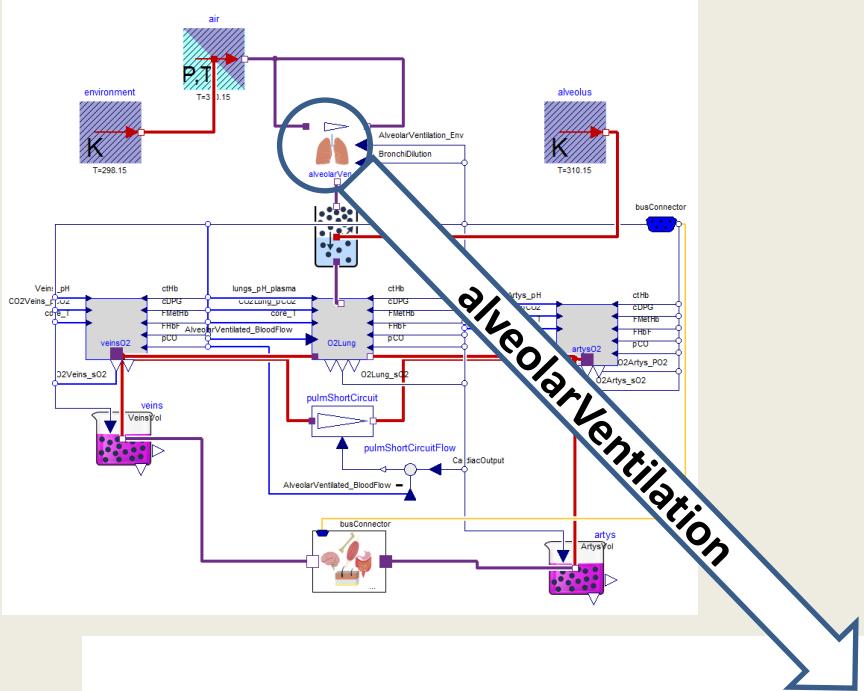




peripheralChemoreception

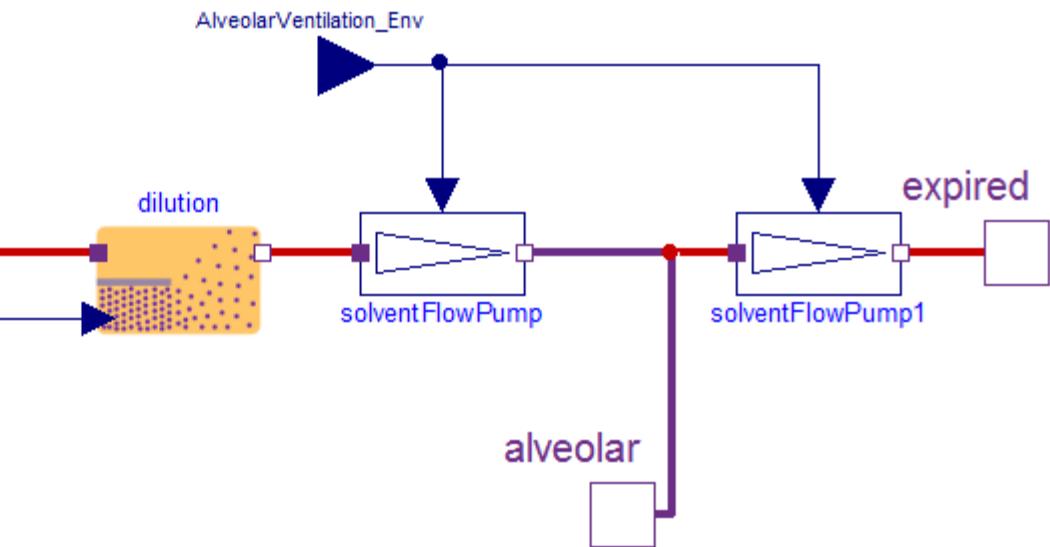


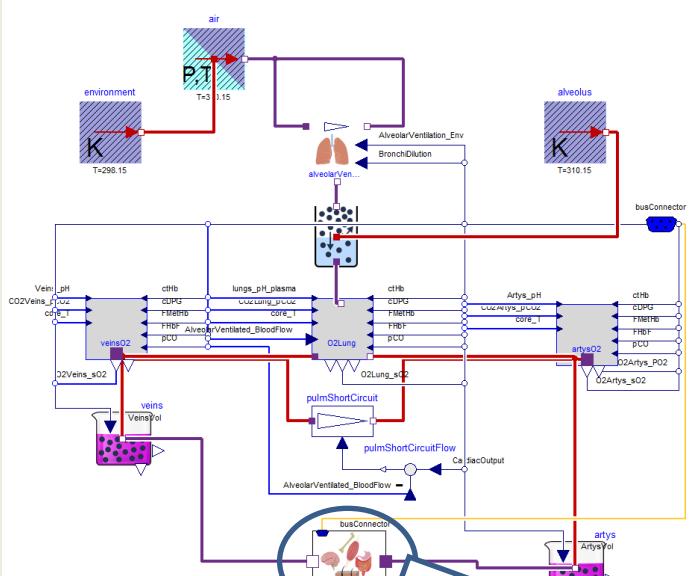




alveolarVentilation

inspired

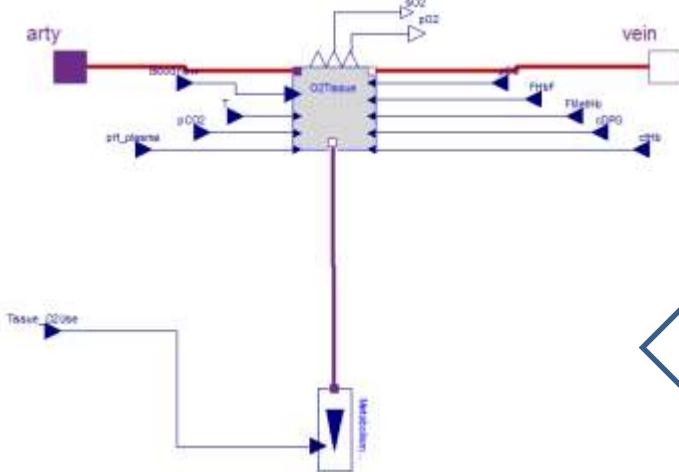




tissuesO2

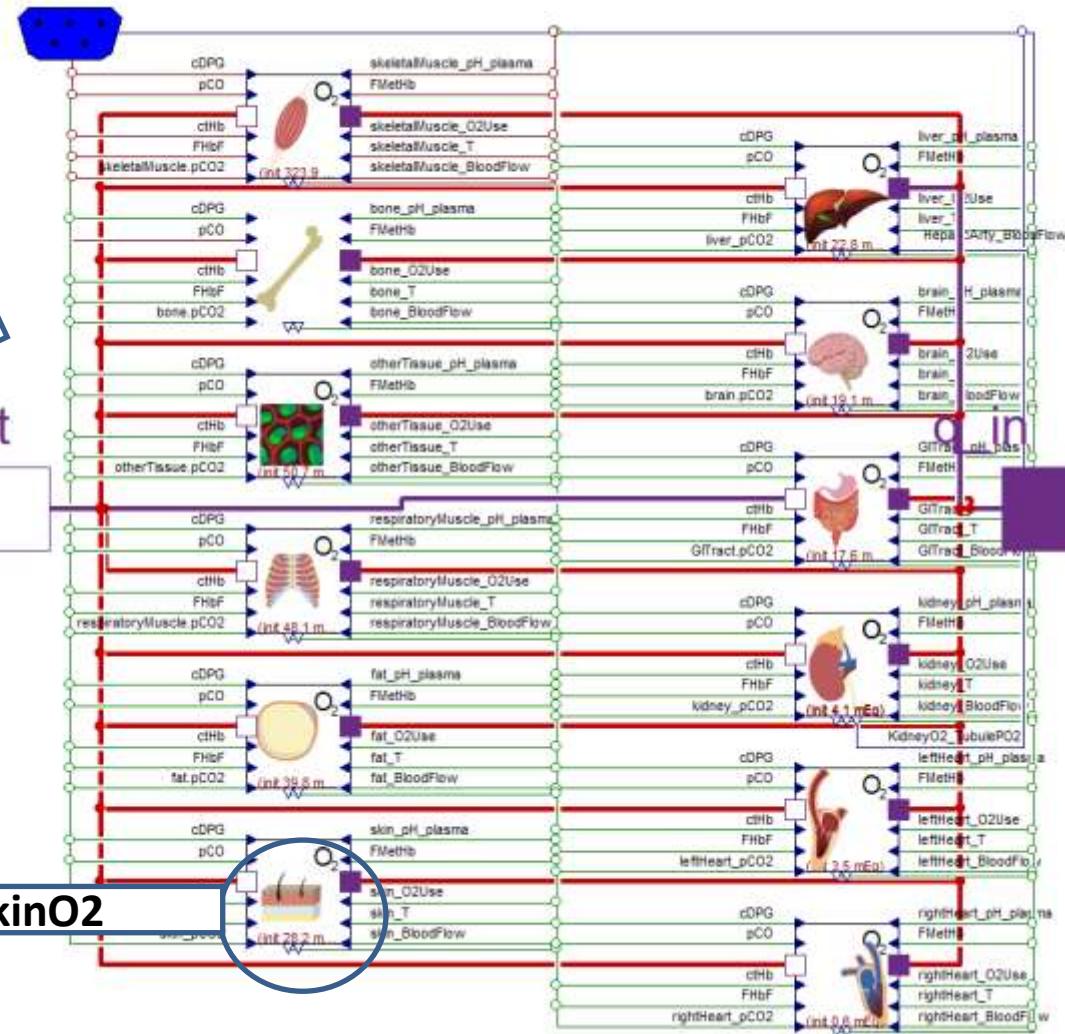
q_out

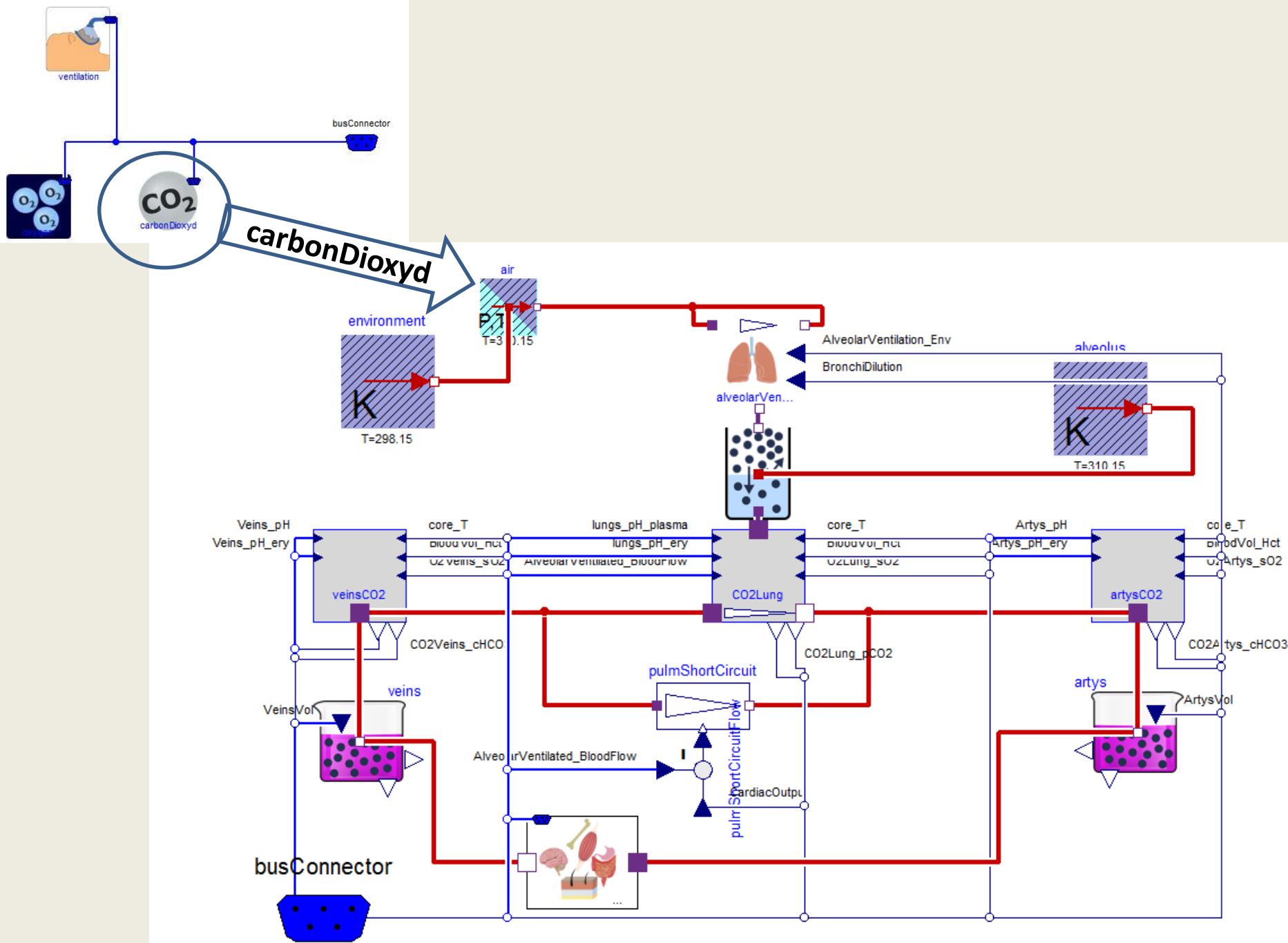
The instances of the same class with different parameters

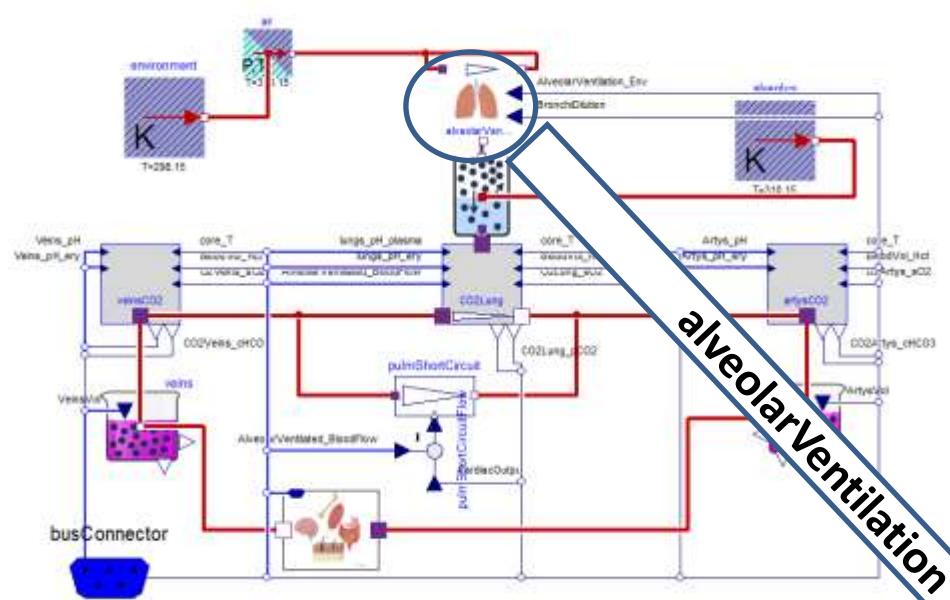


skinO2

busConnector







alveolarVentilation

BronchiDilution

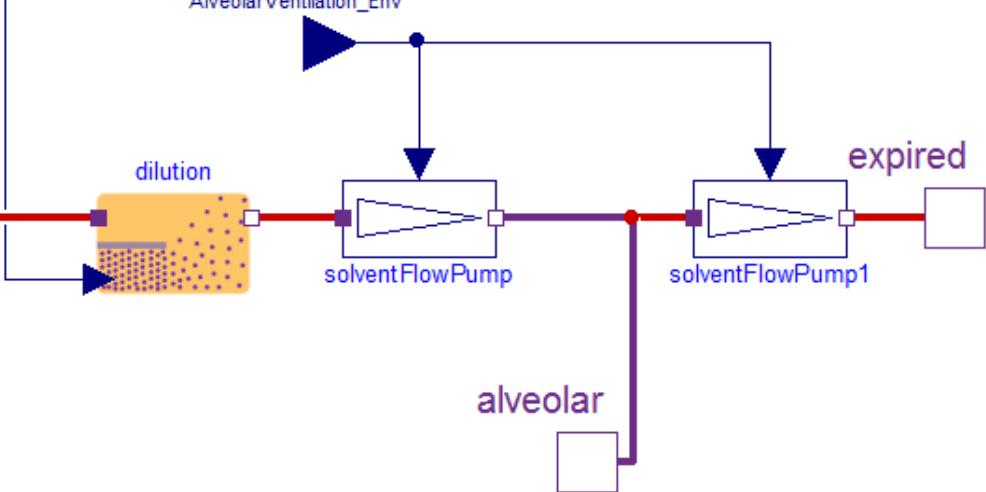
inspired

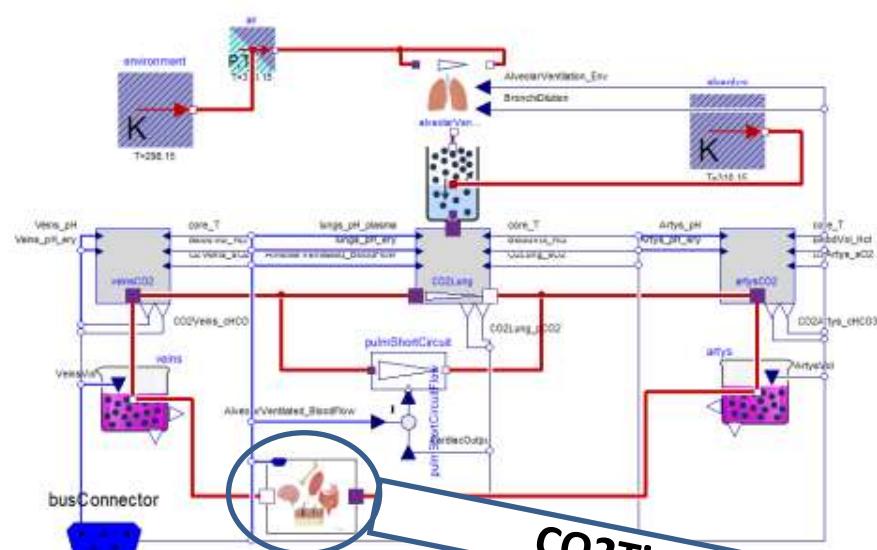
AlveolarVentilation_Env

dilution

expired

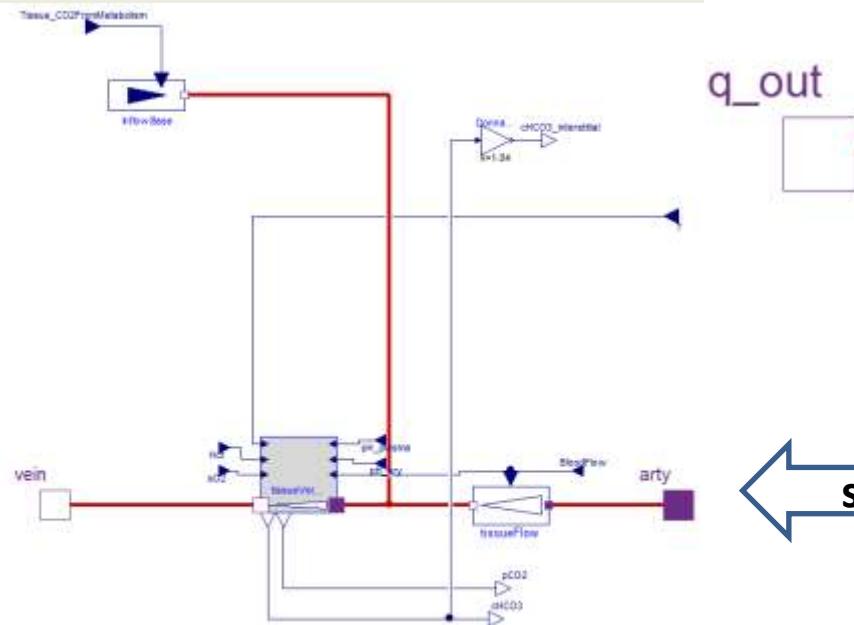
alveolar



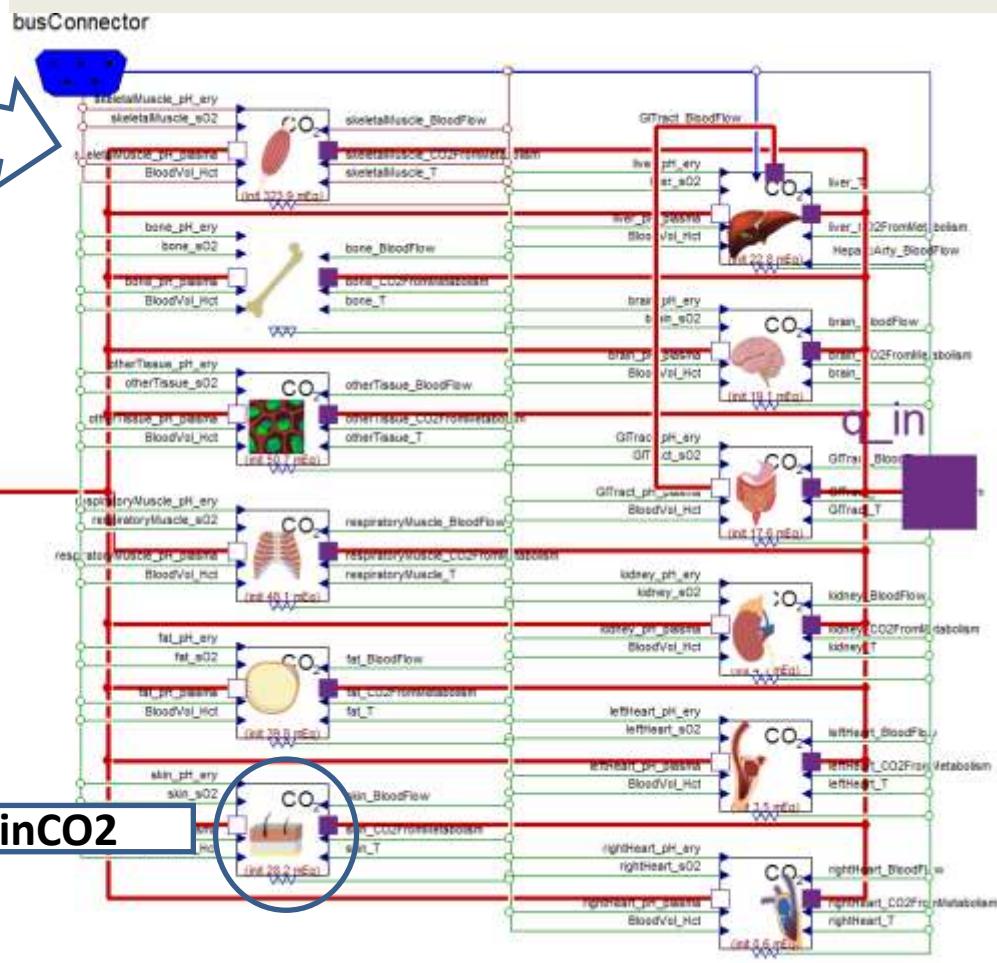


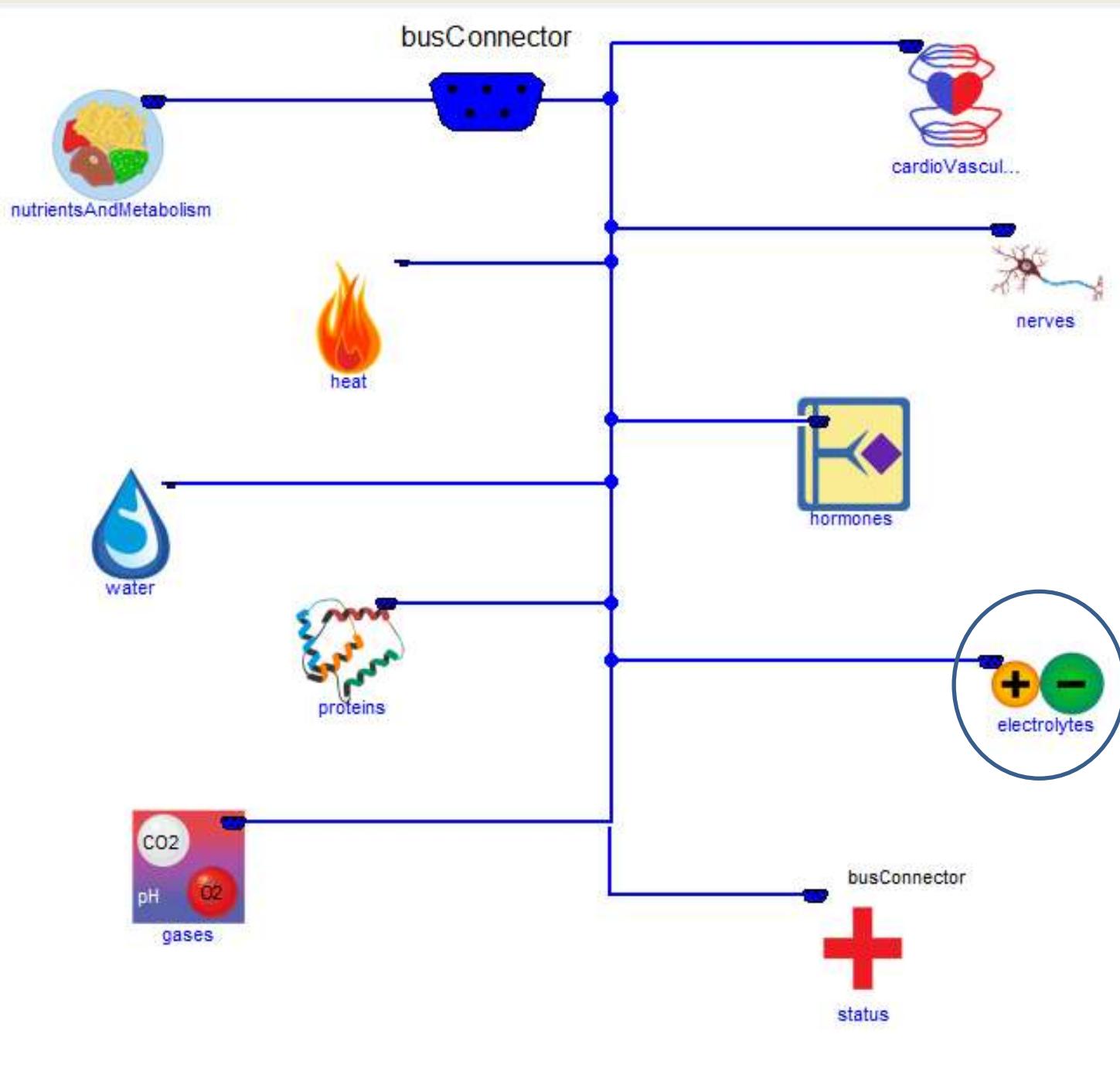
CO₂Tissues

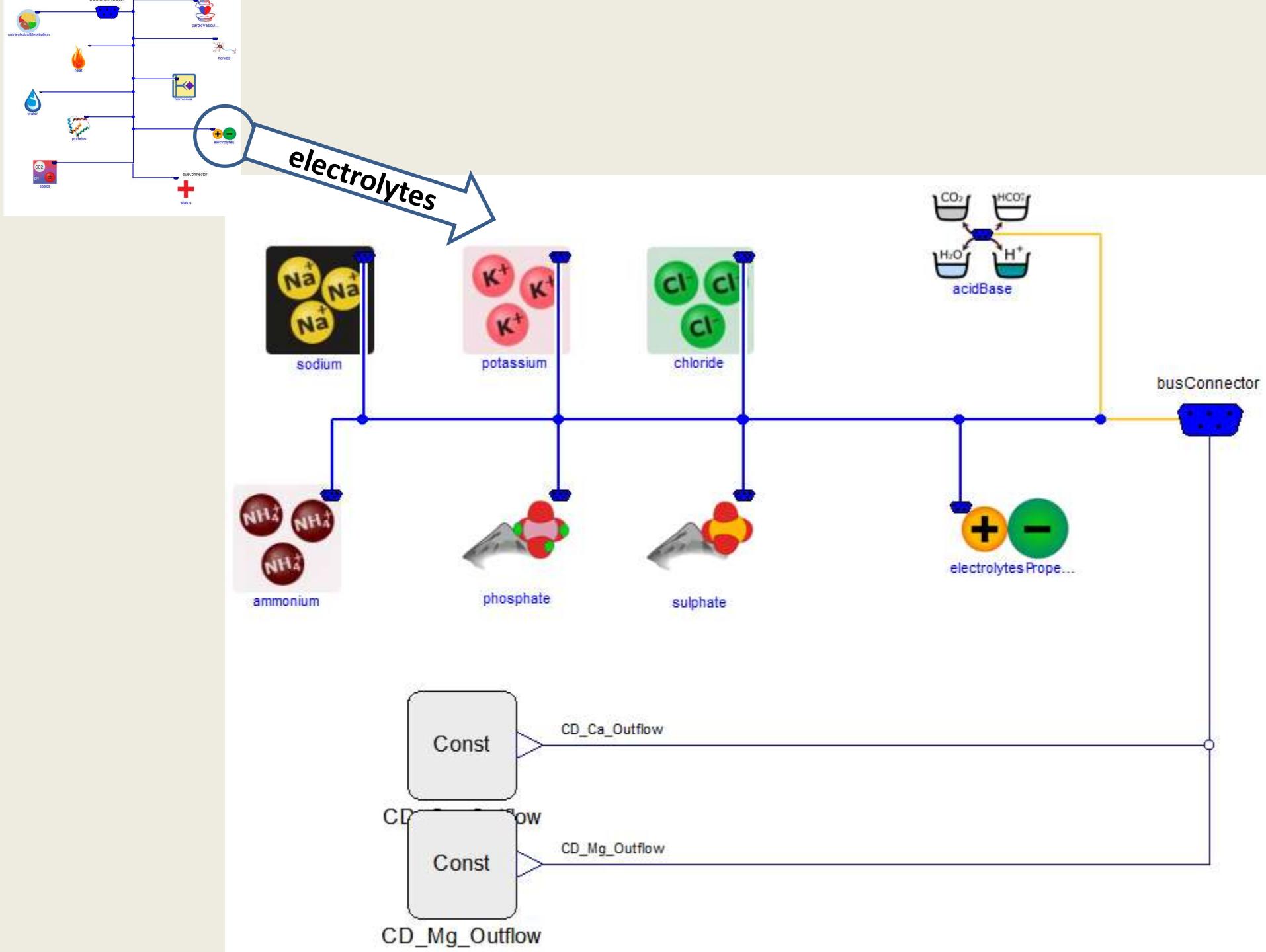
The instances of the same class with different parameters

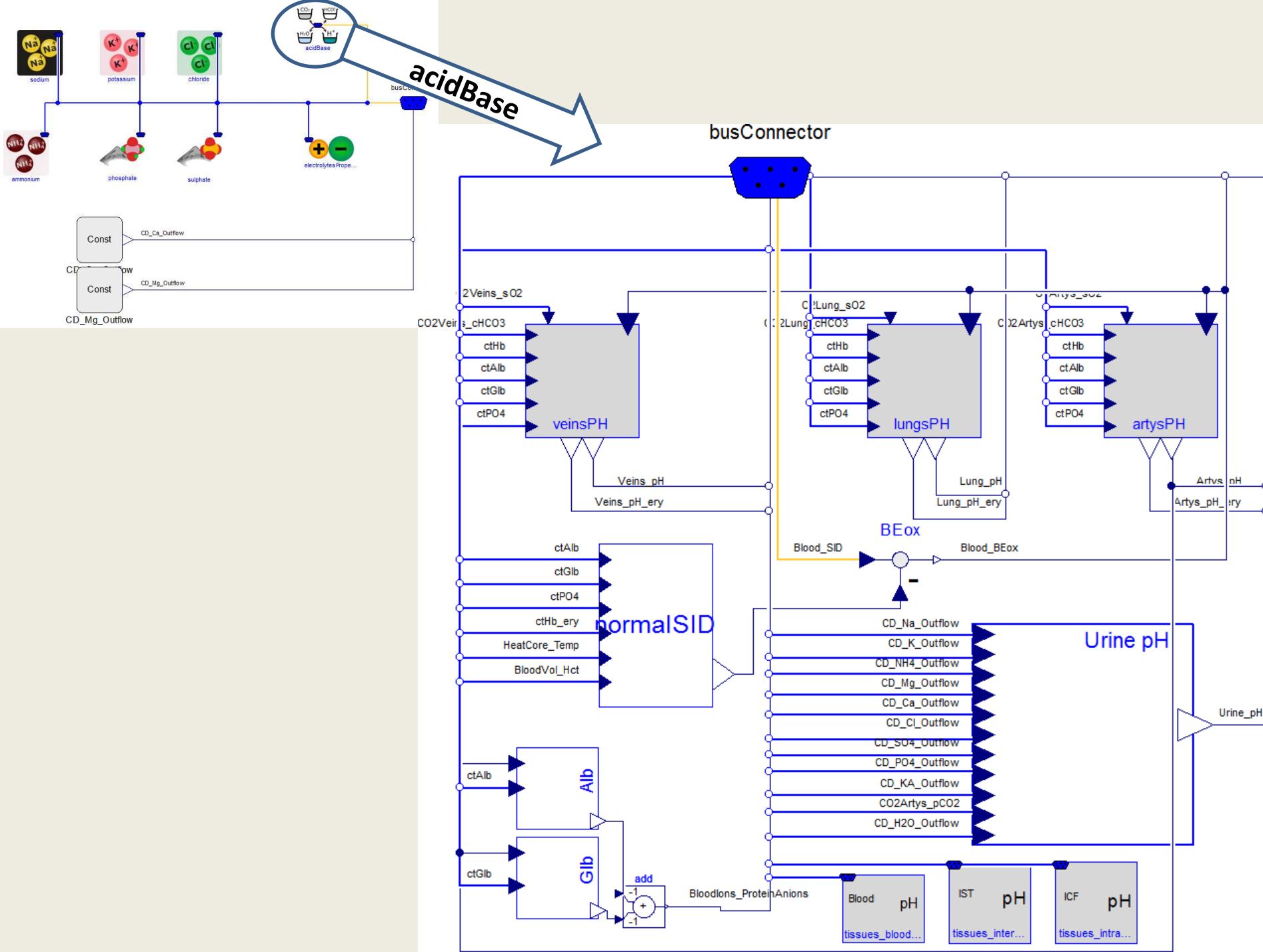


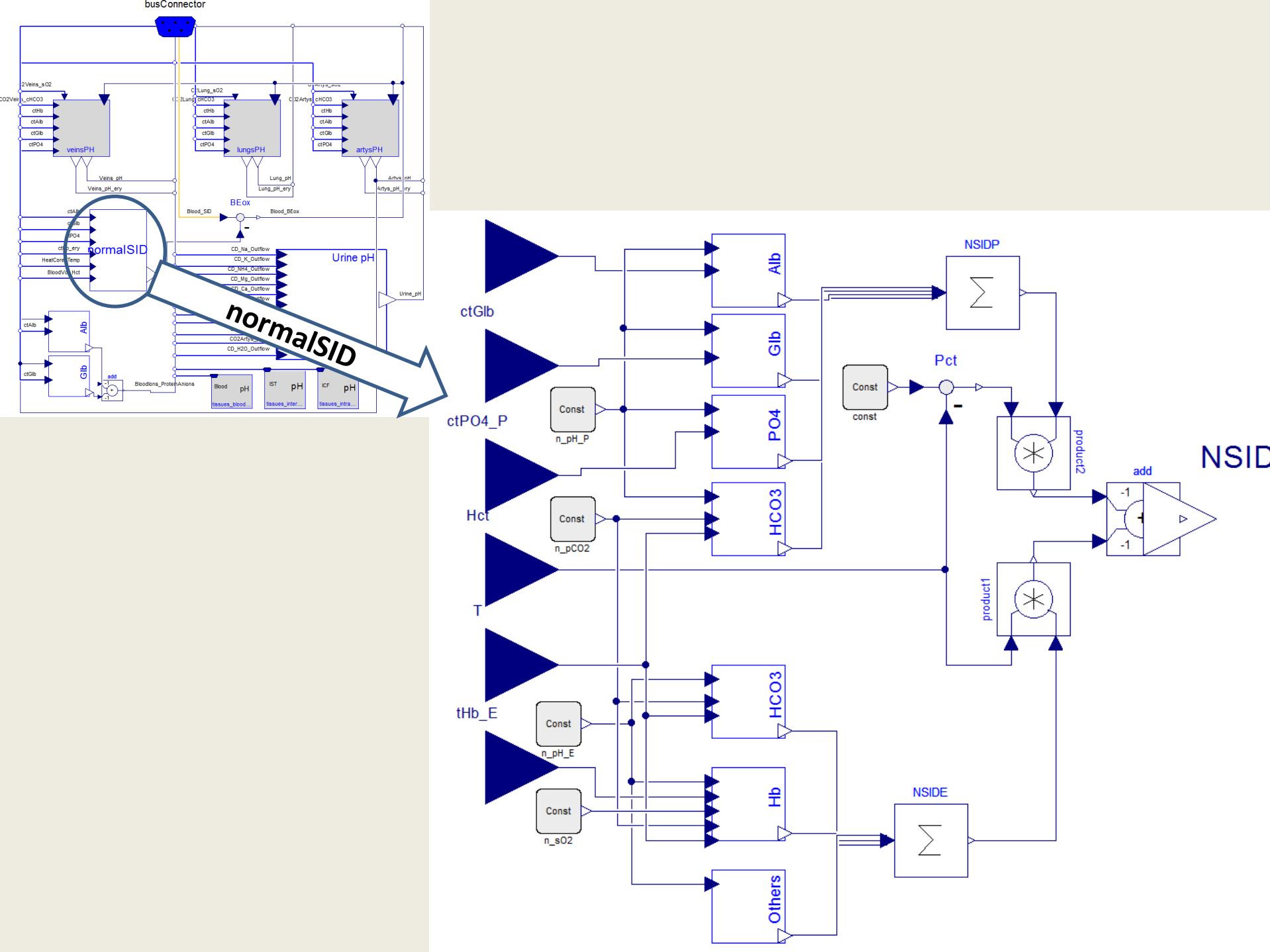
skinCO₂

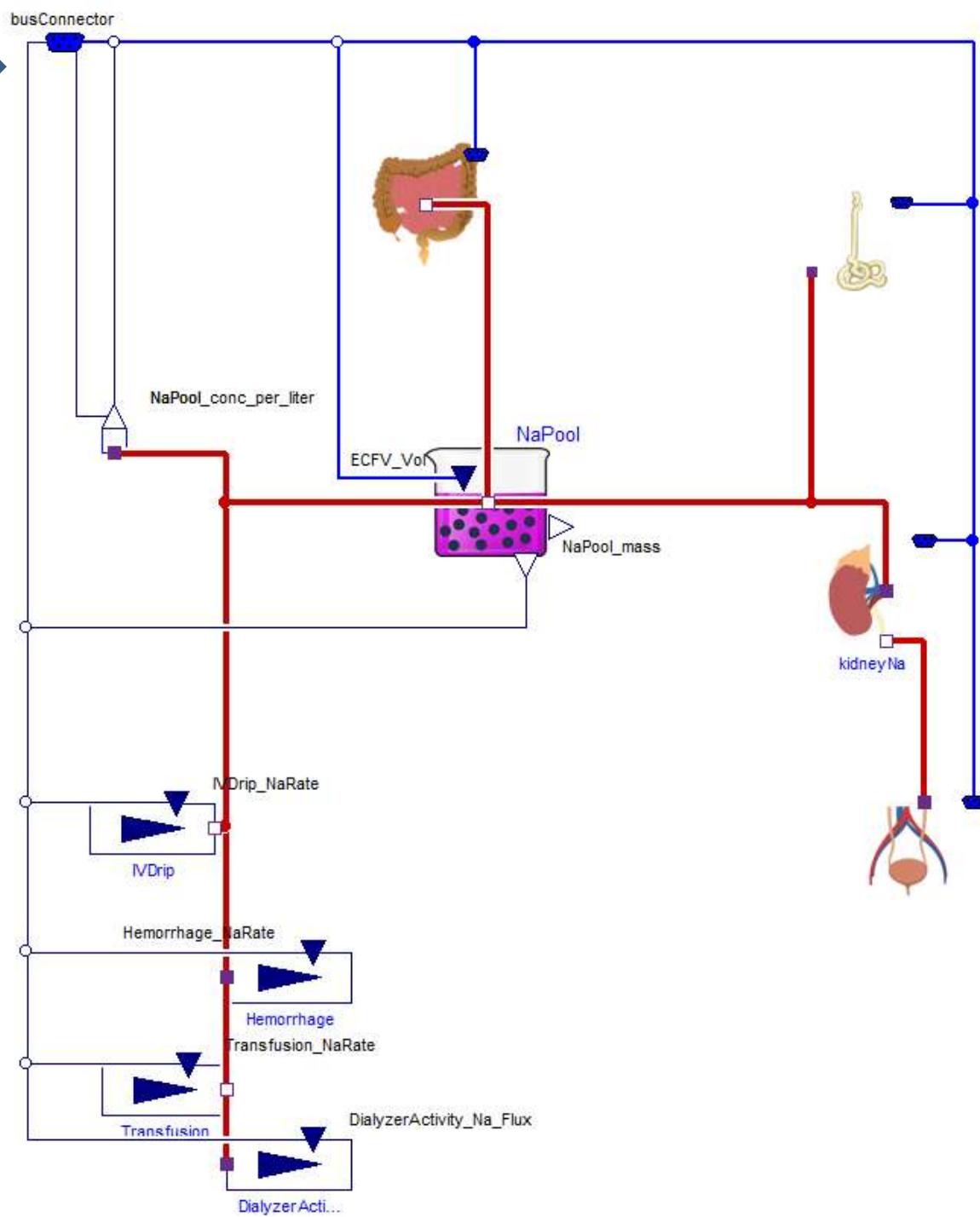
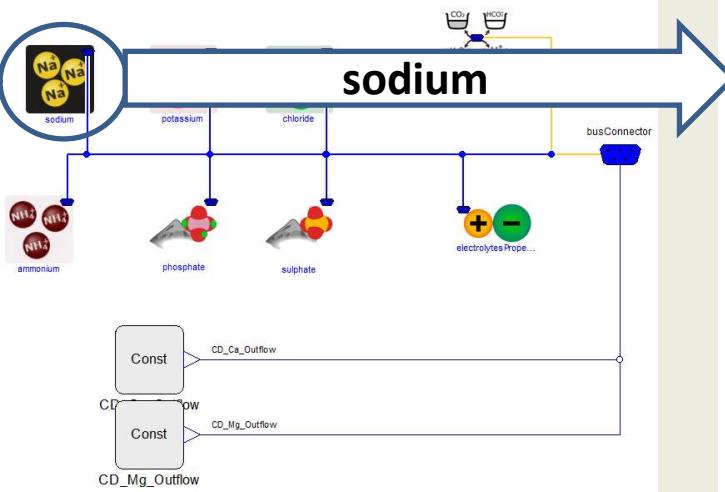


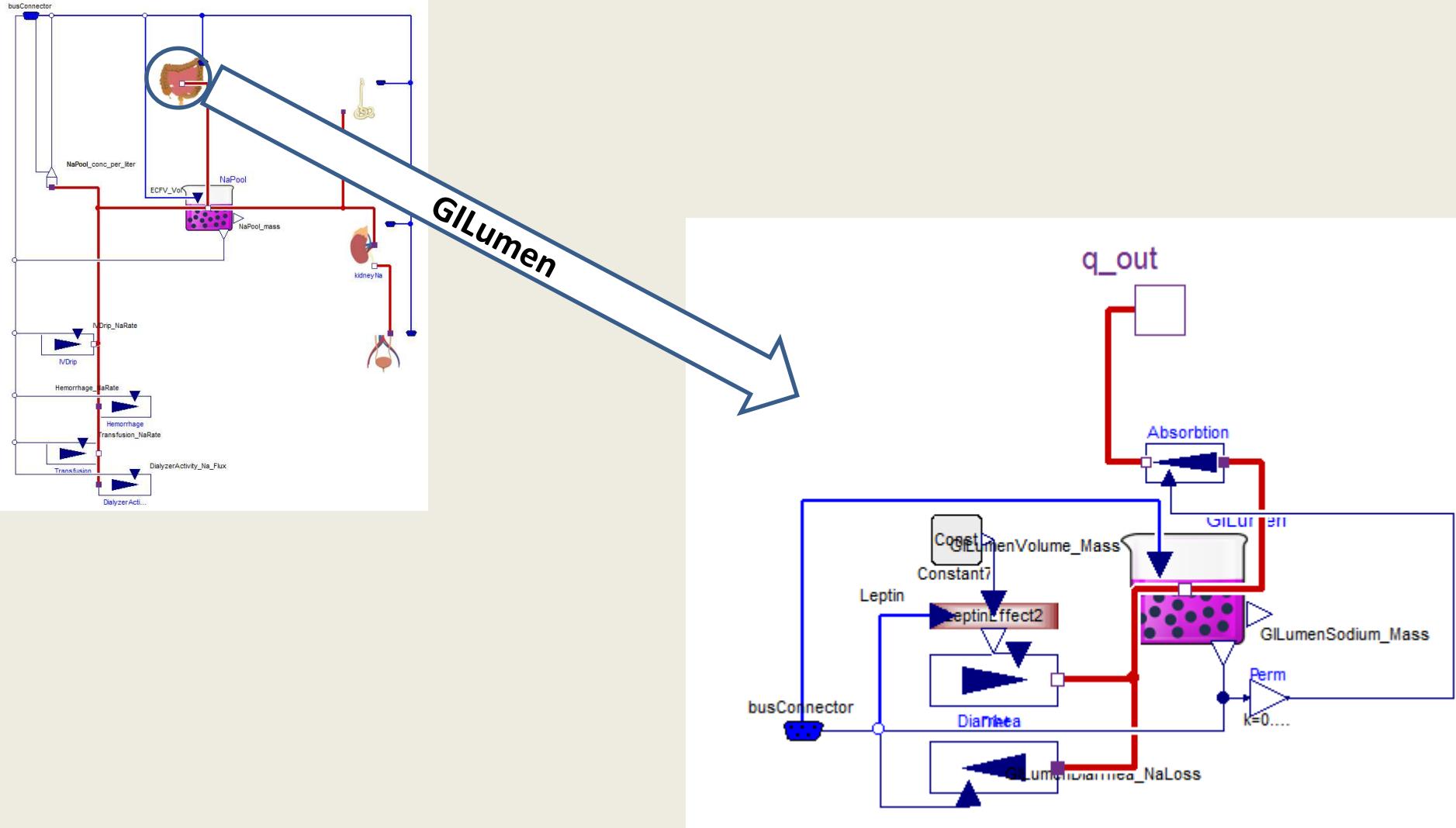


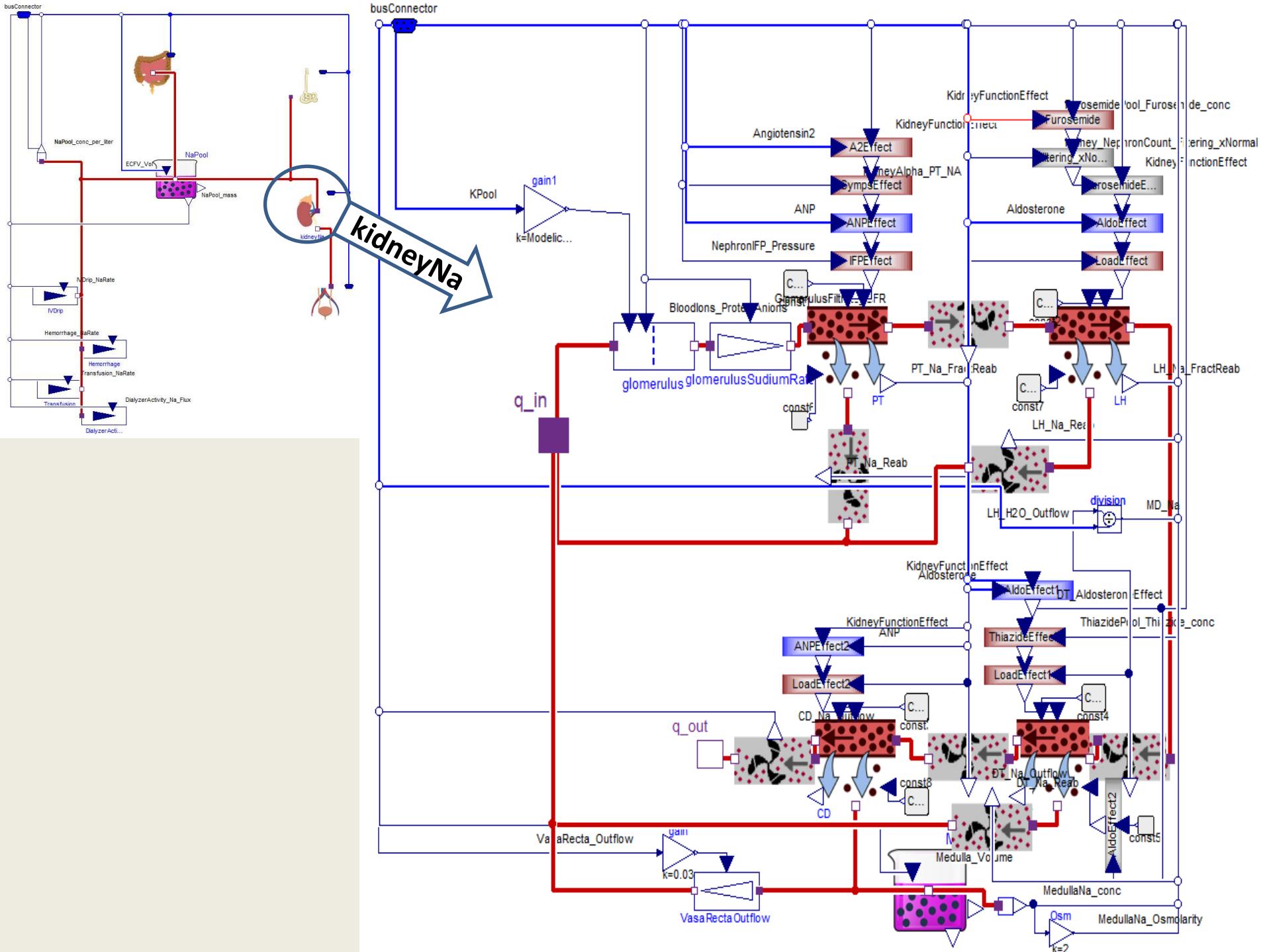


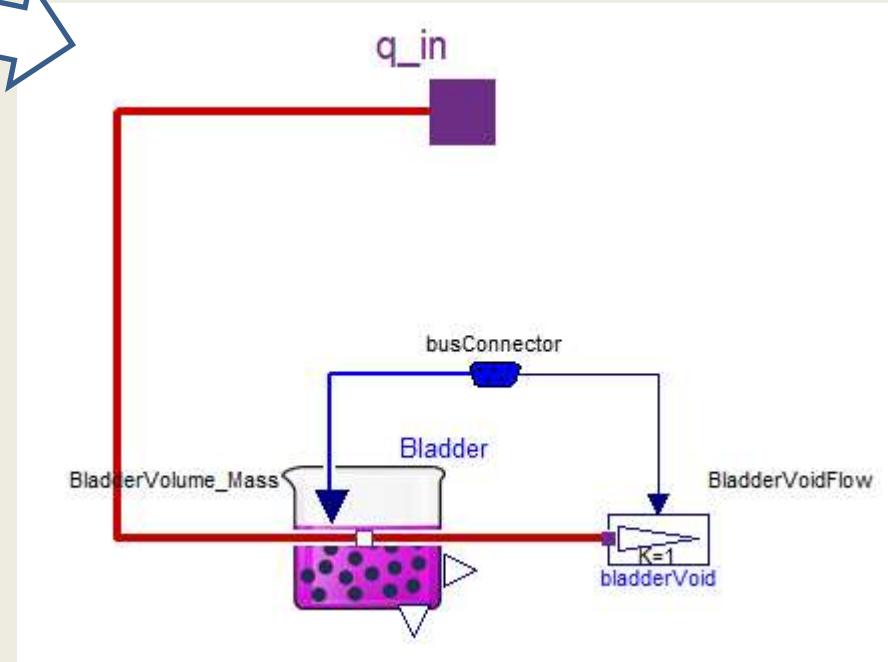
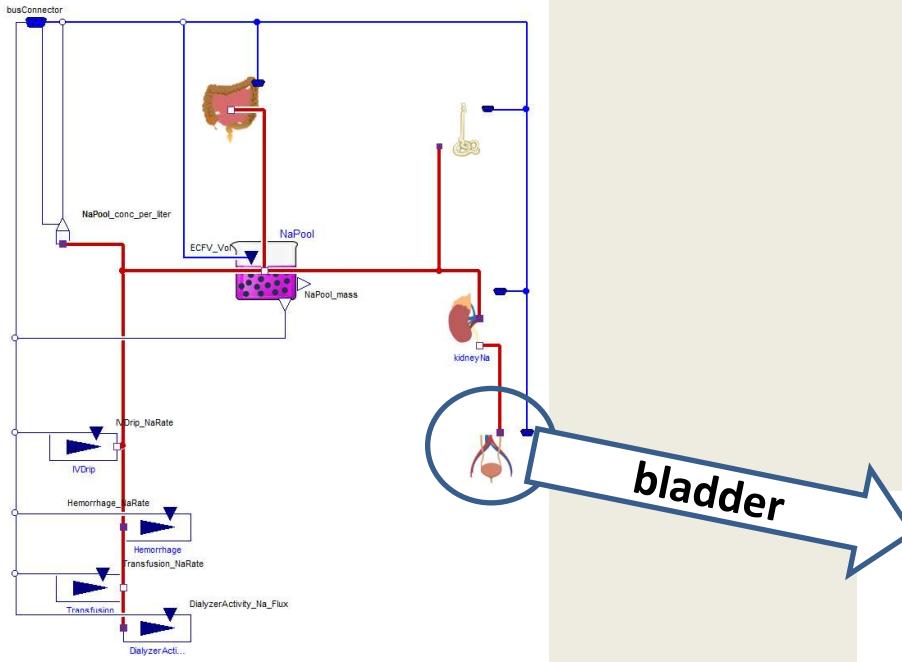


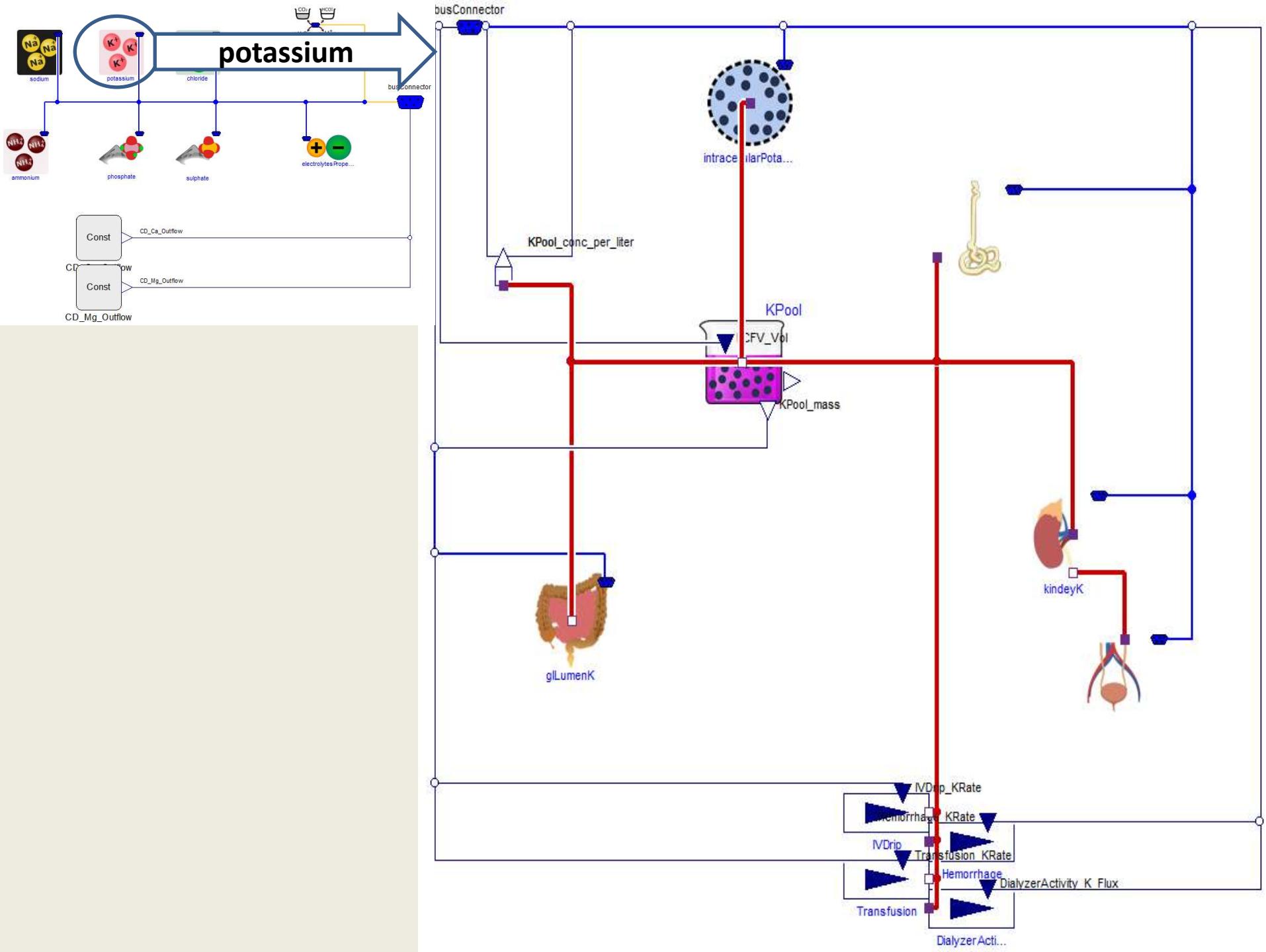


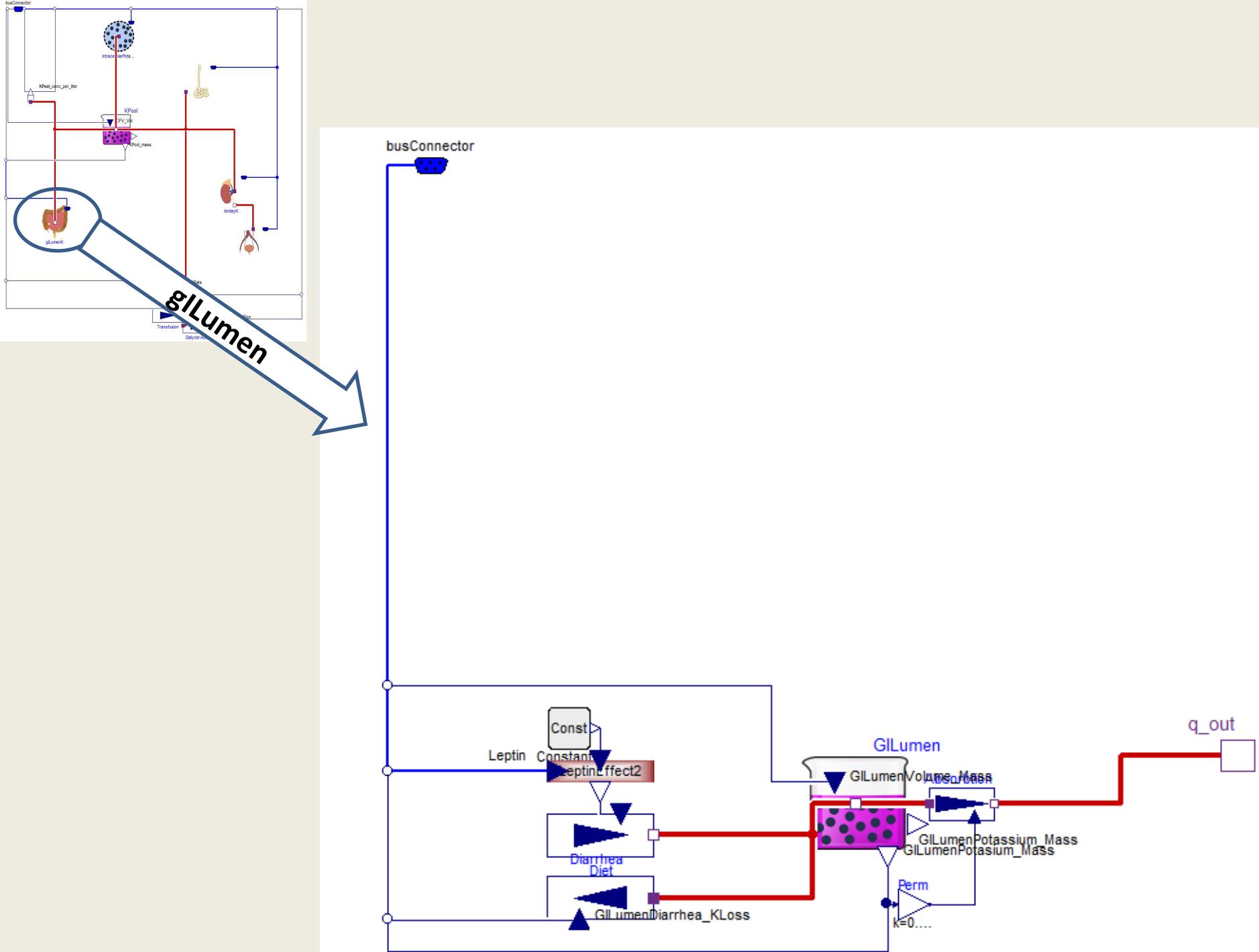


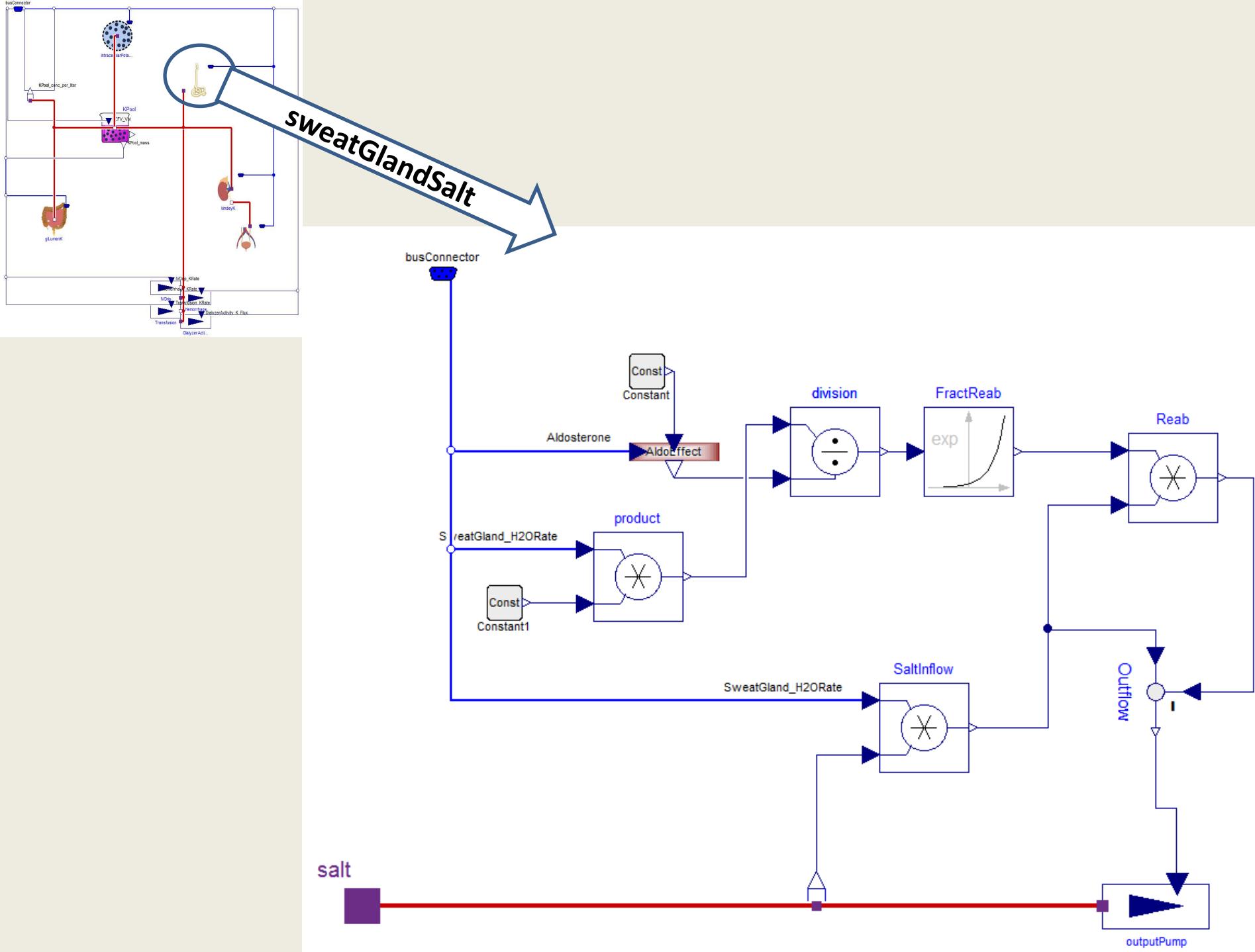


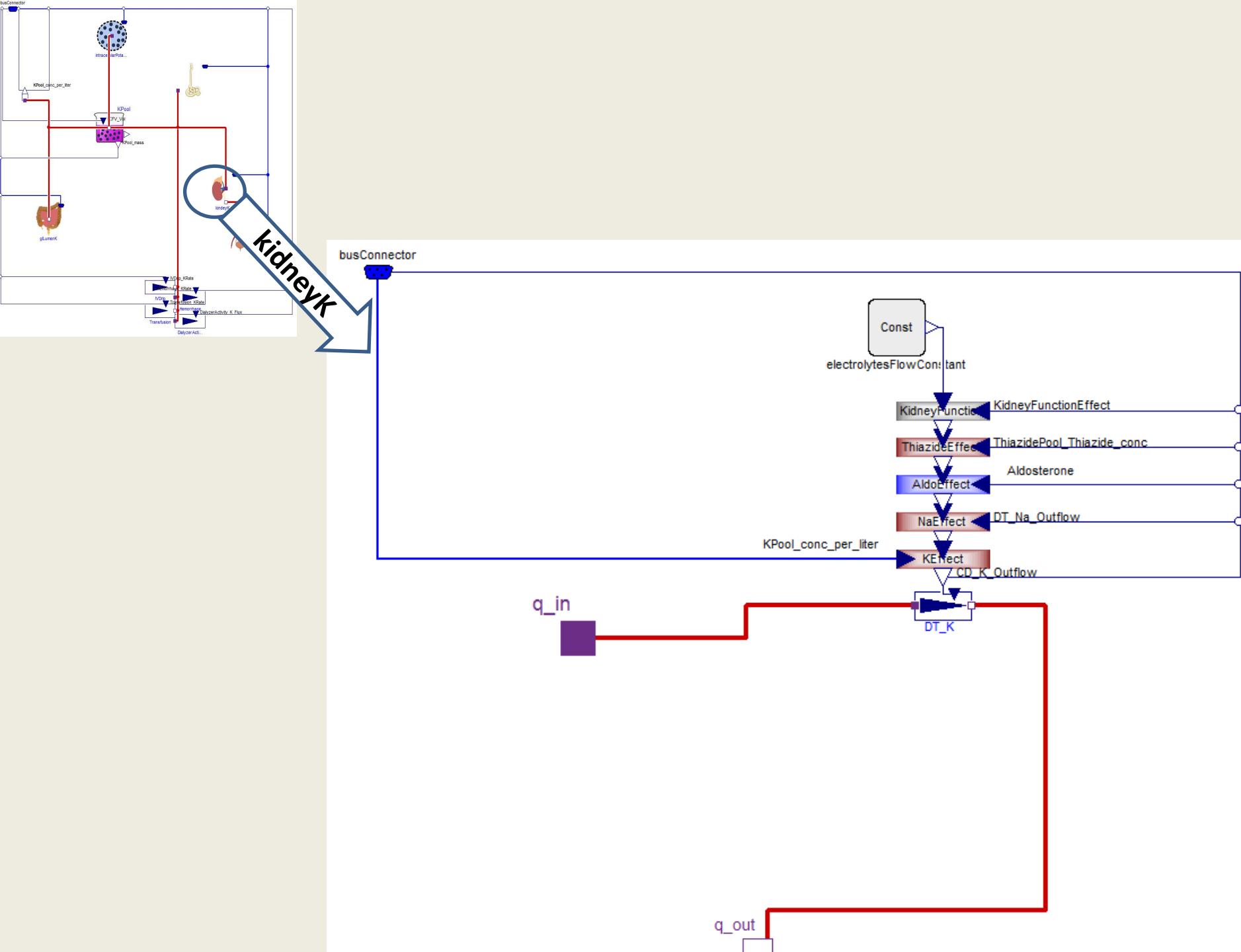


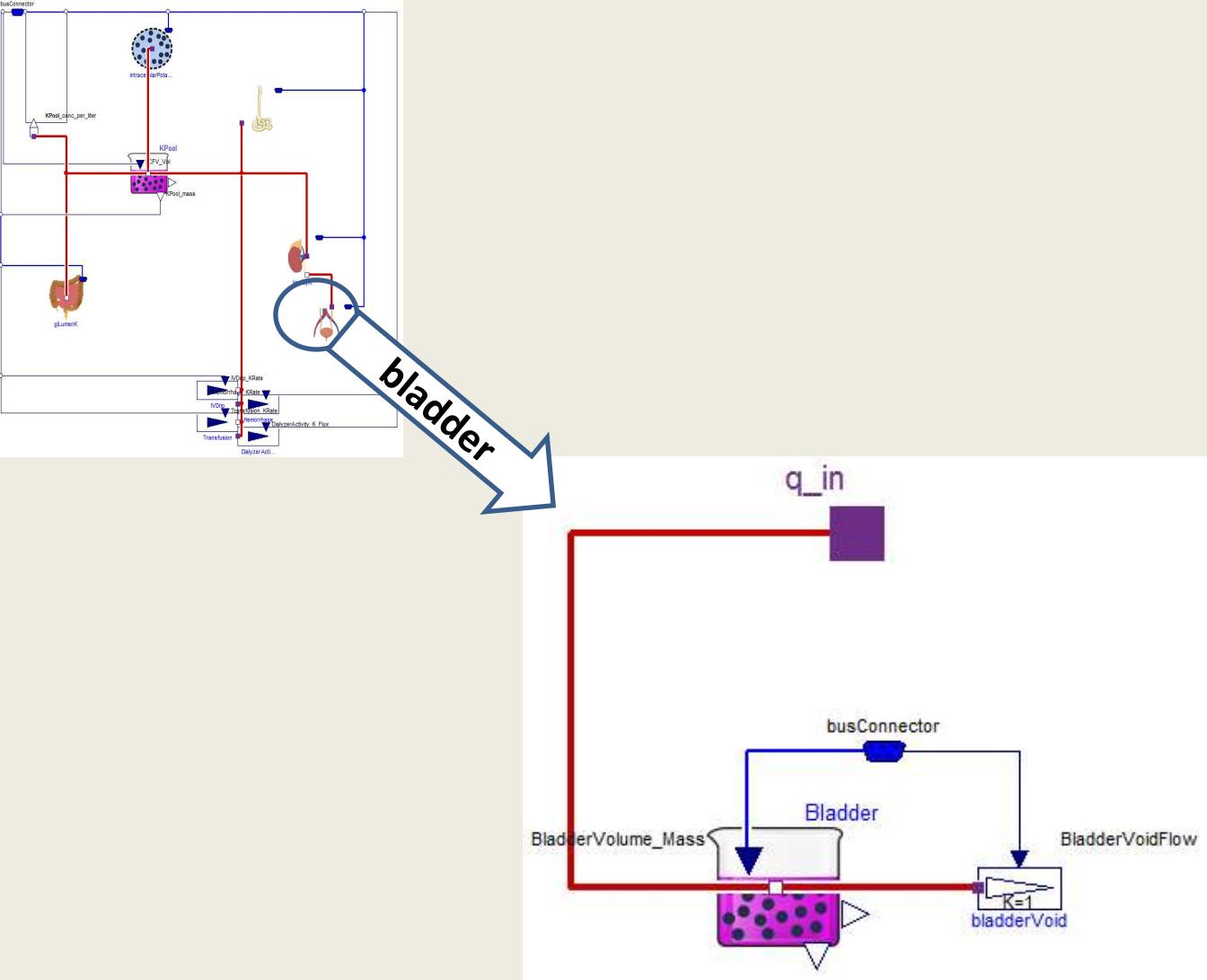


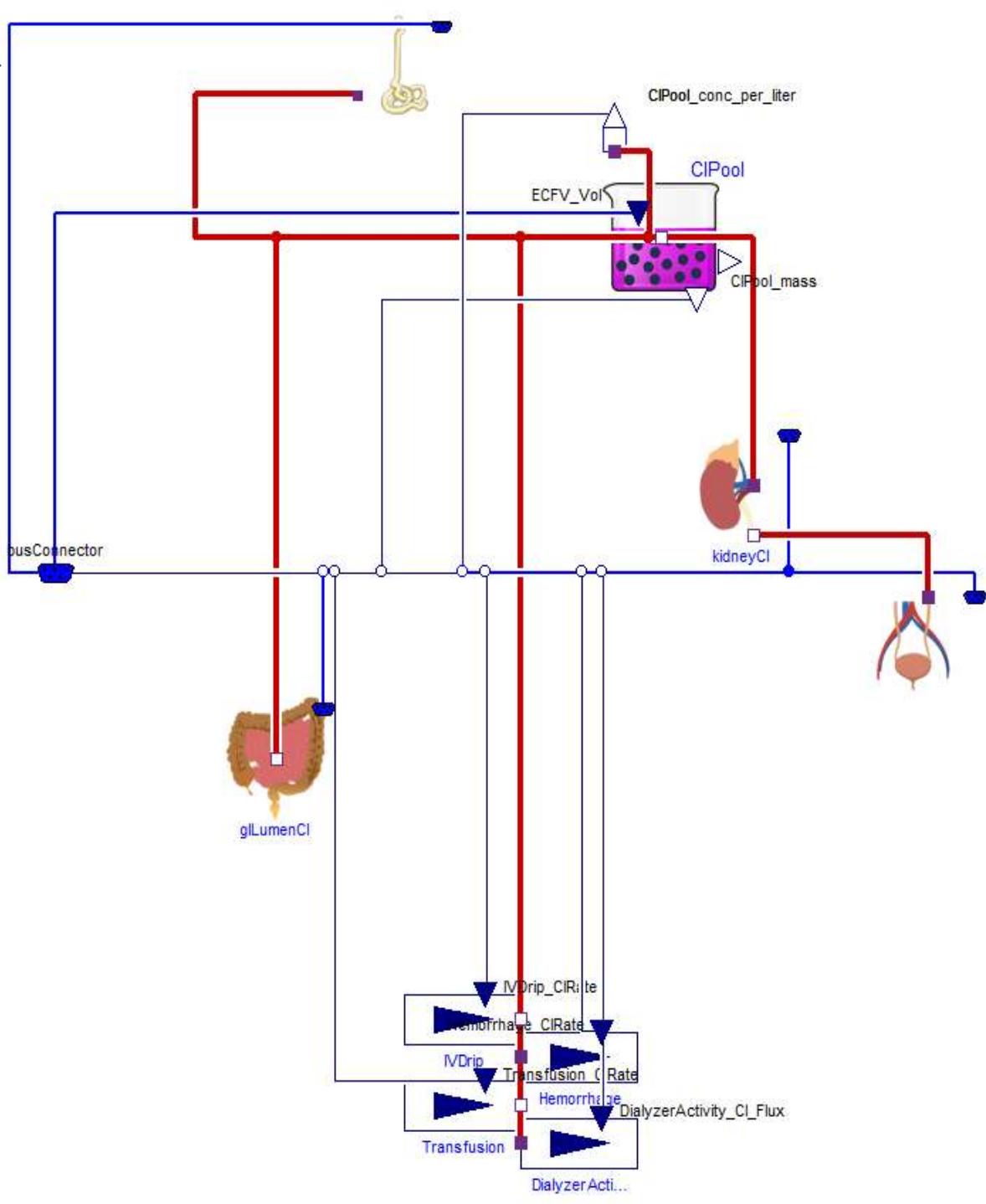
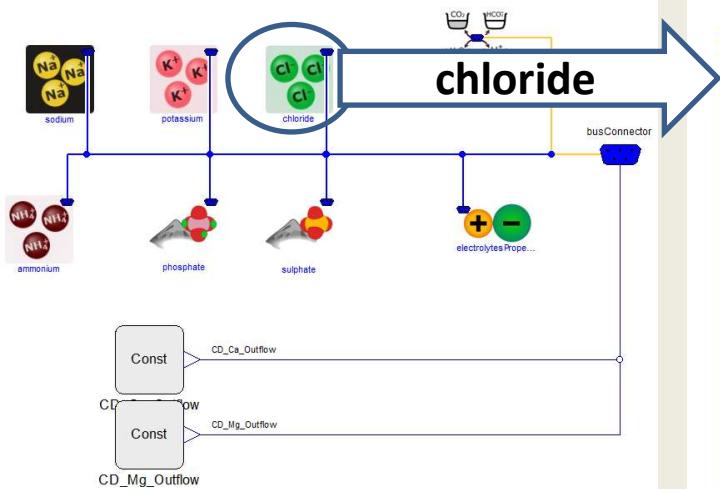


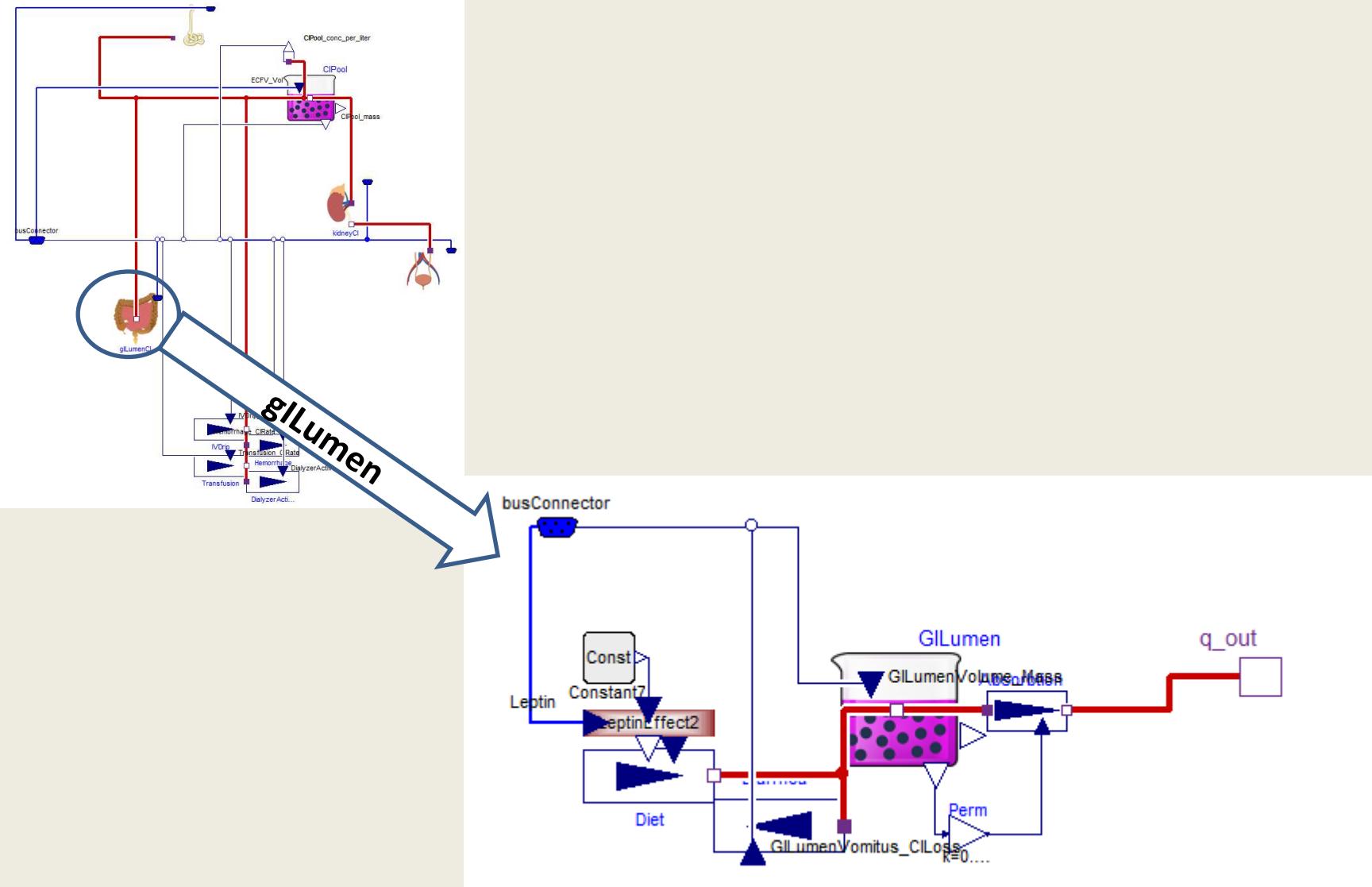


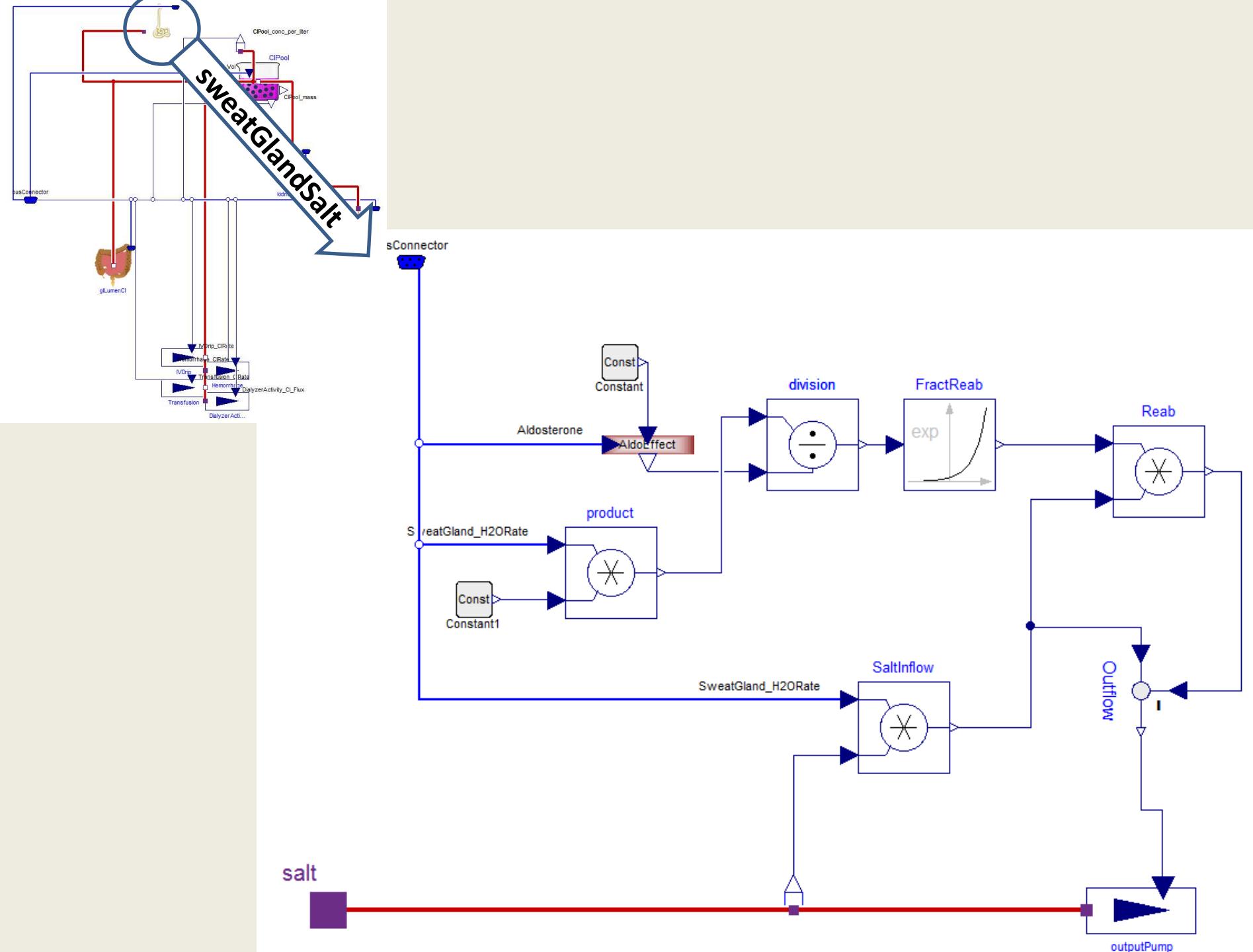


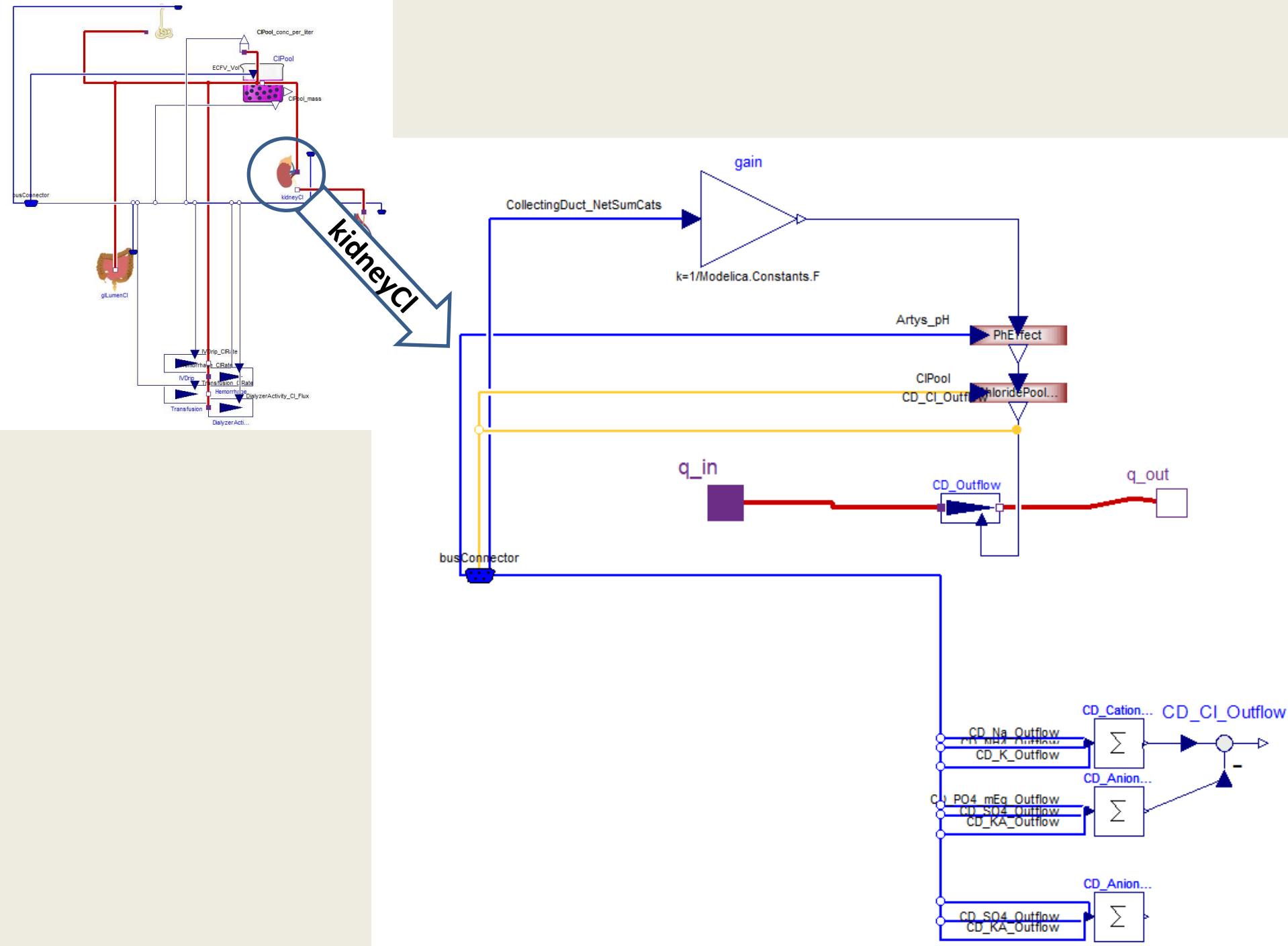


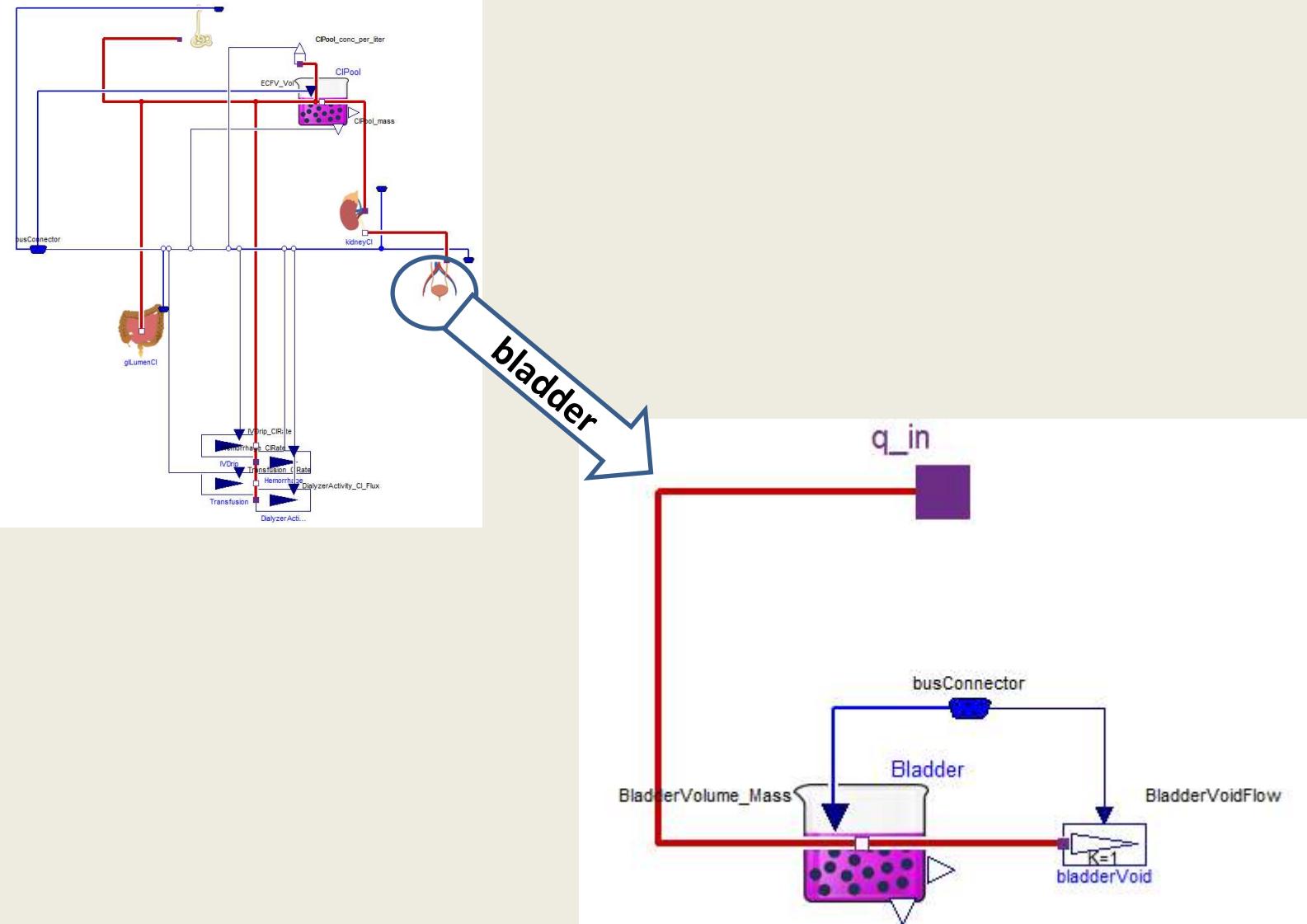


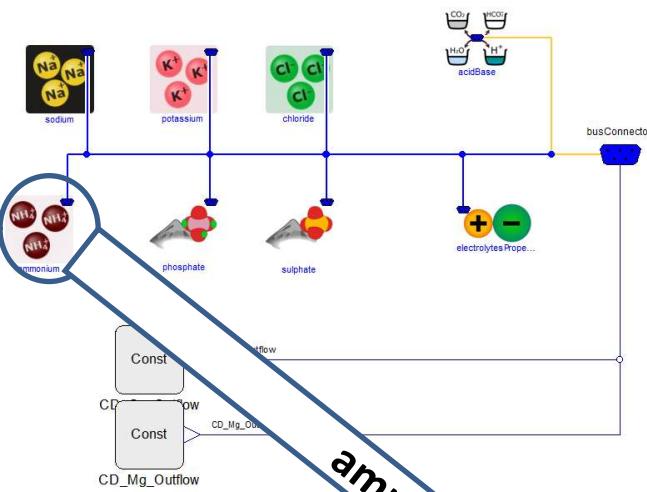




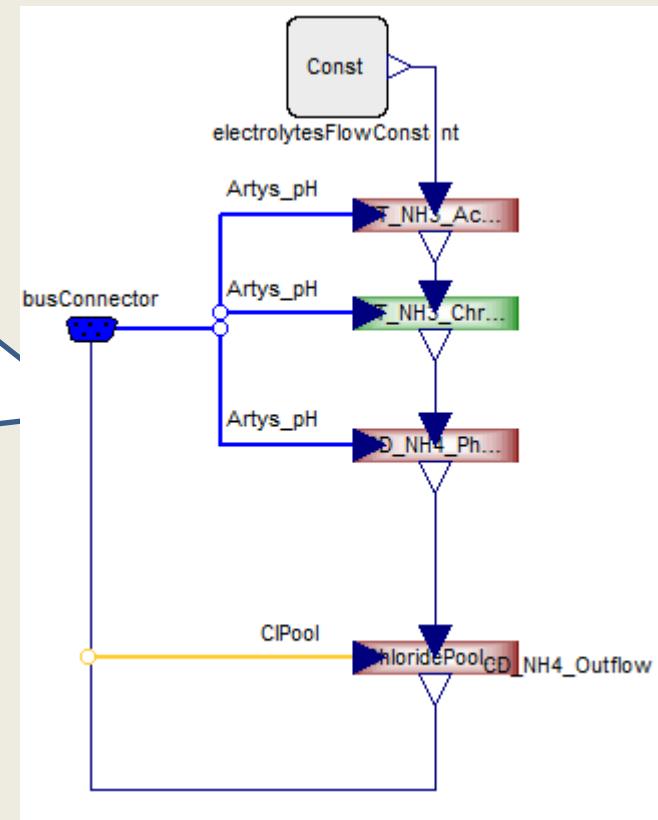


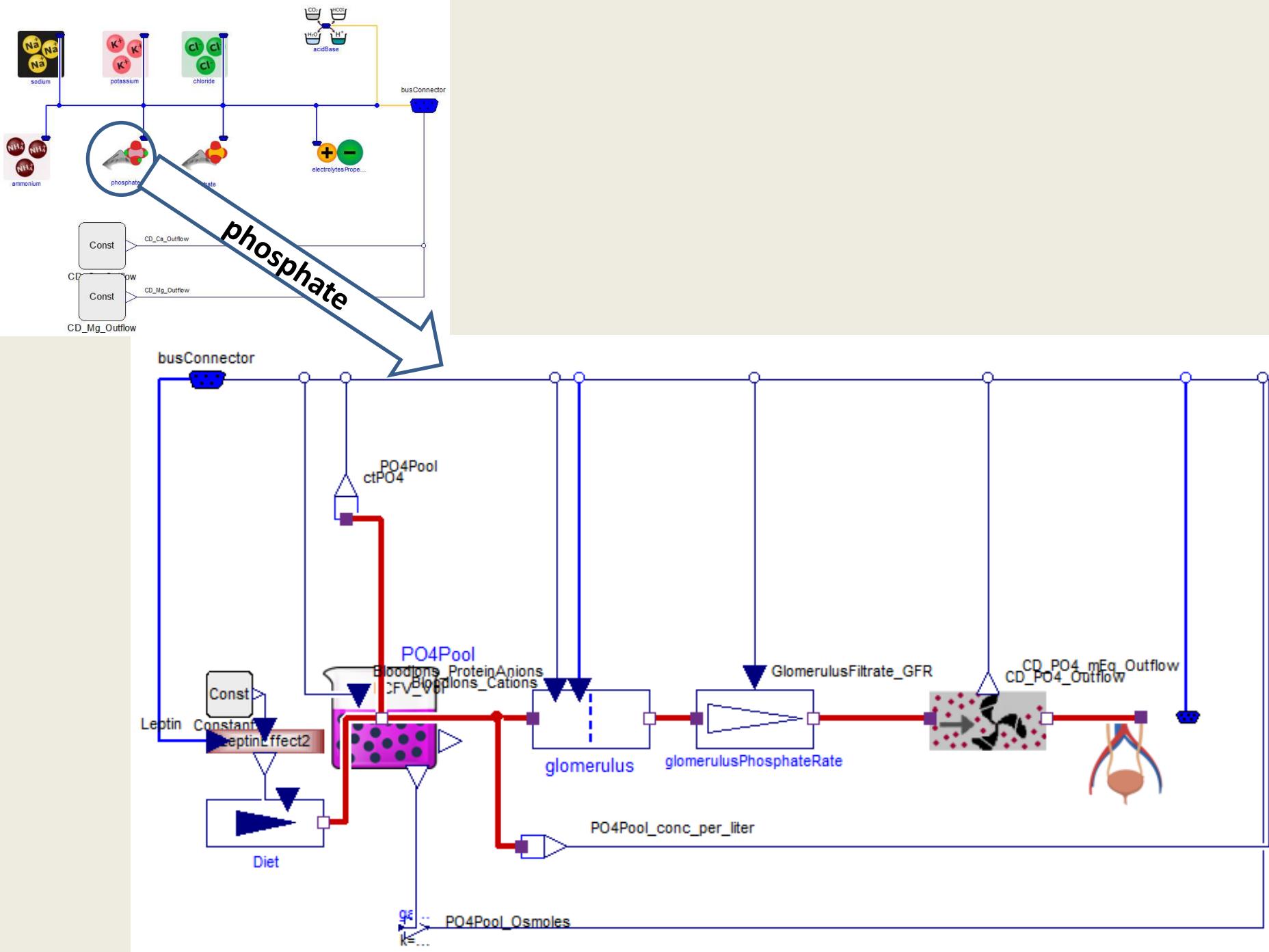


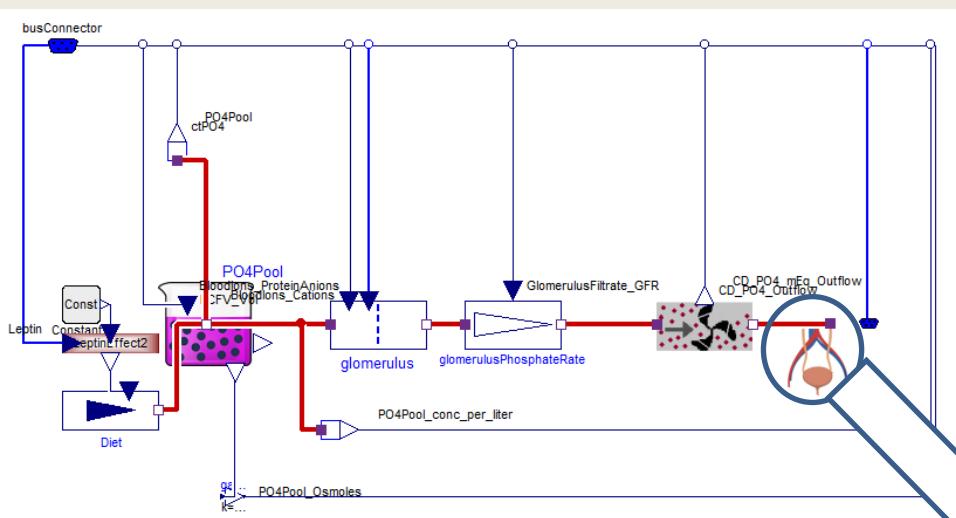




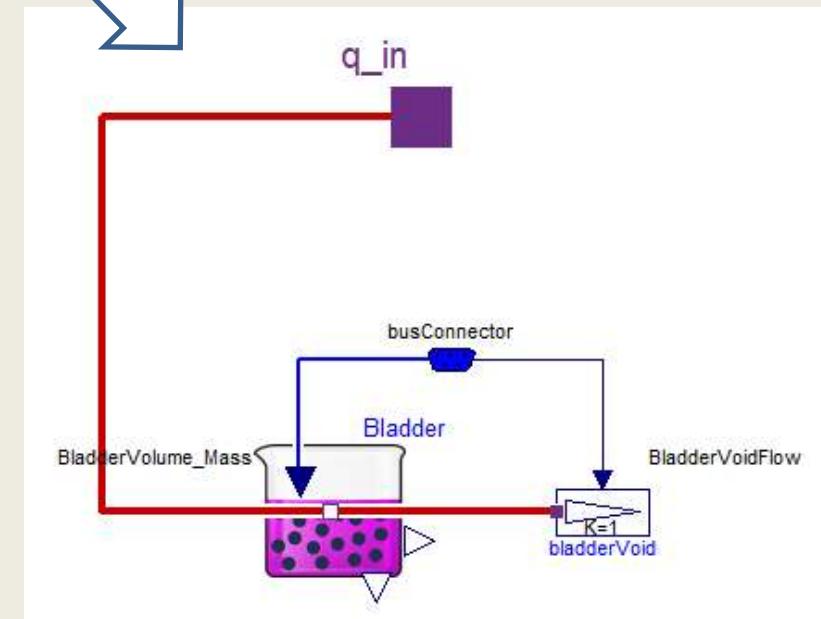
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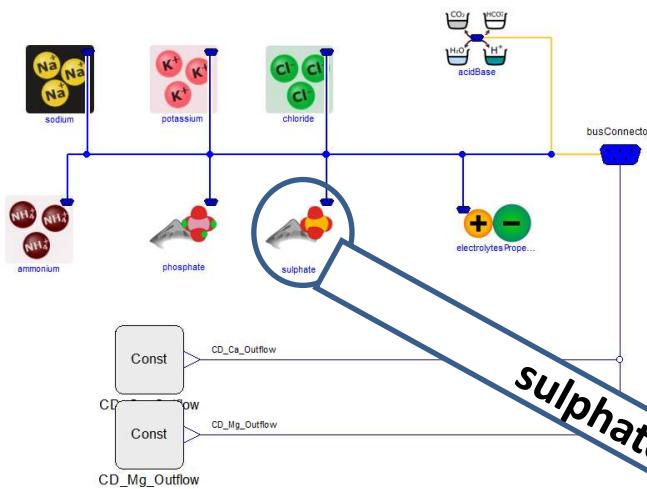




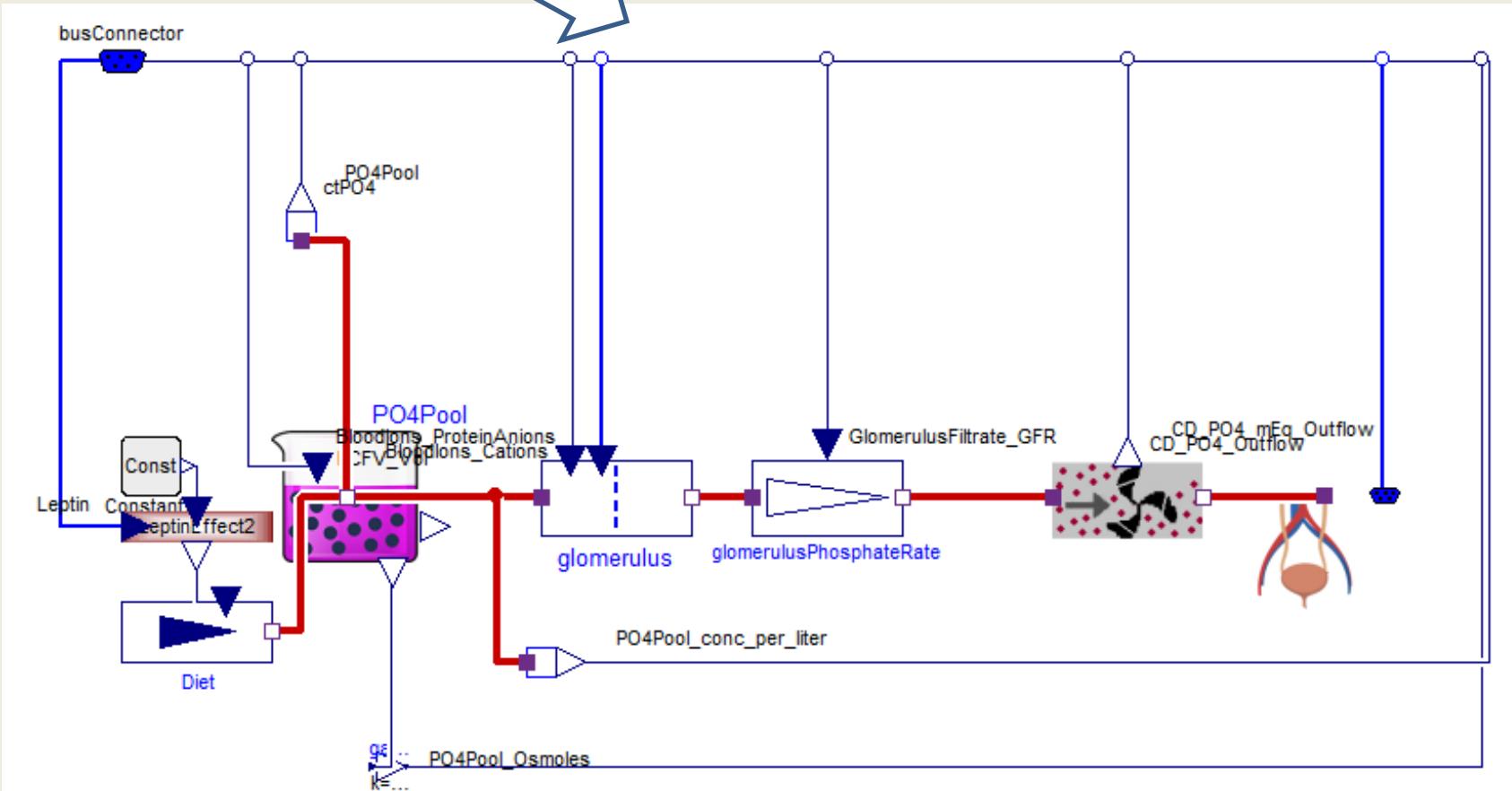


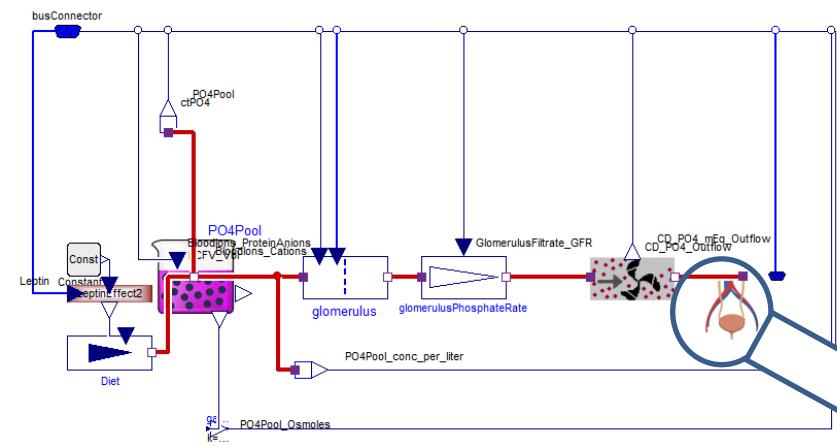
bladder



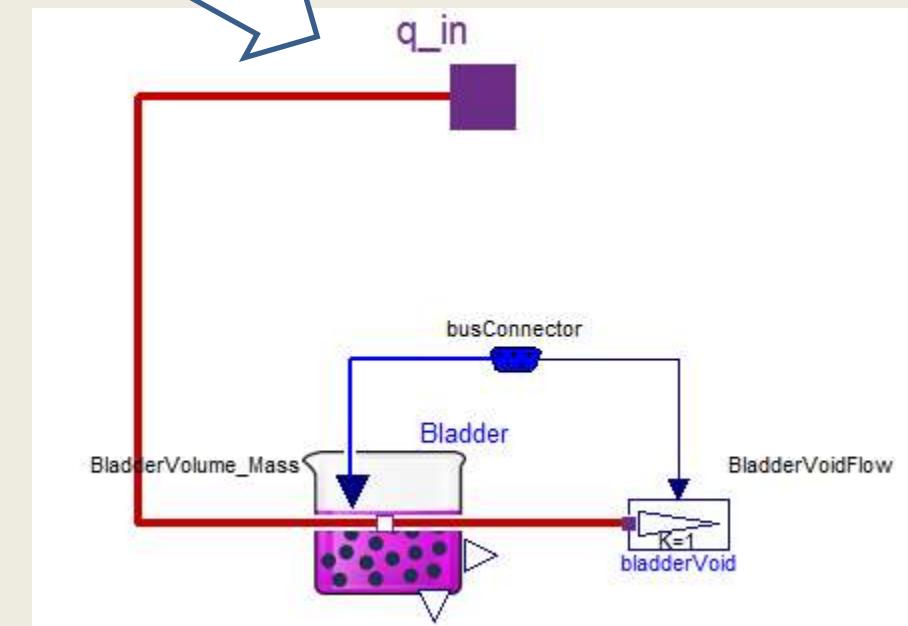


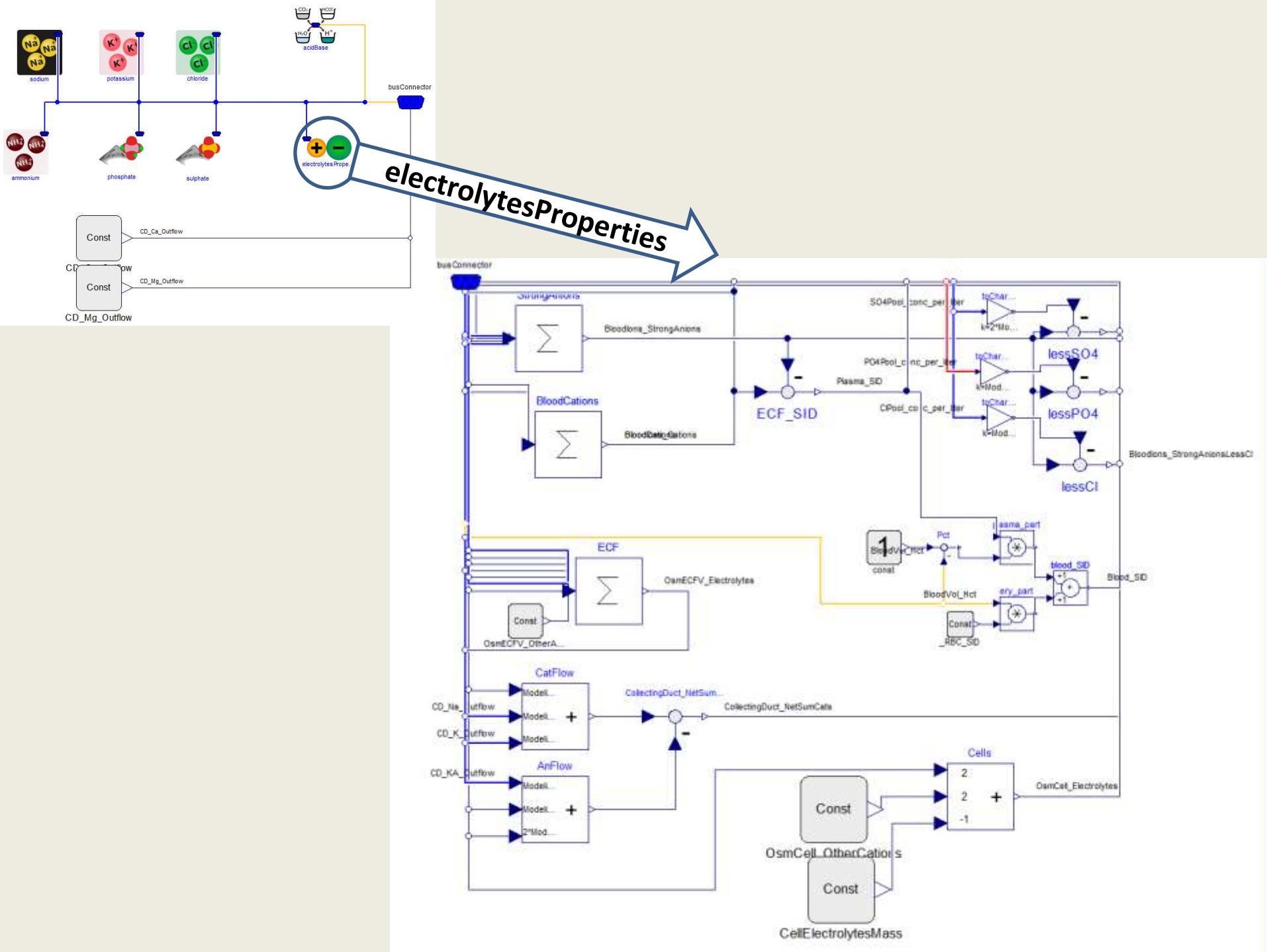
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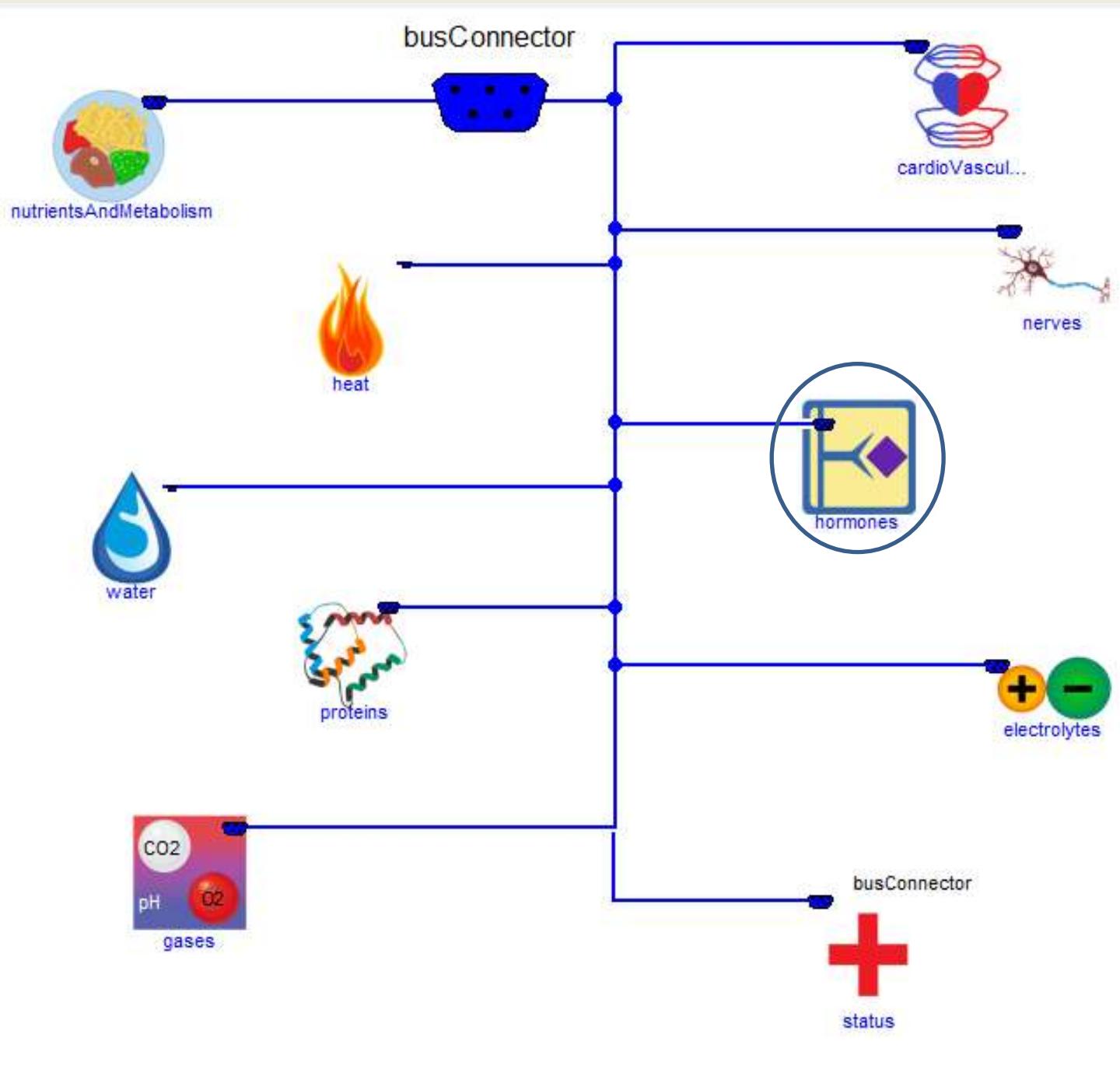


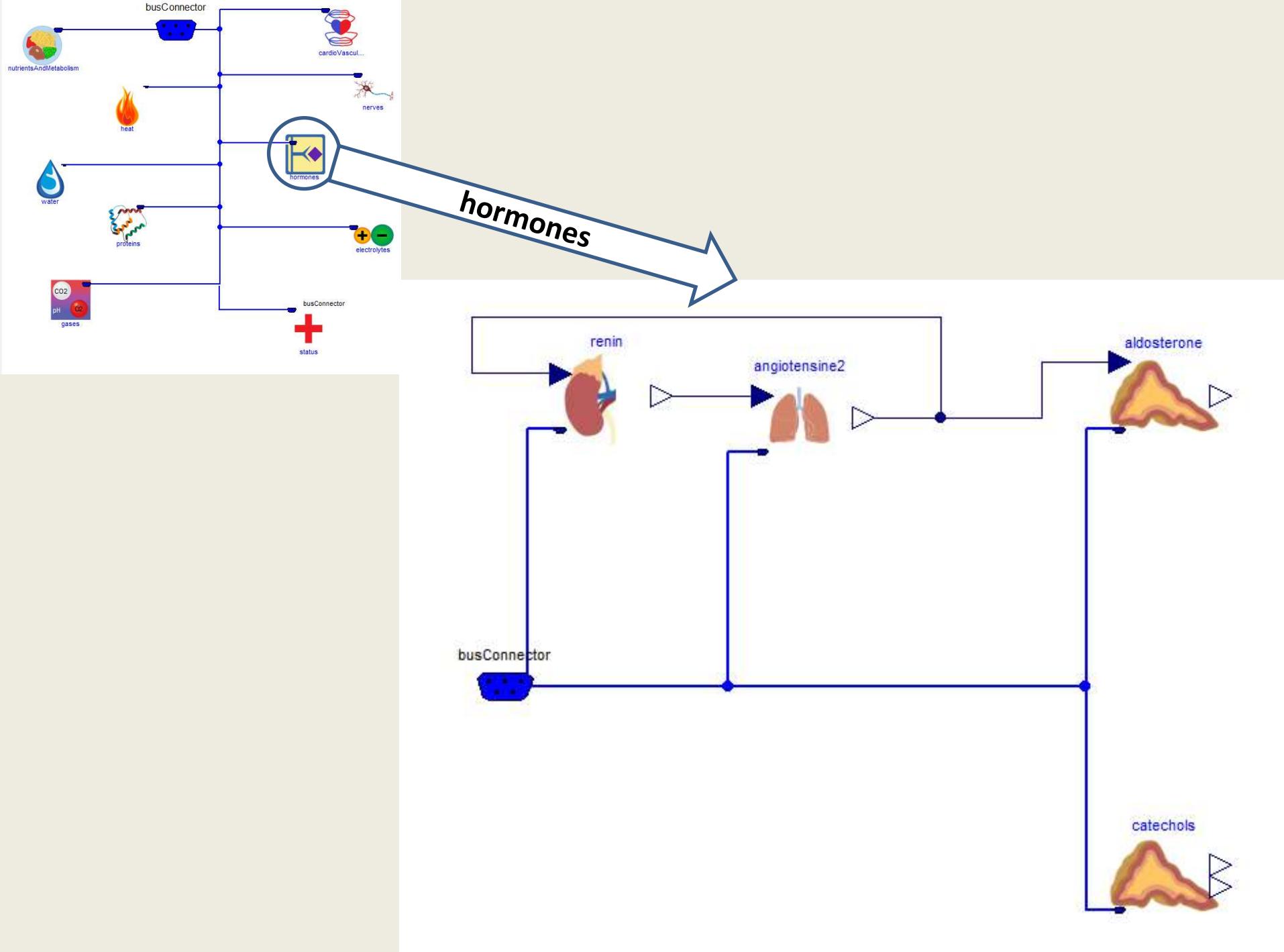


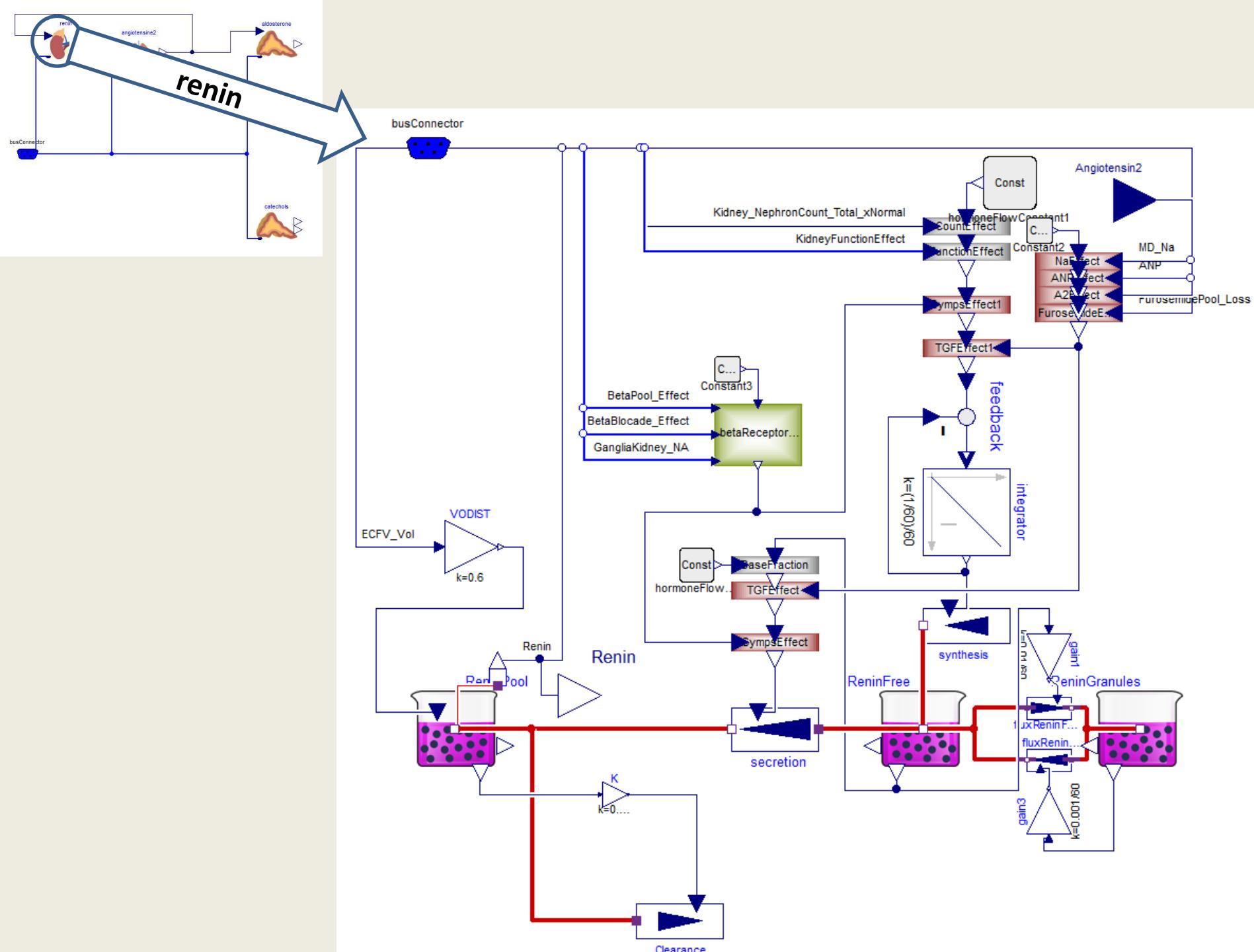
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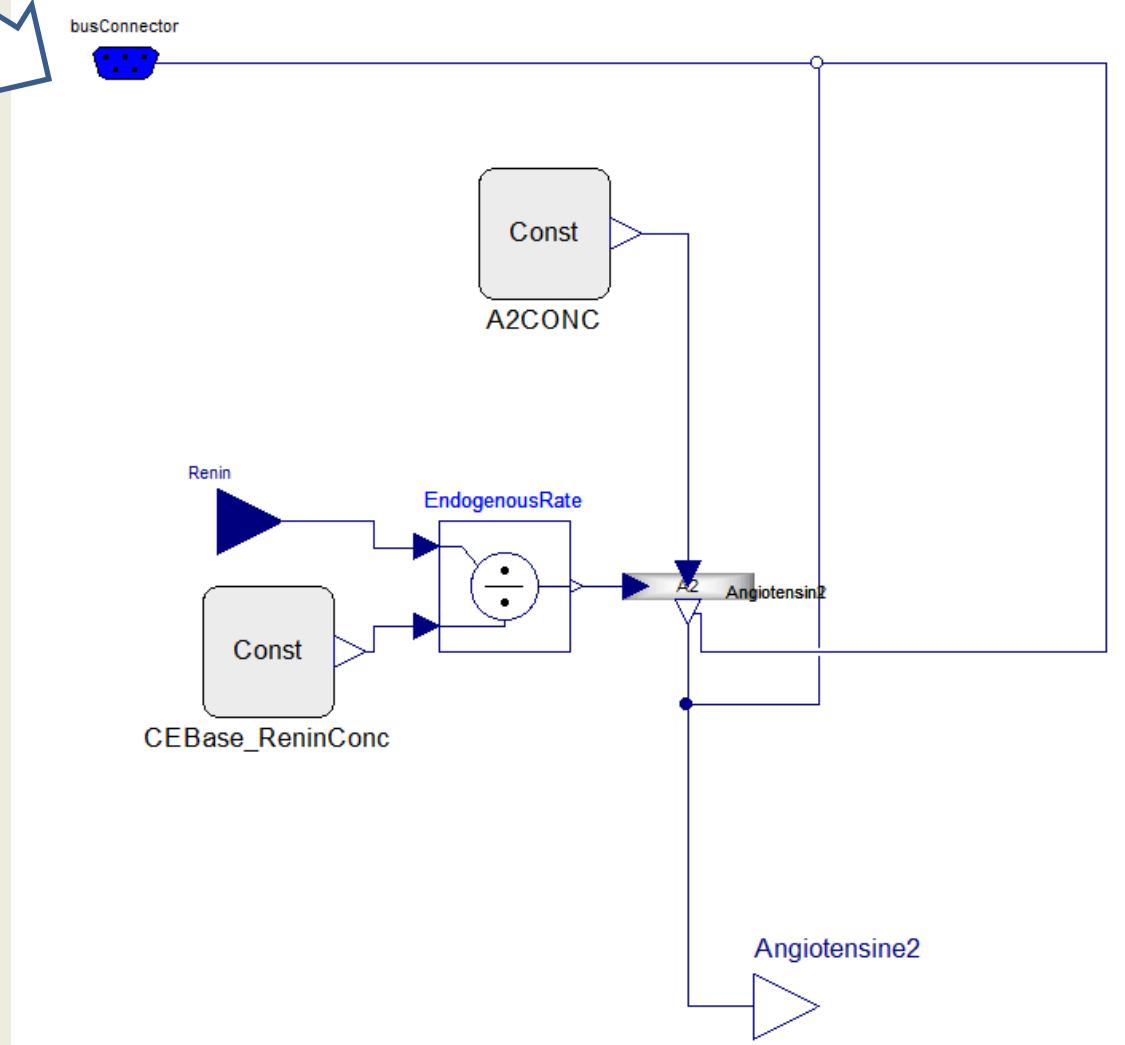
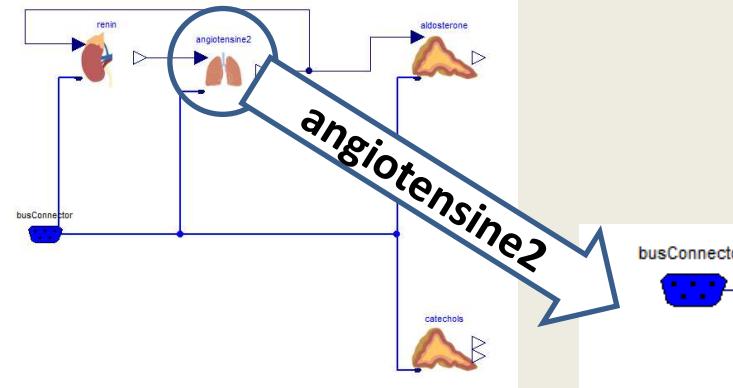


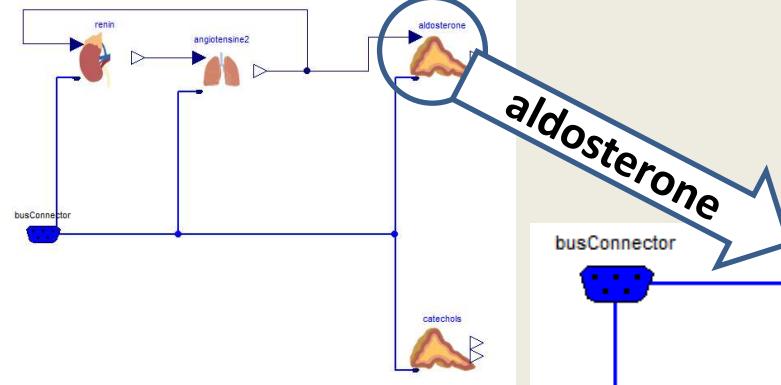








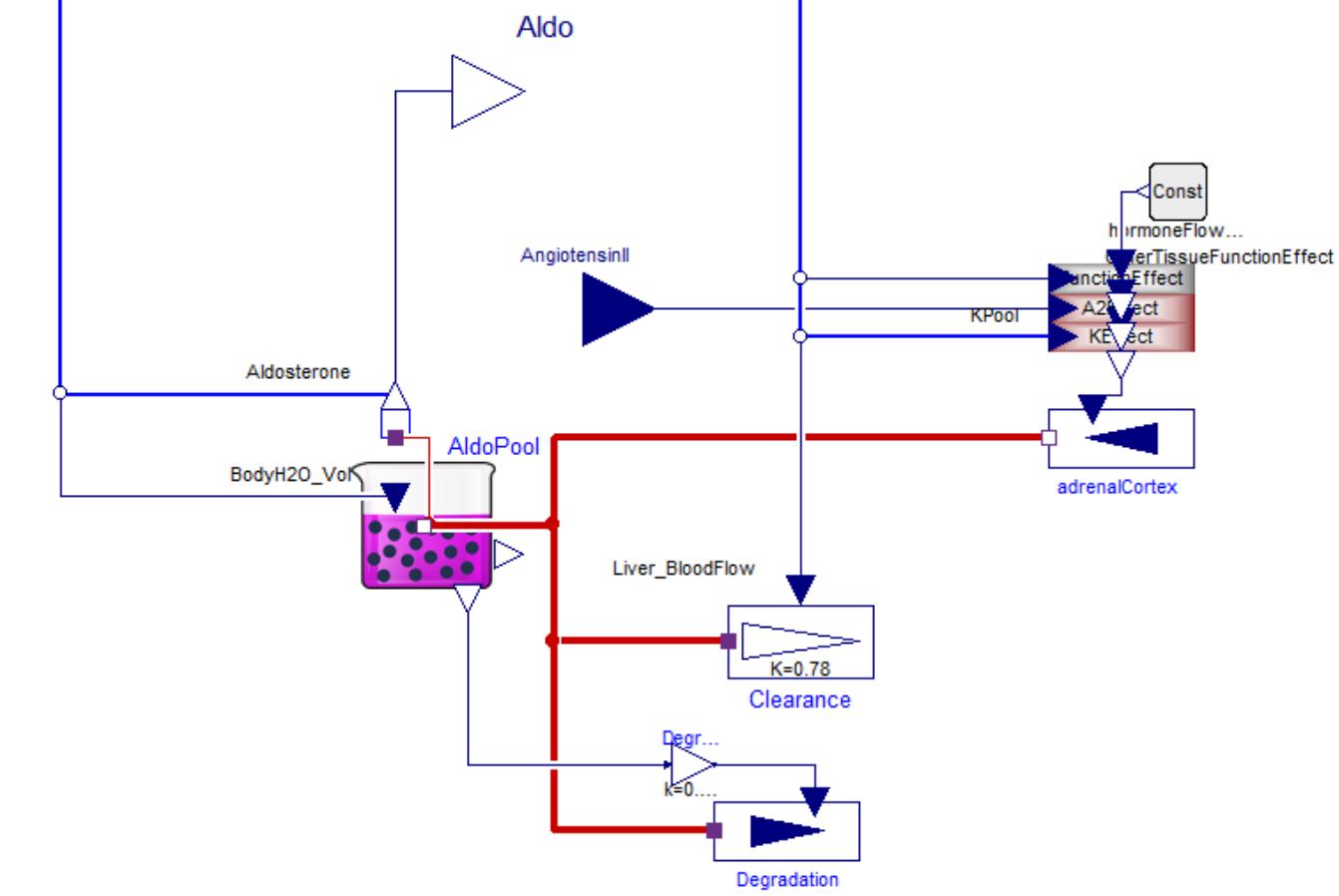


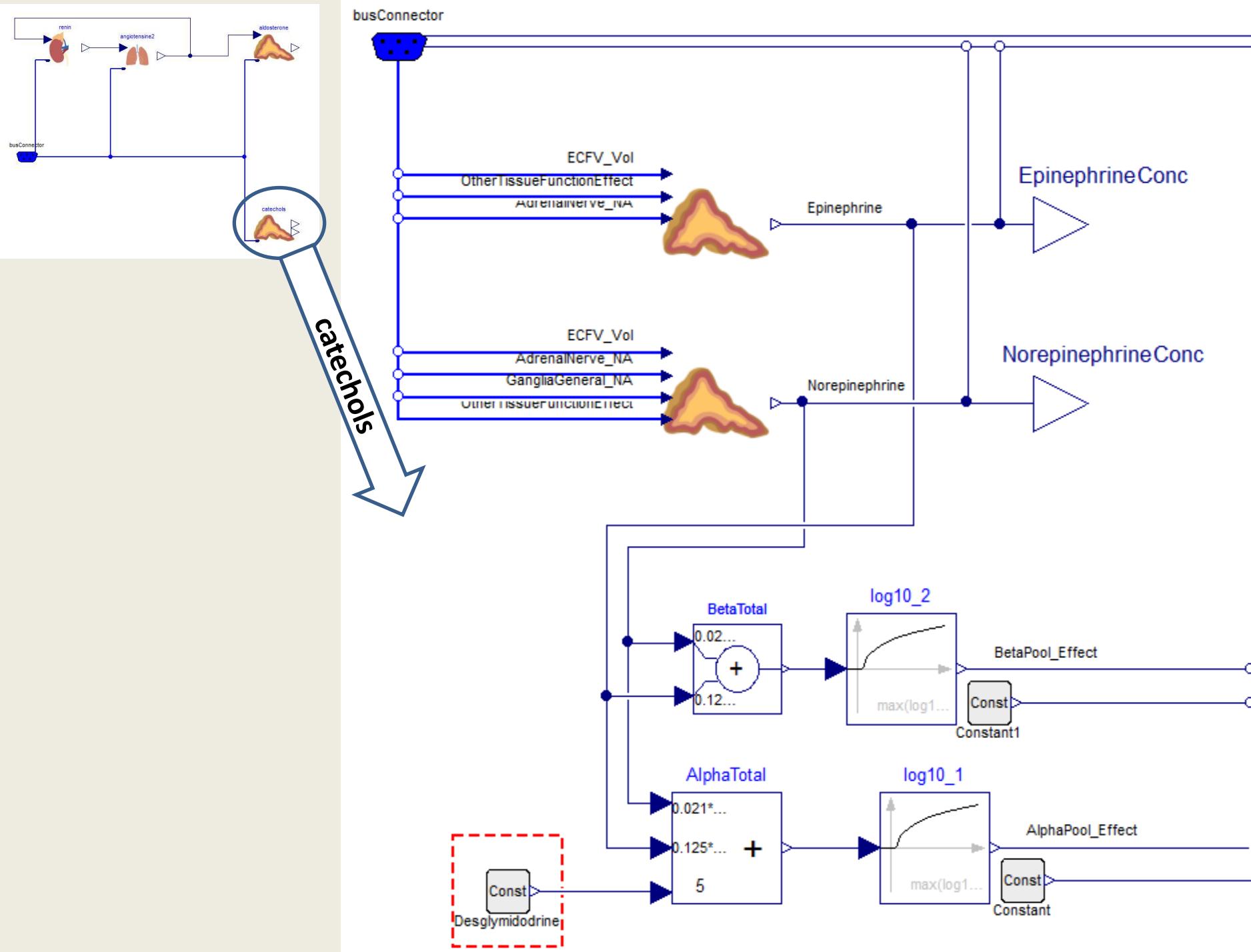


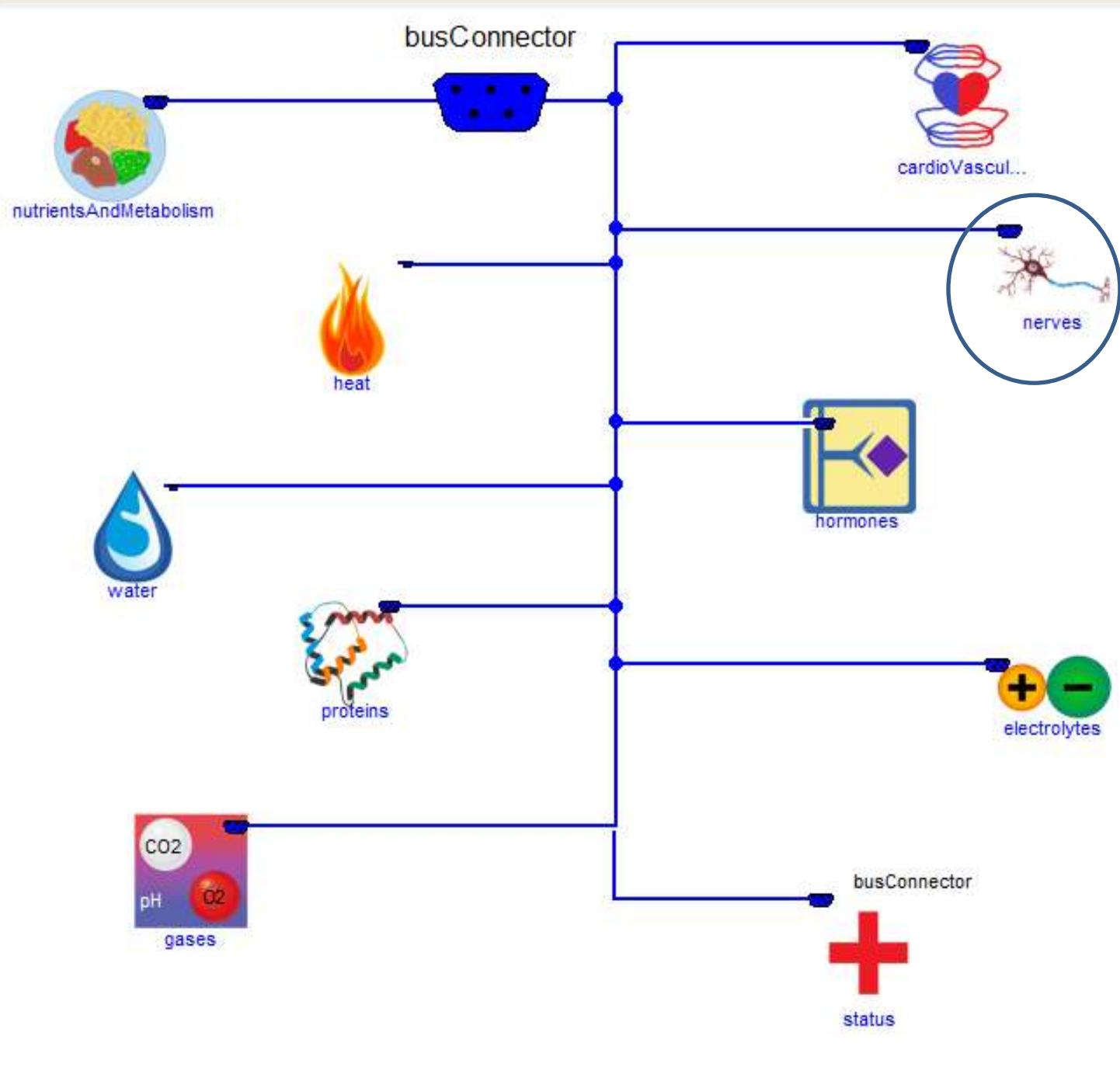
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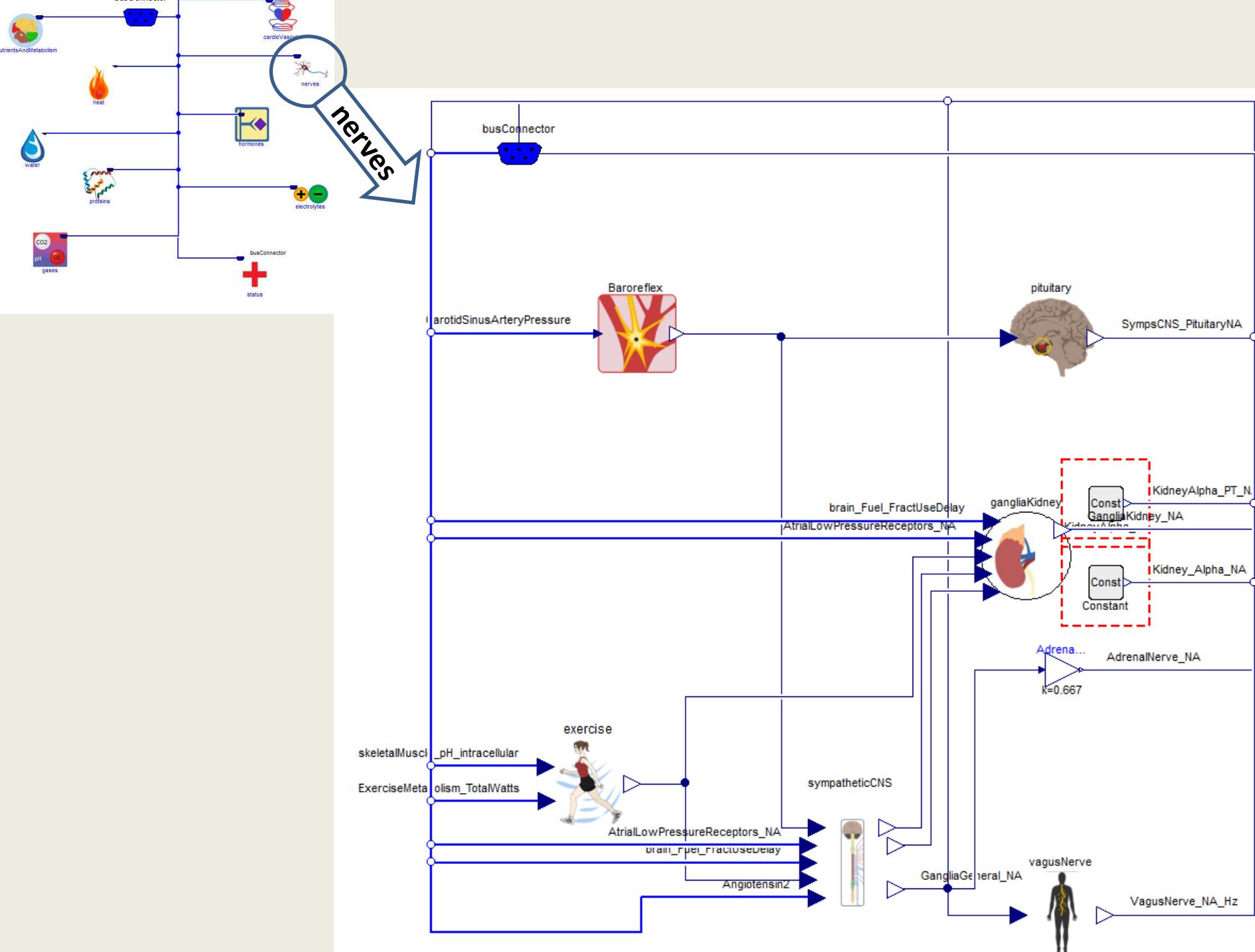
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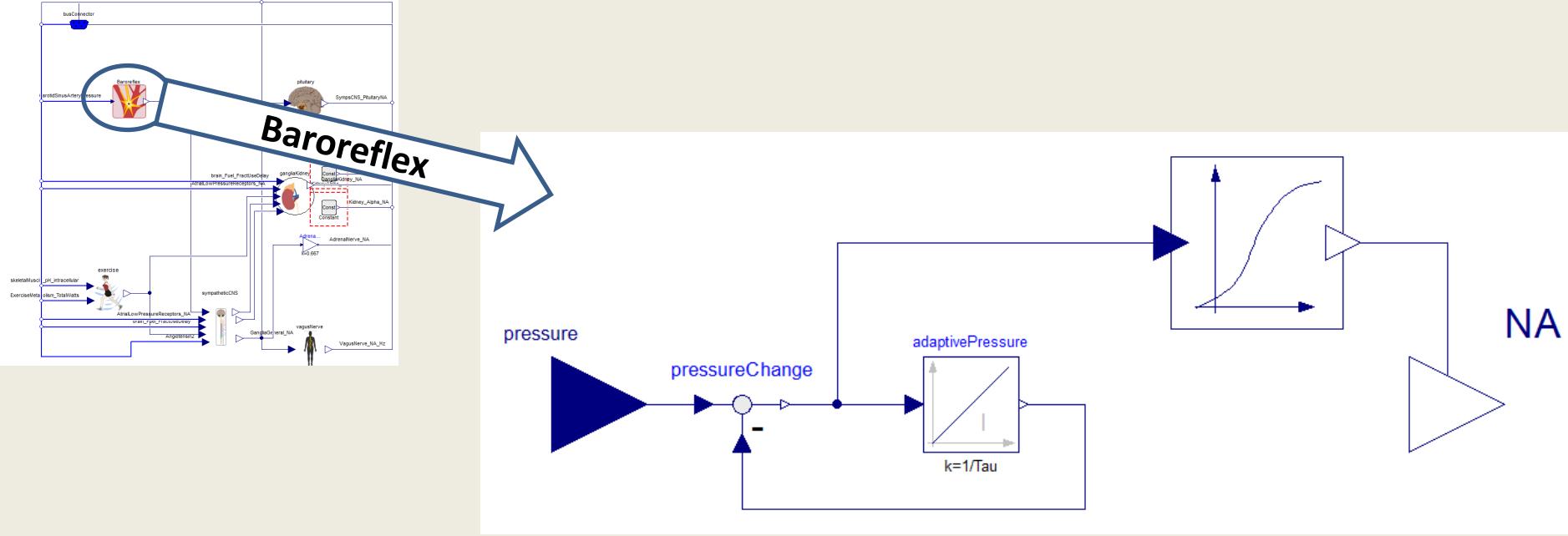
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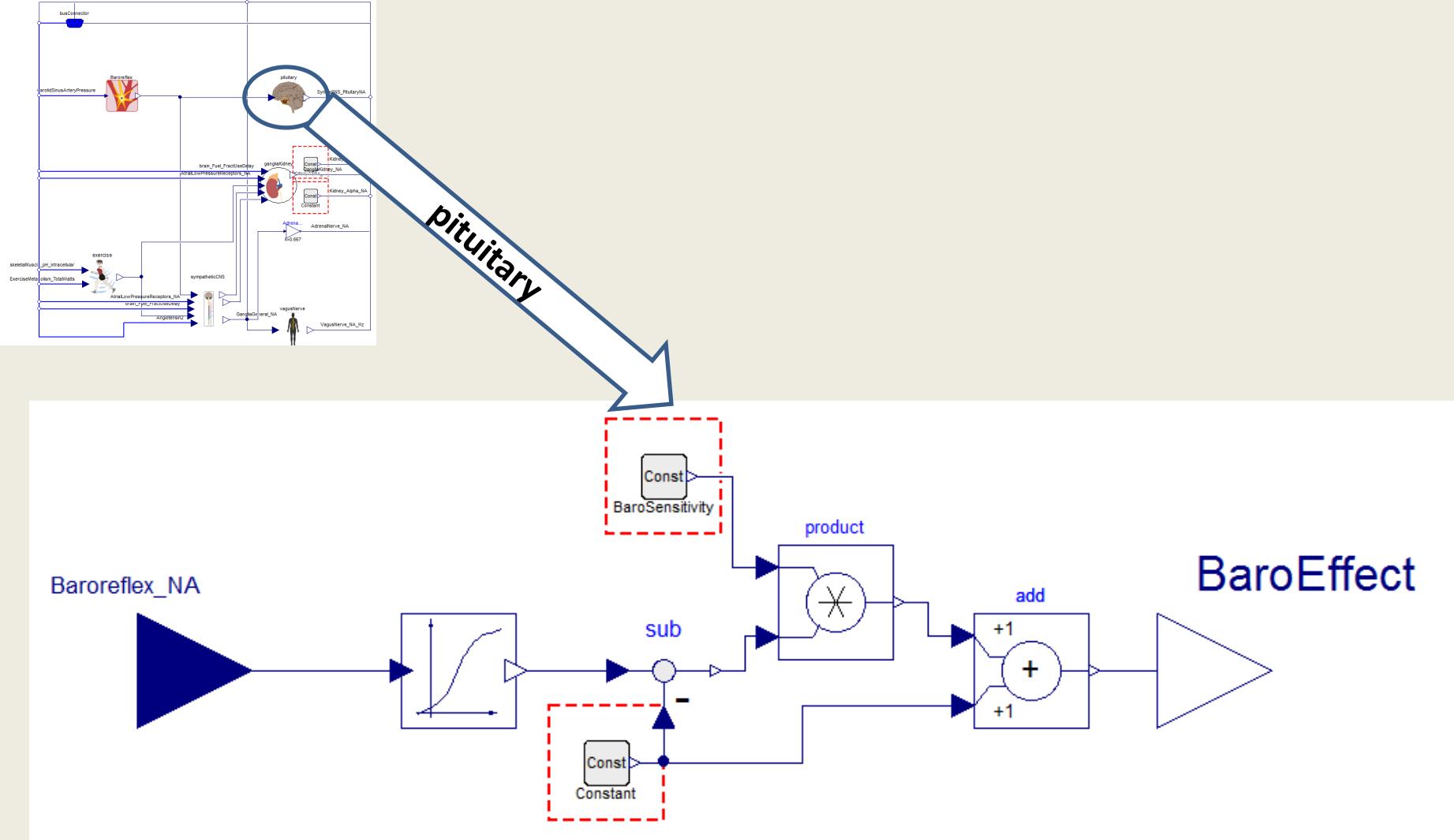


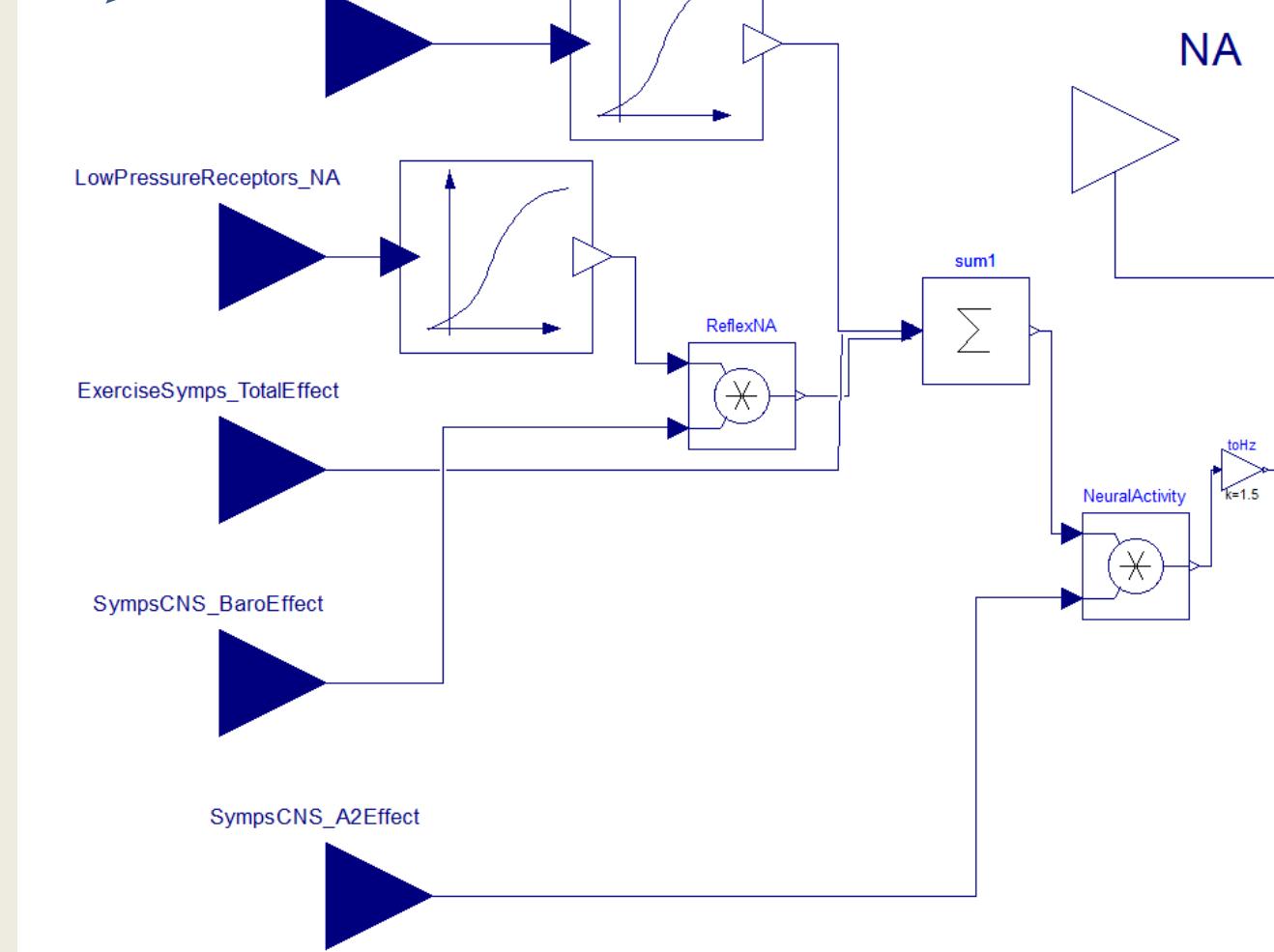
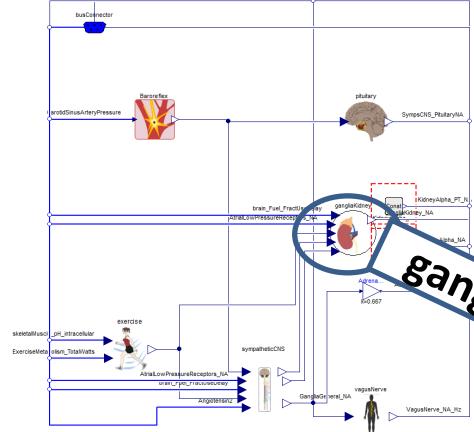


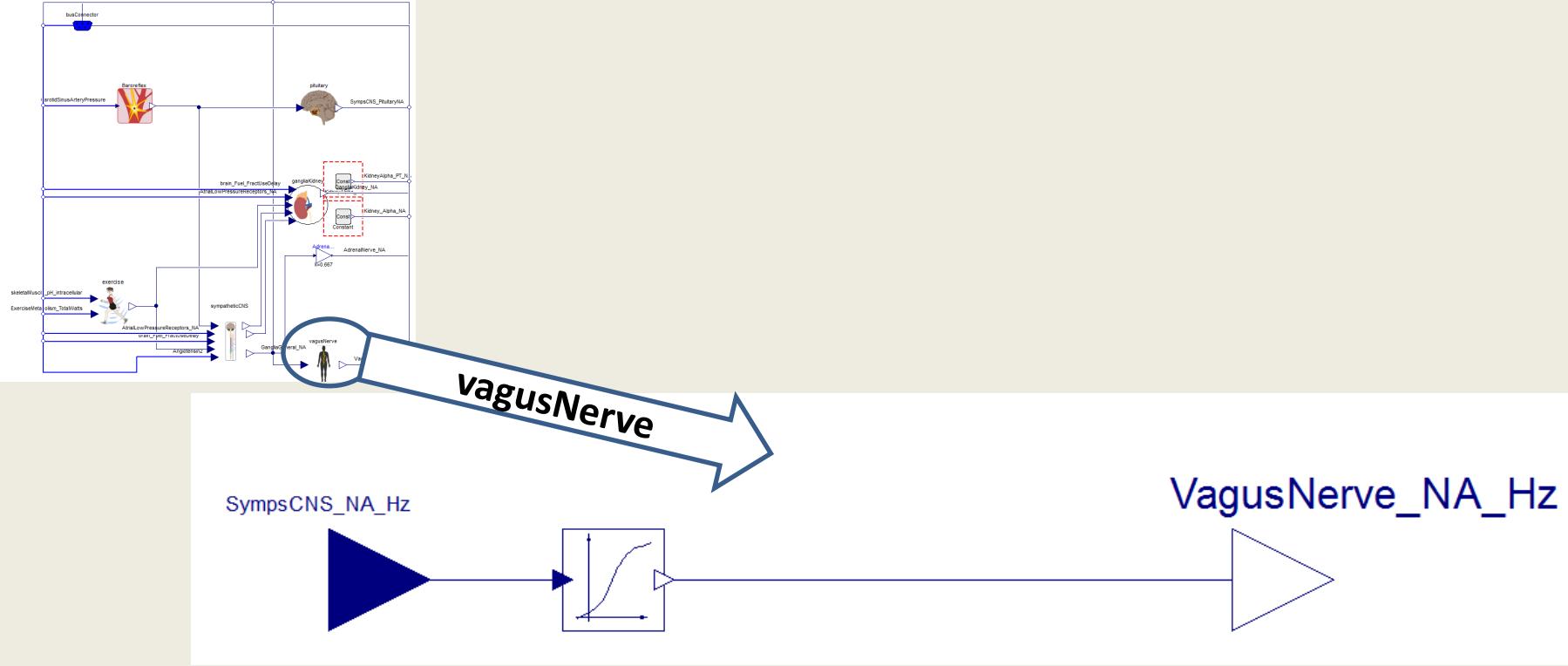


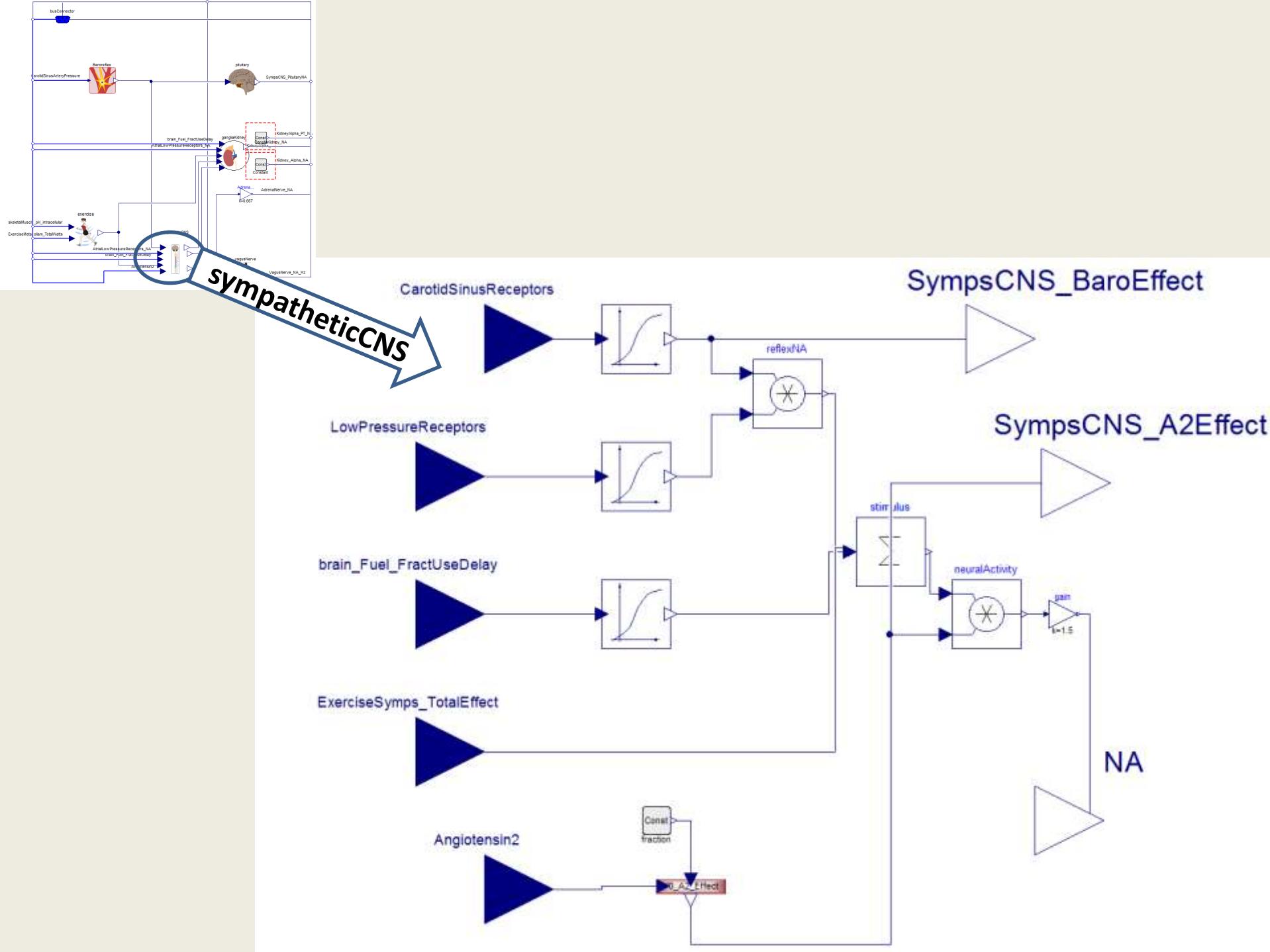


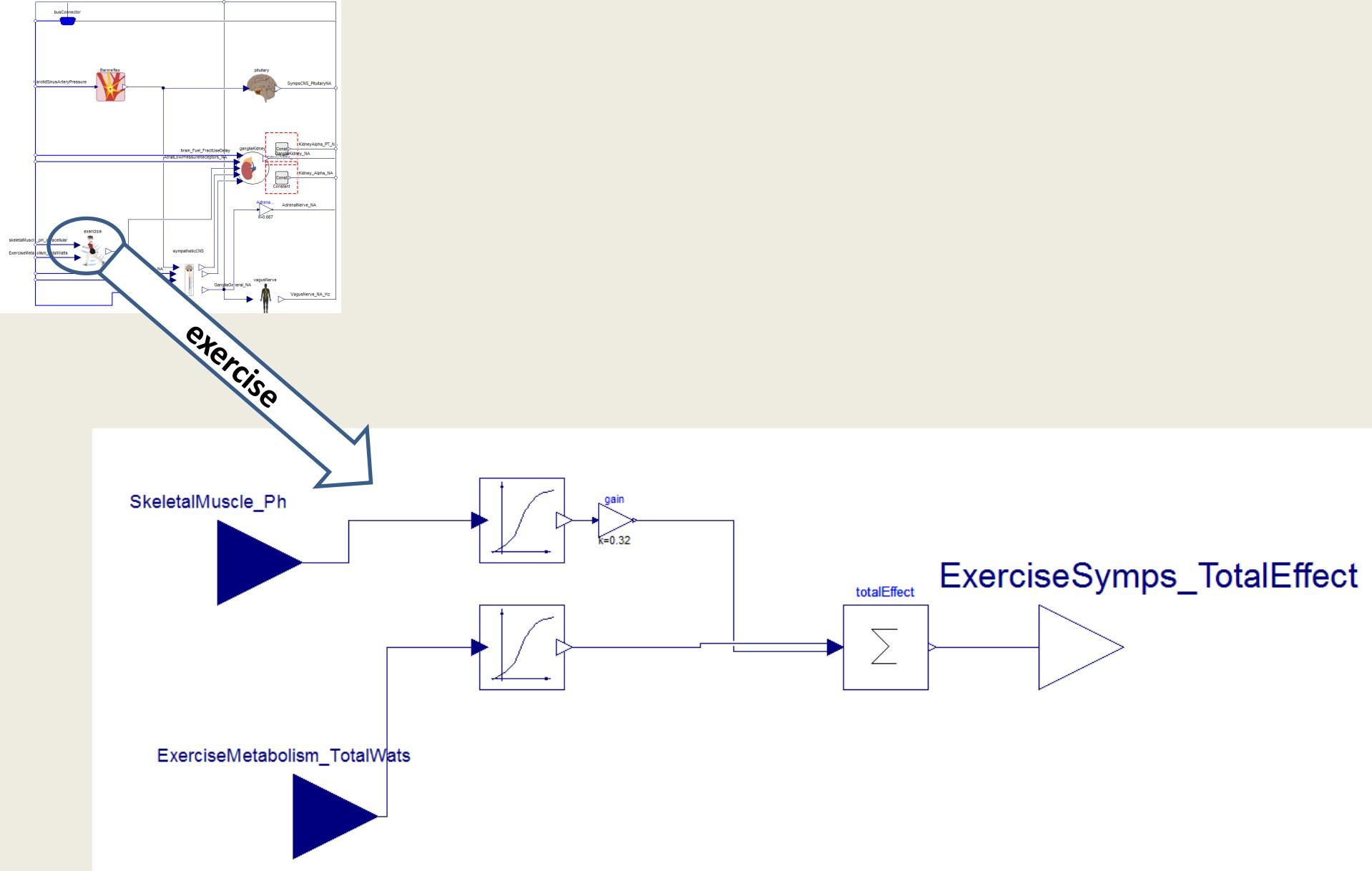


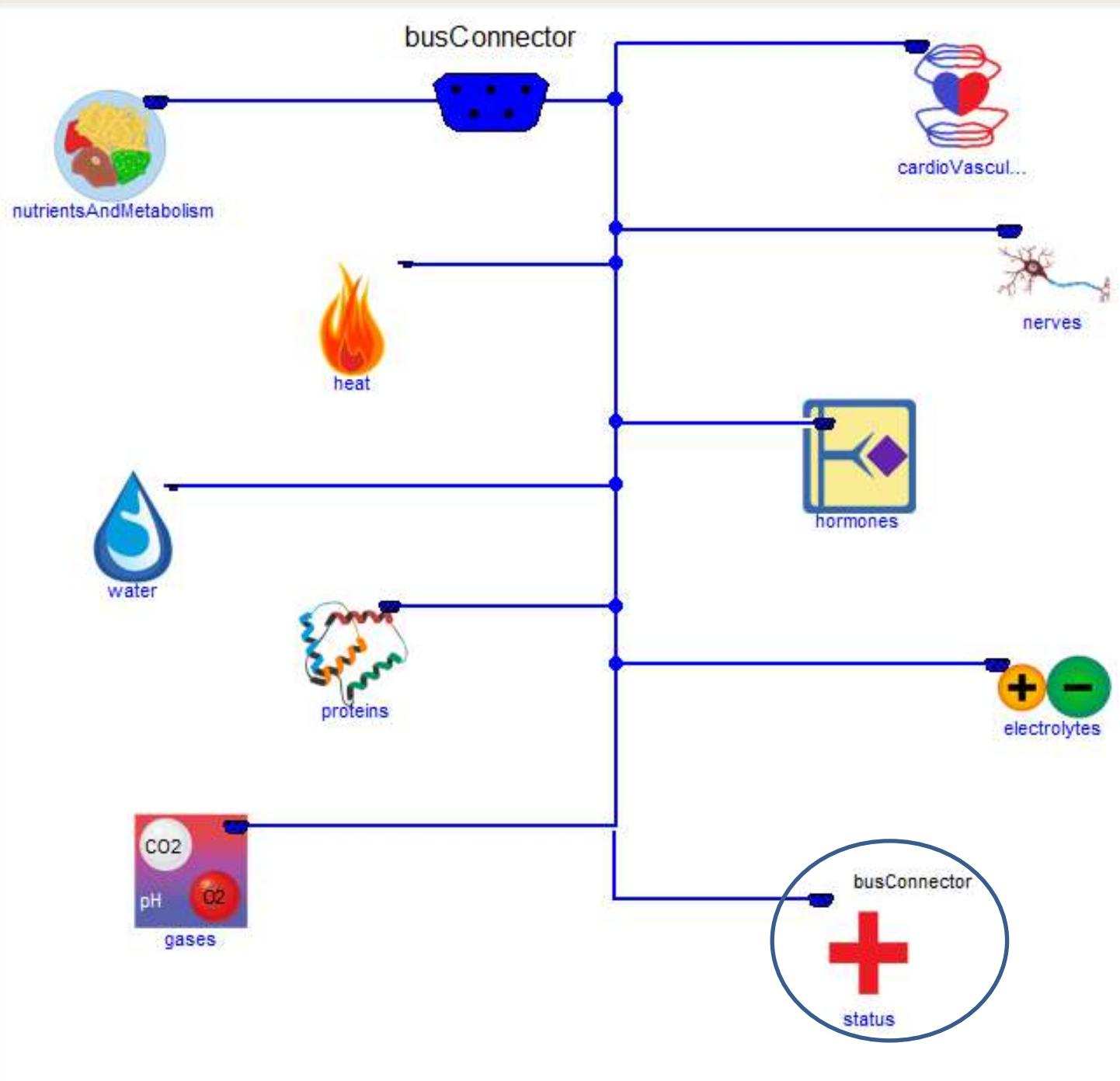


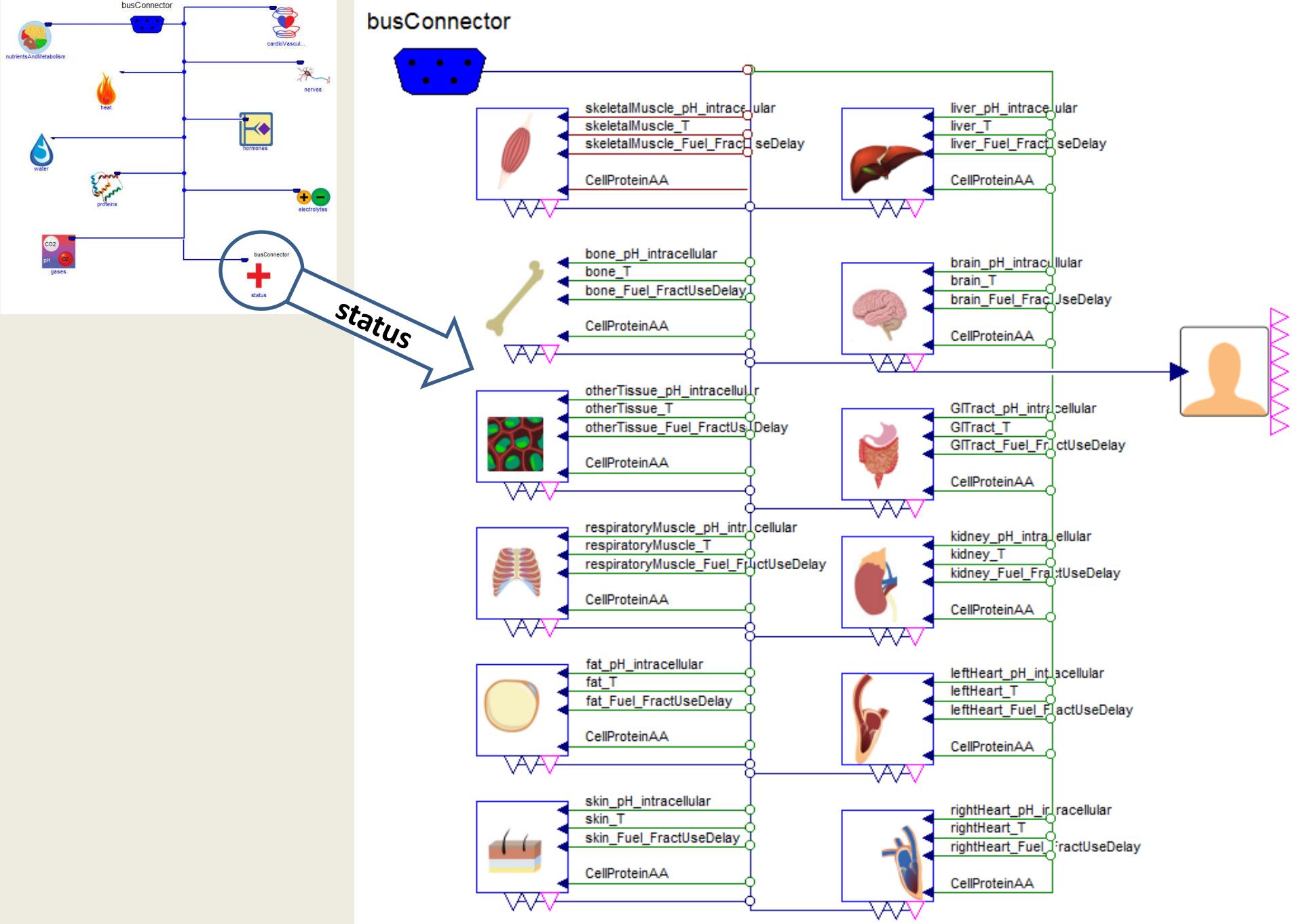


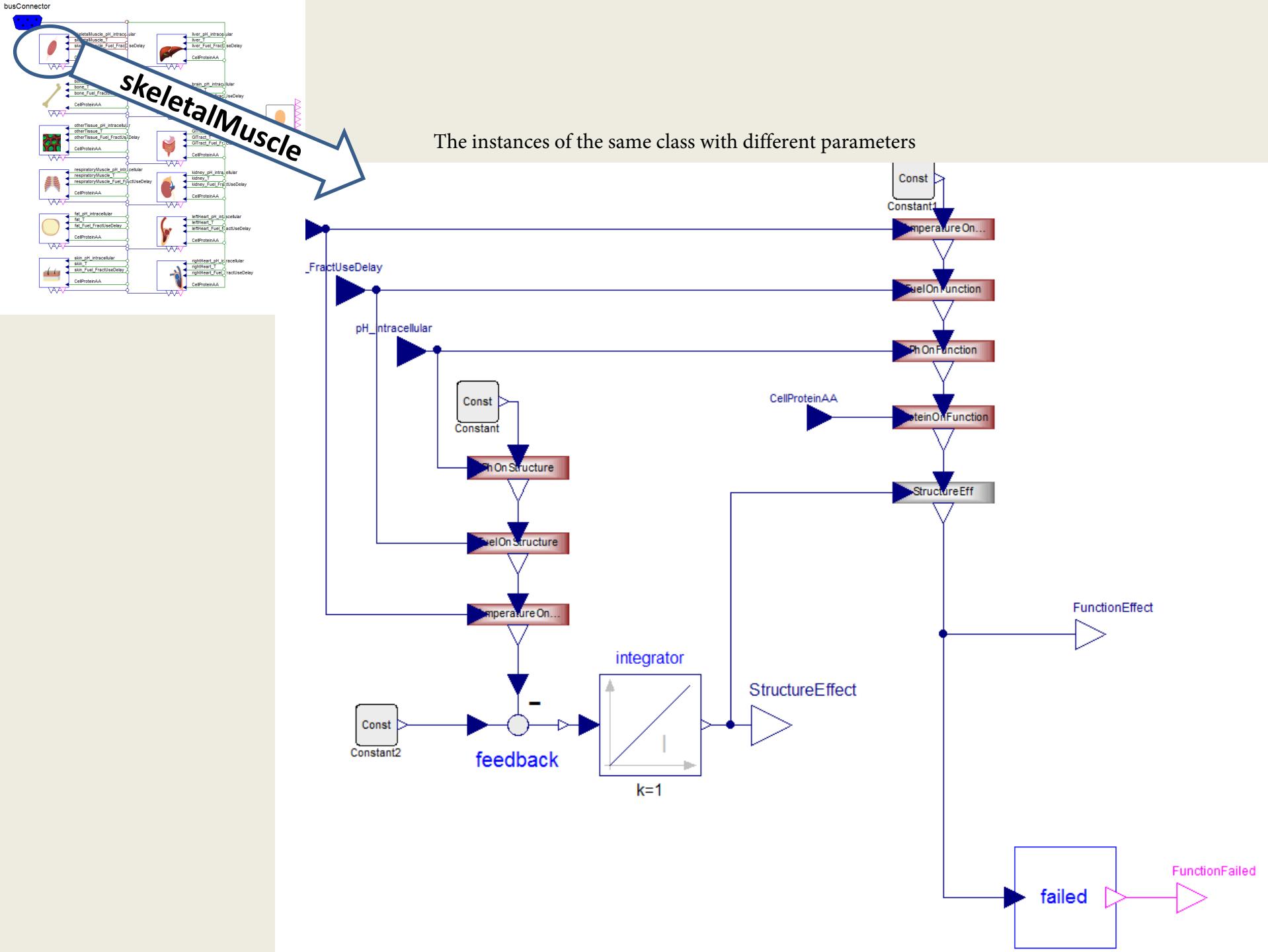


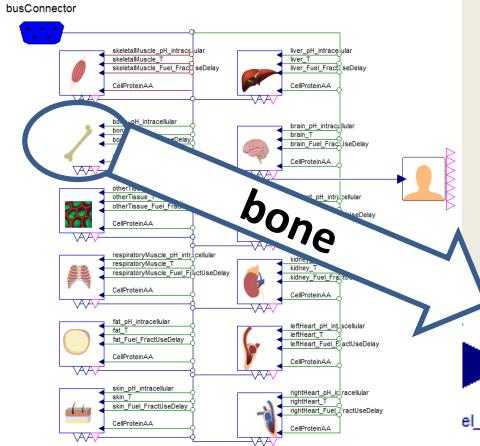




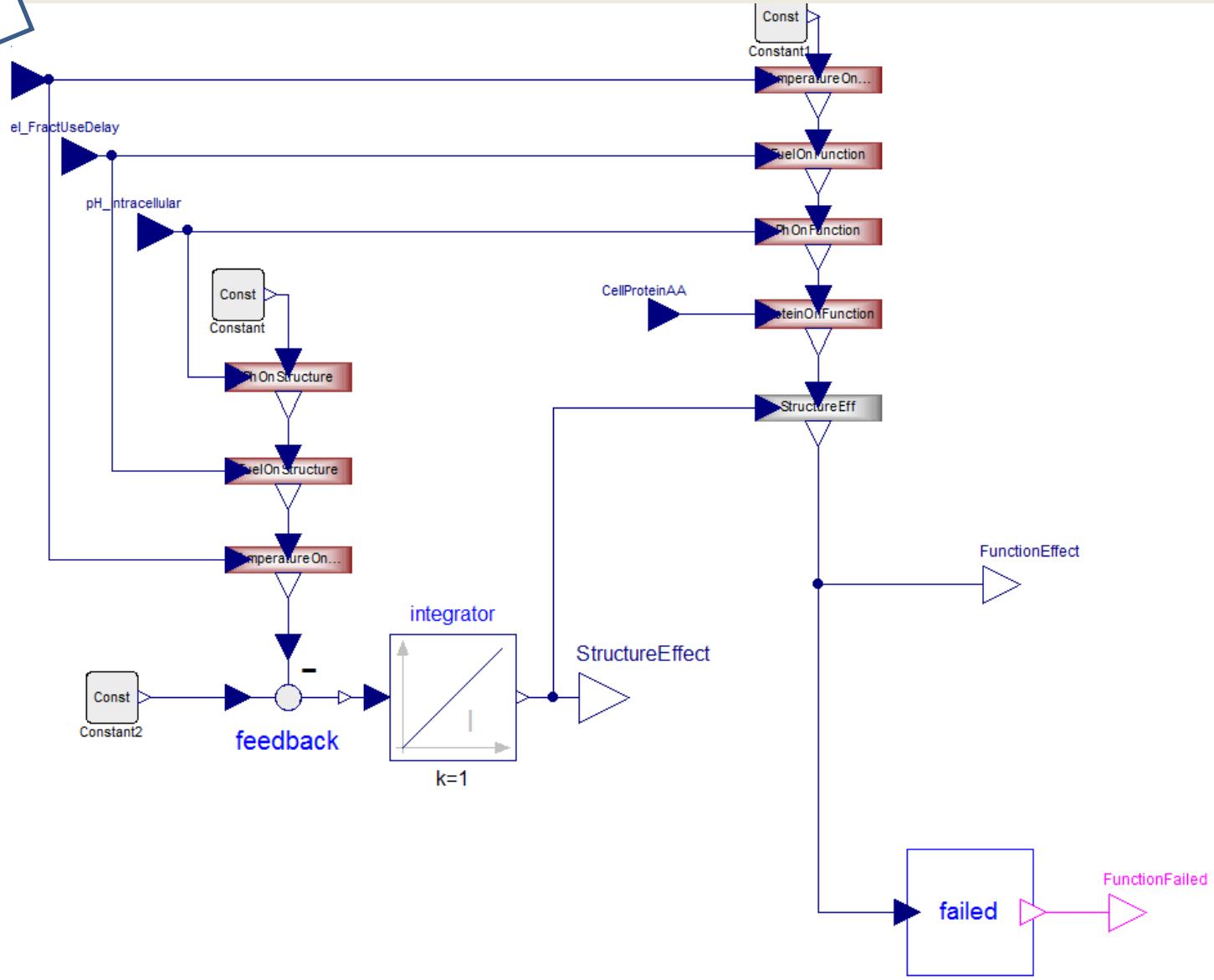


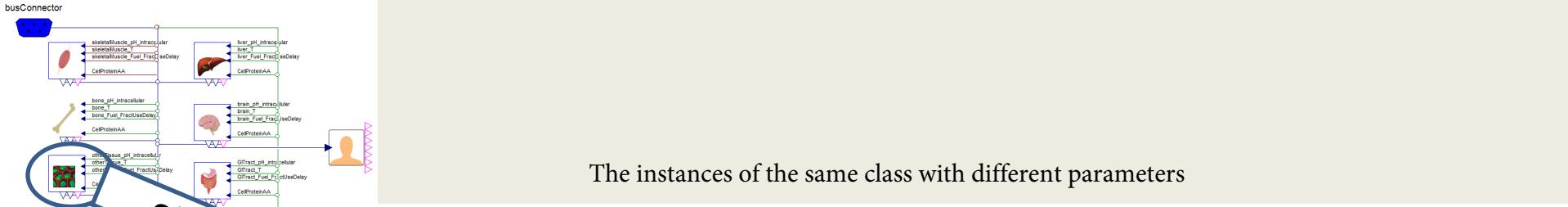




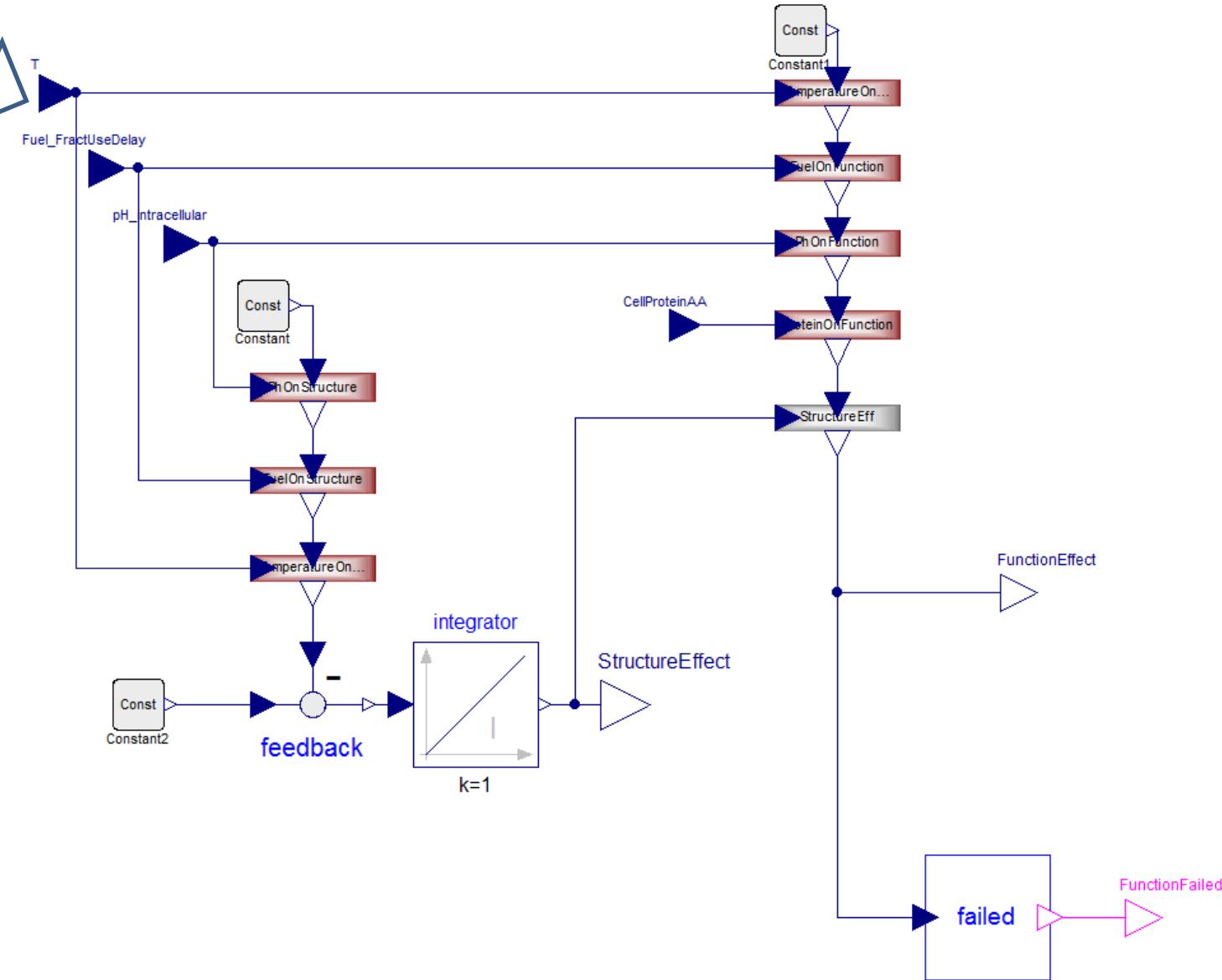


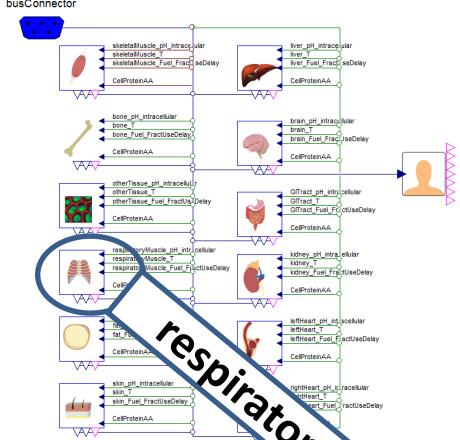
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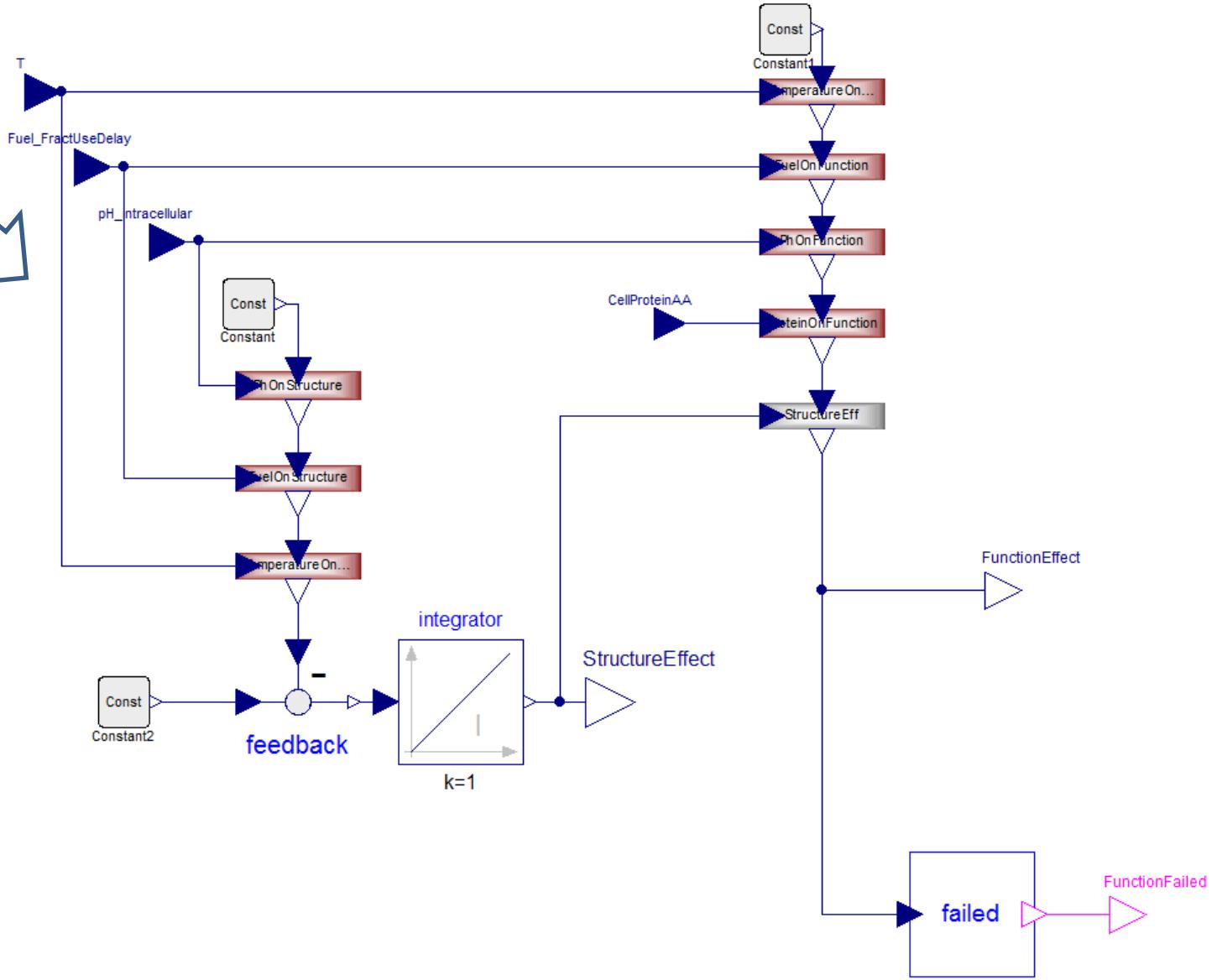


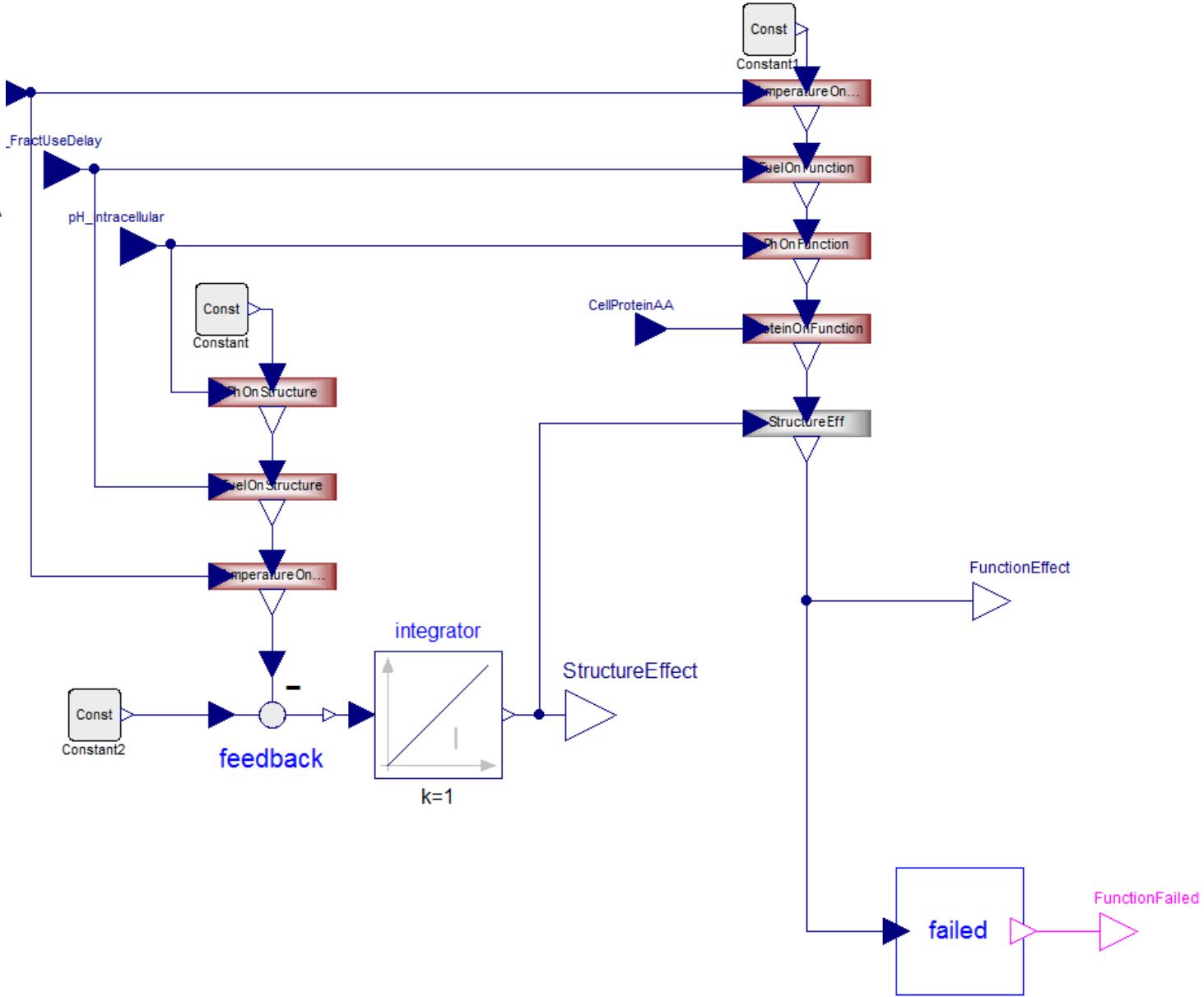
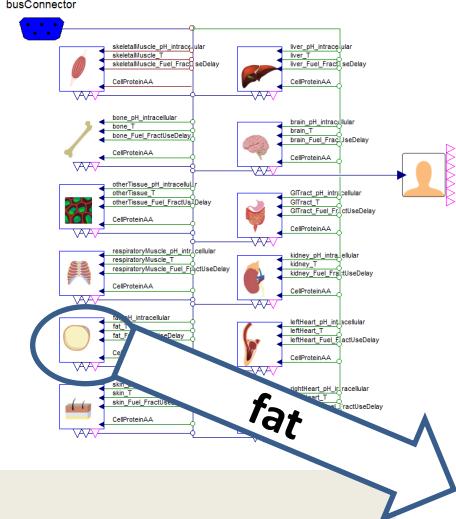
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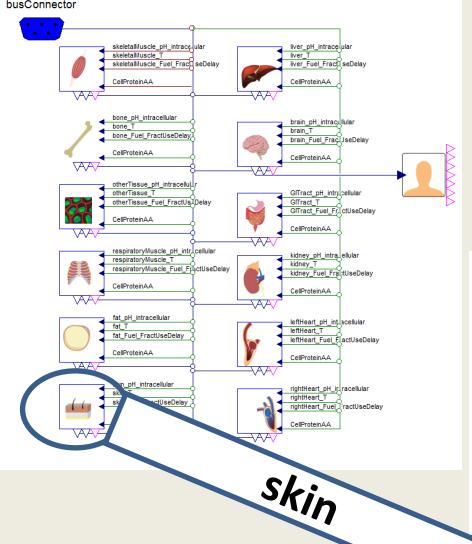




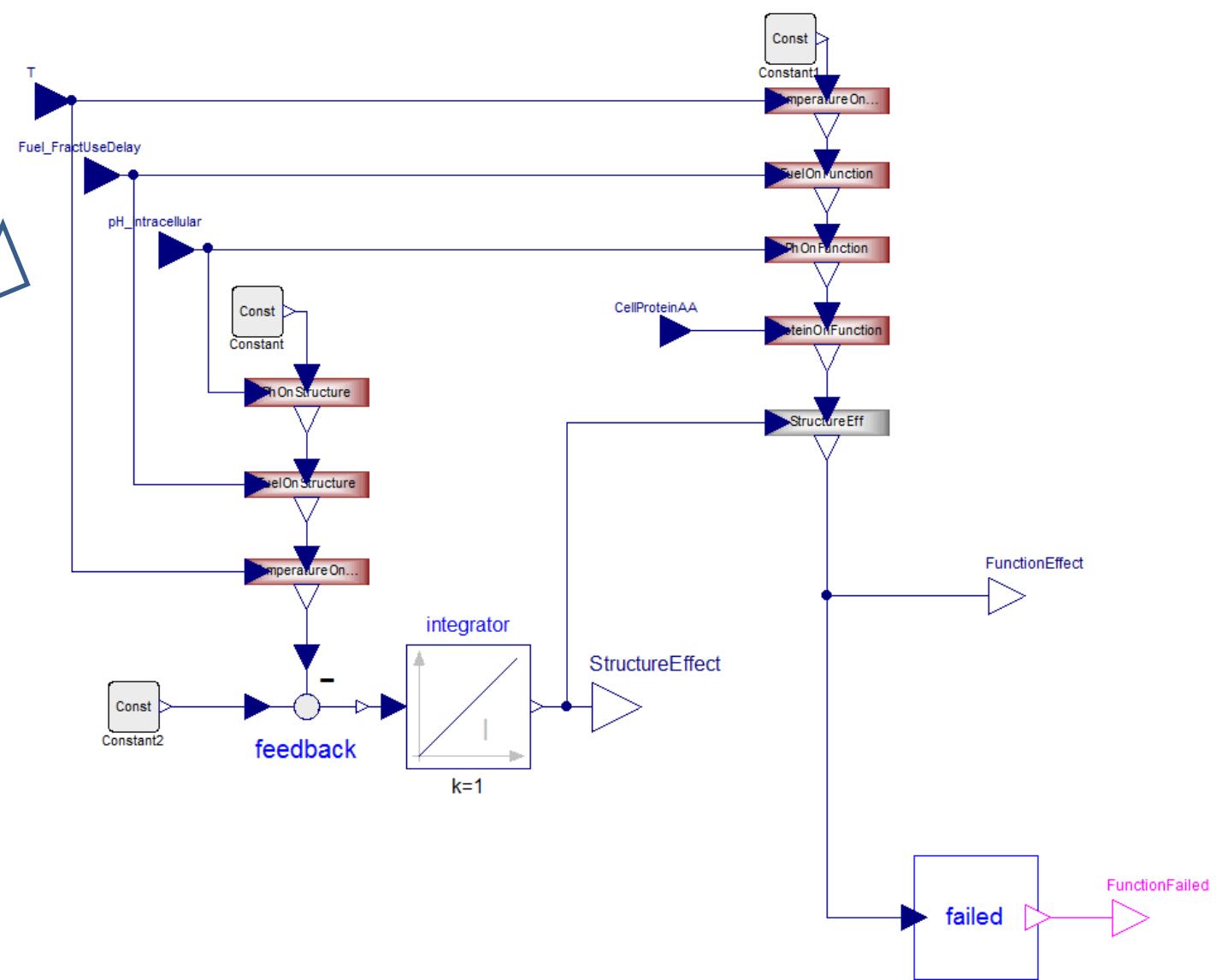
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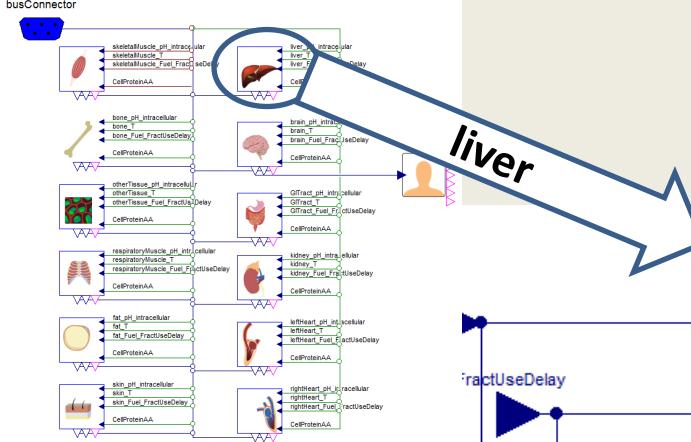




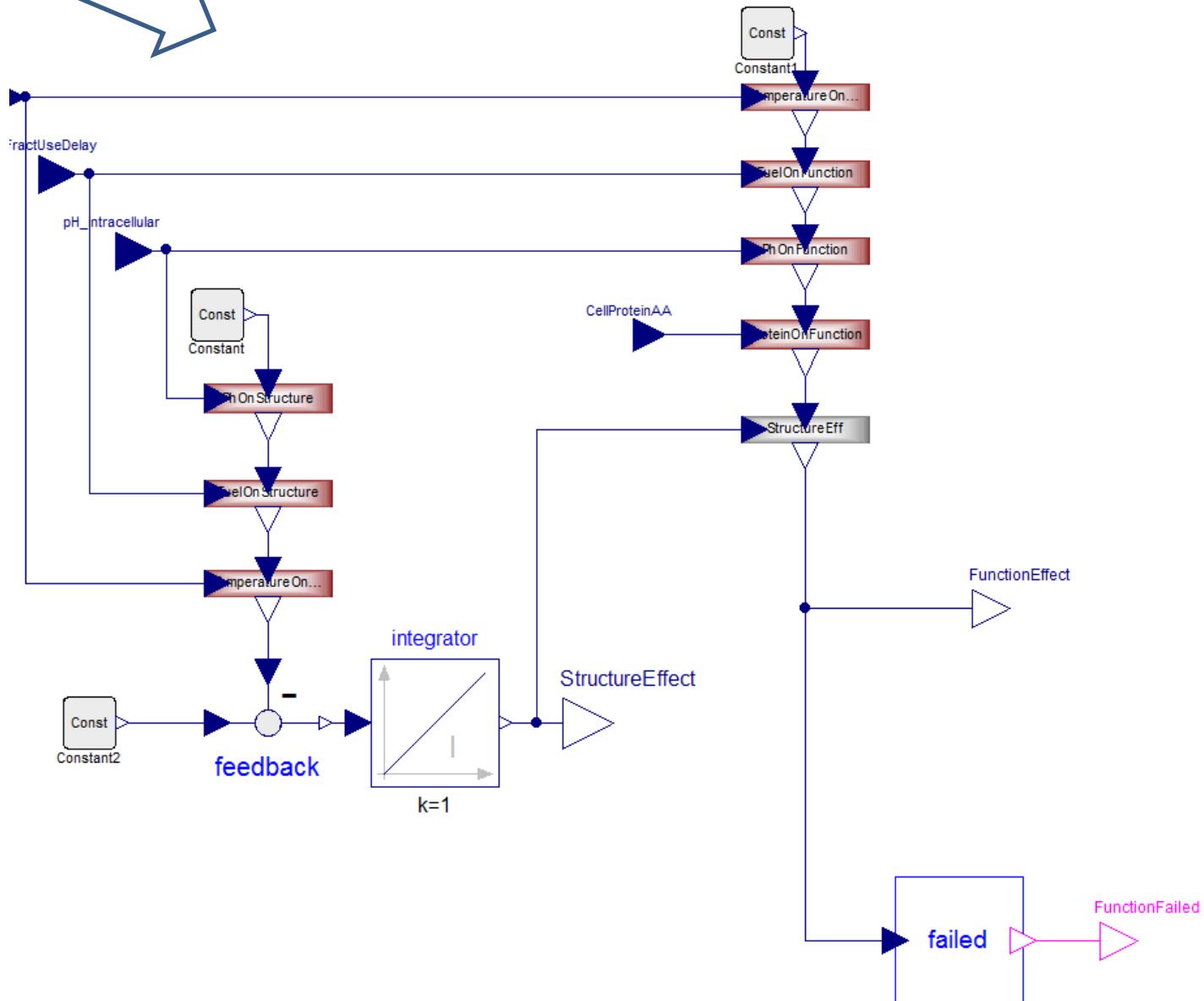


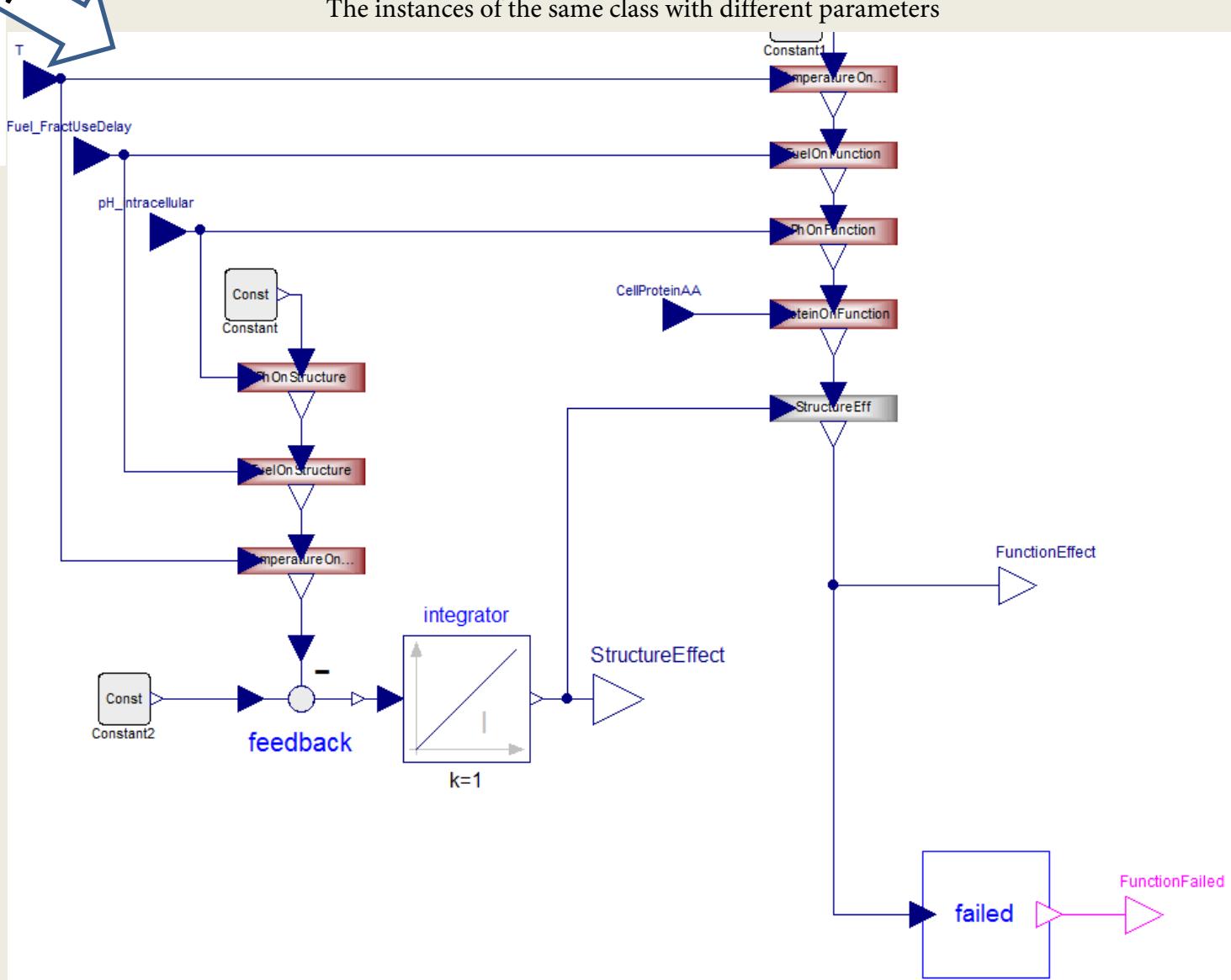
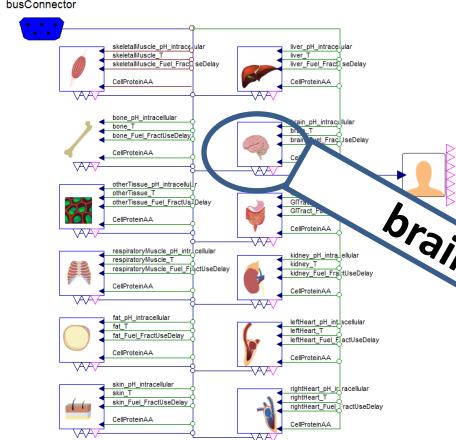
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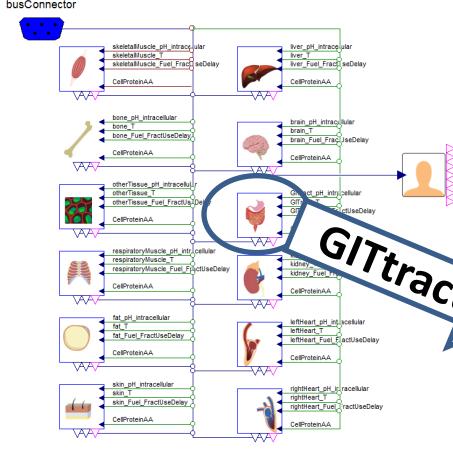




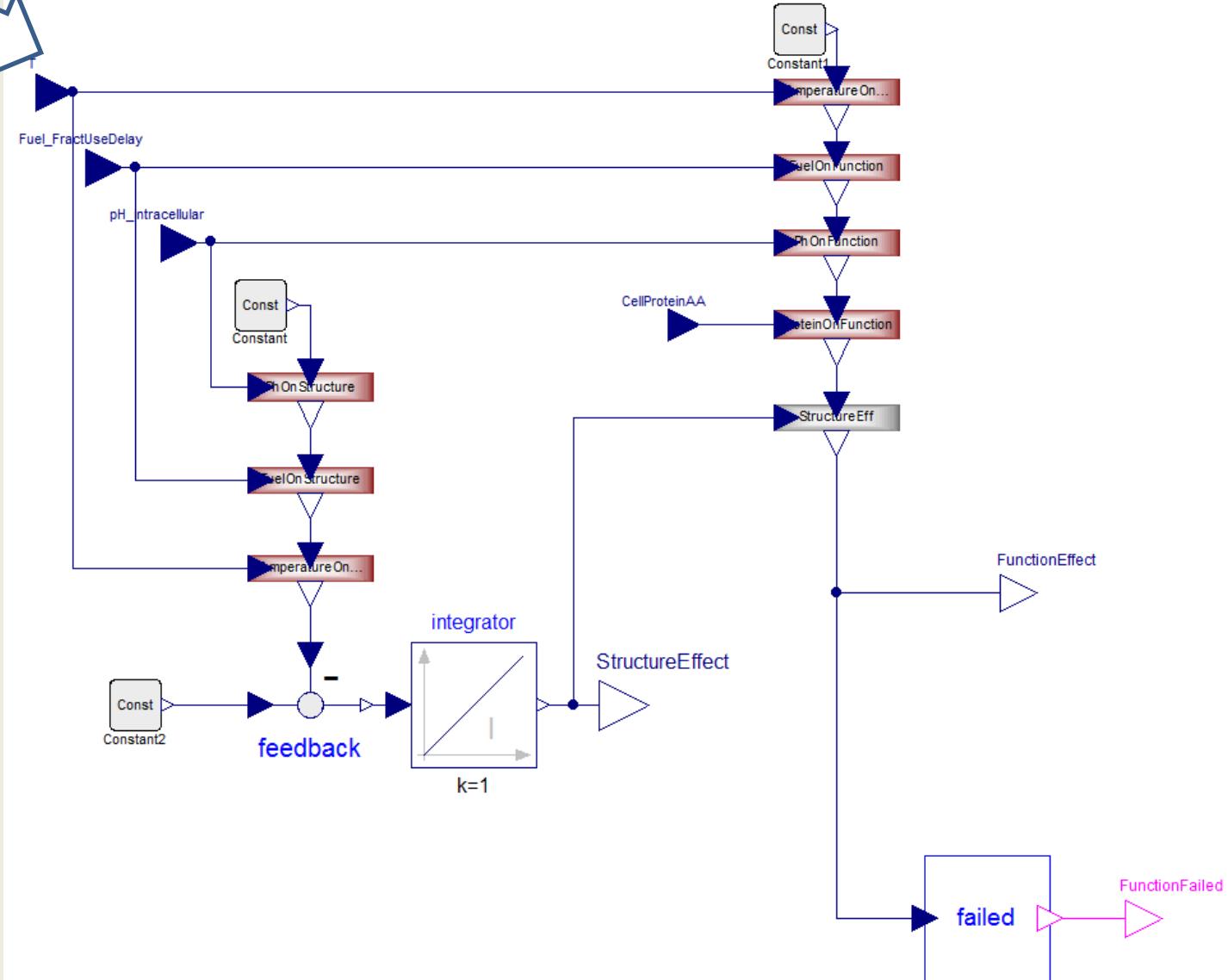
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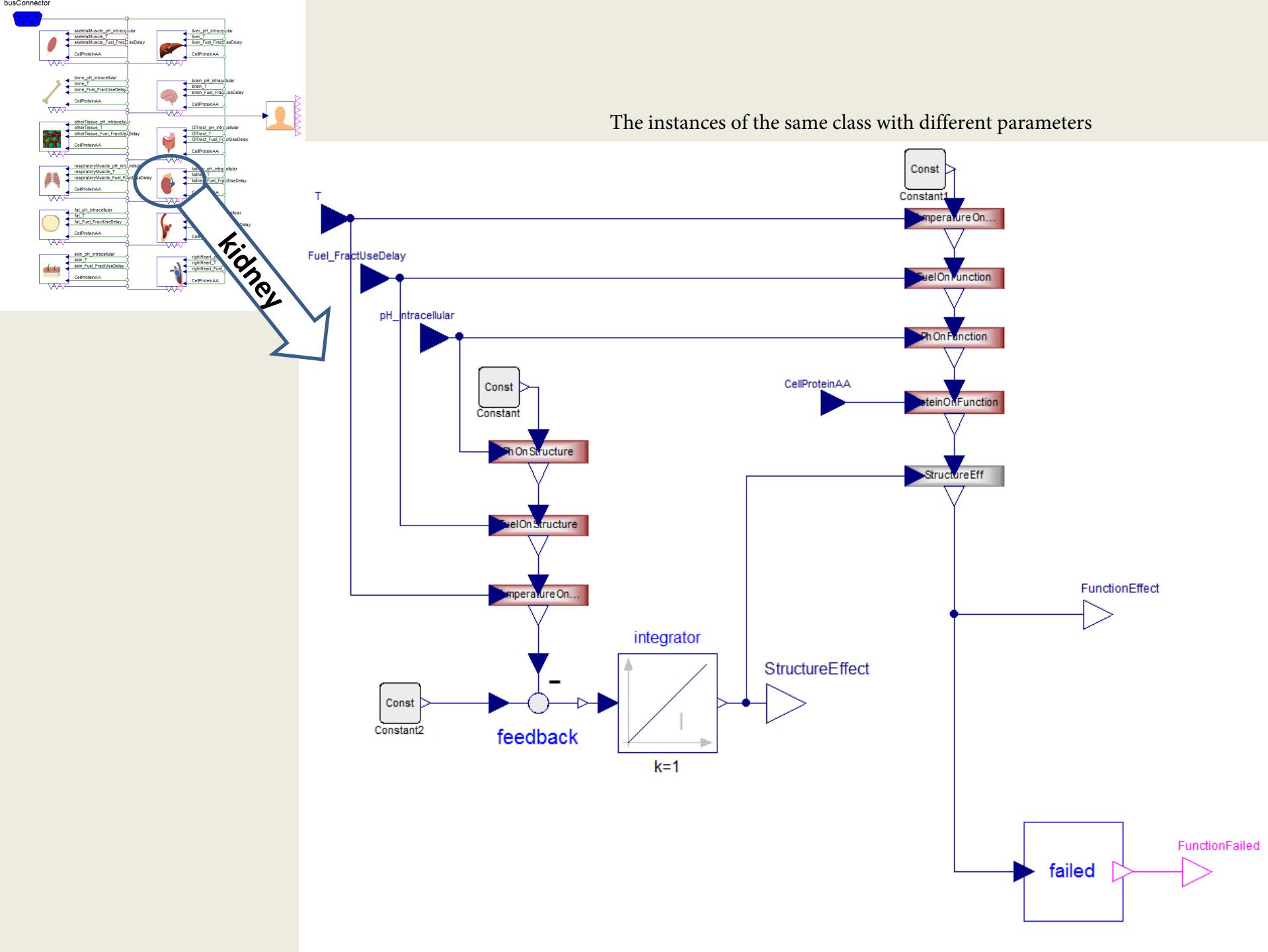


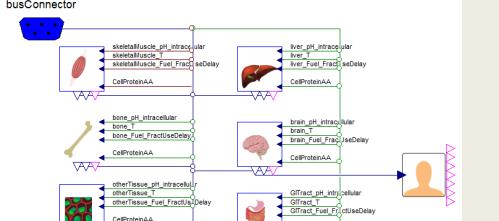




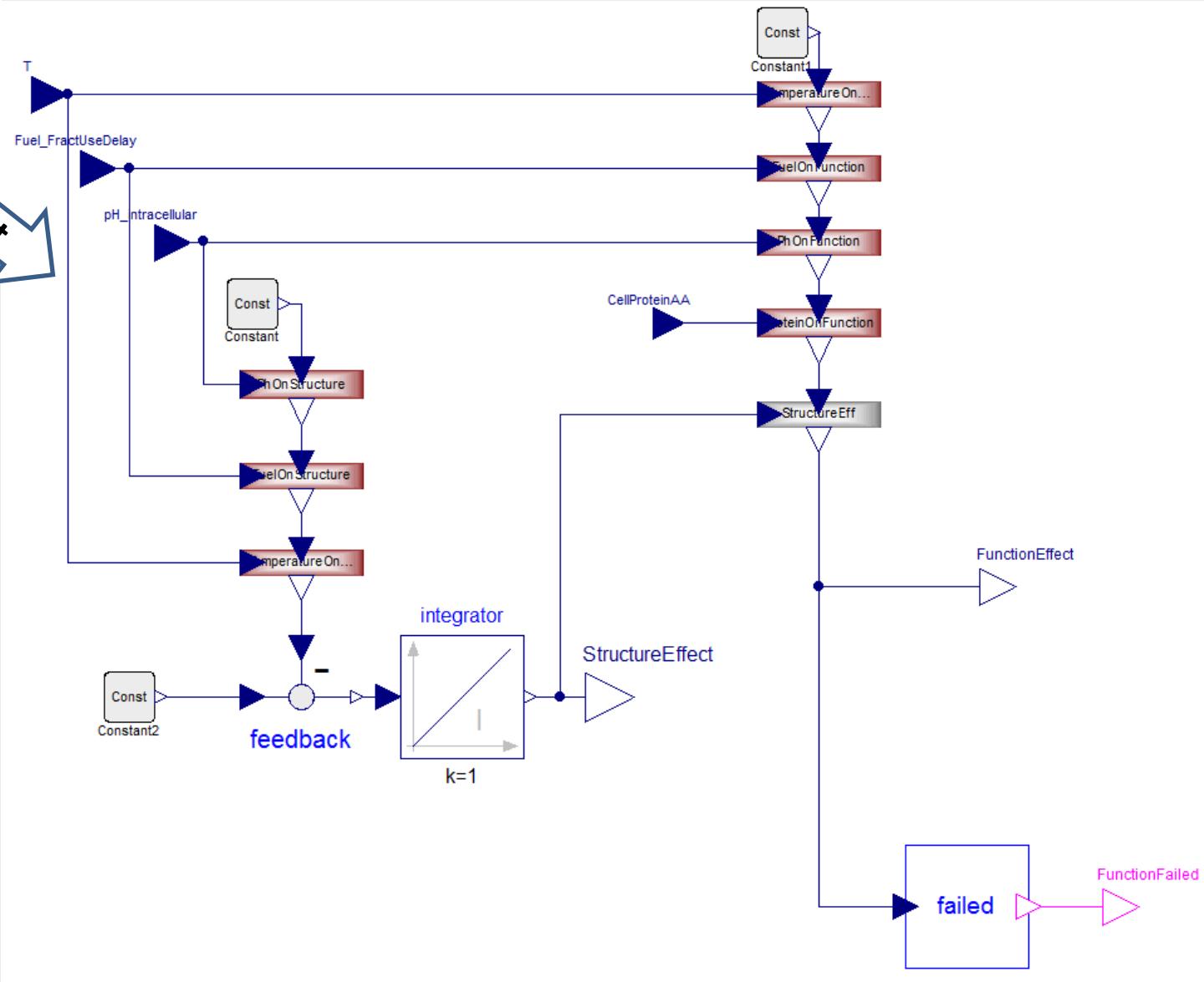
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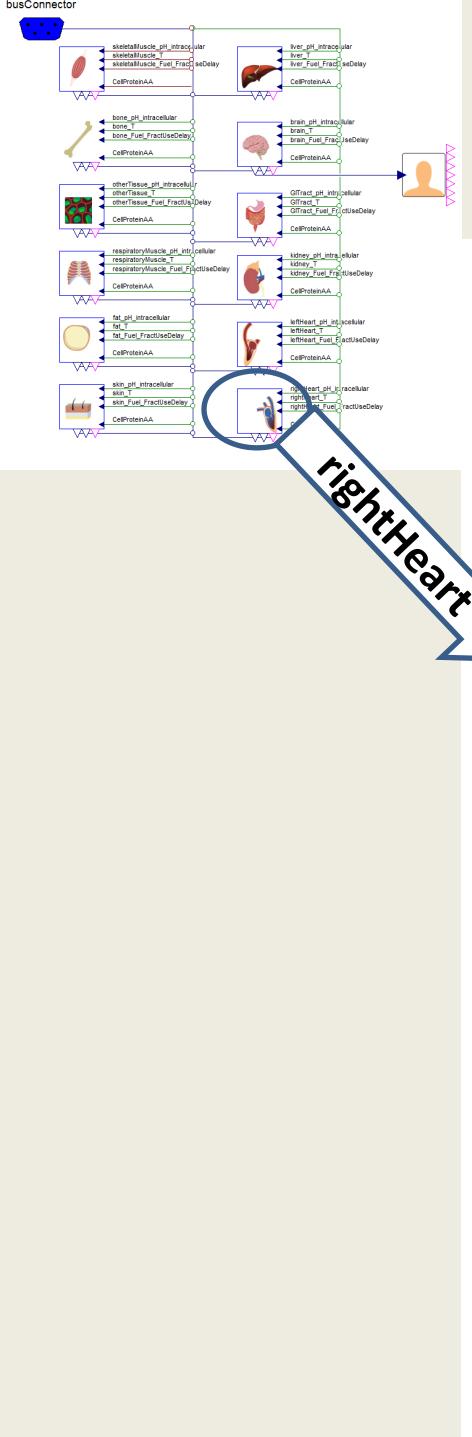






The instances of the same class with different parameters





The instances of the same class with different parameters

