Veronica Falconieri, MA, CMI
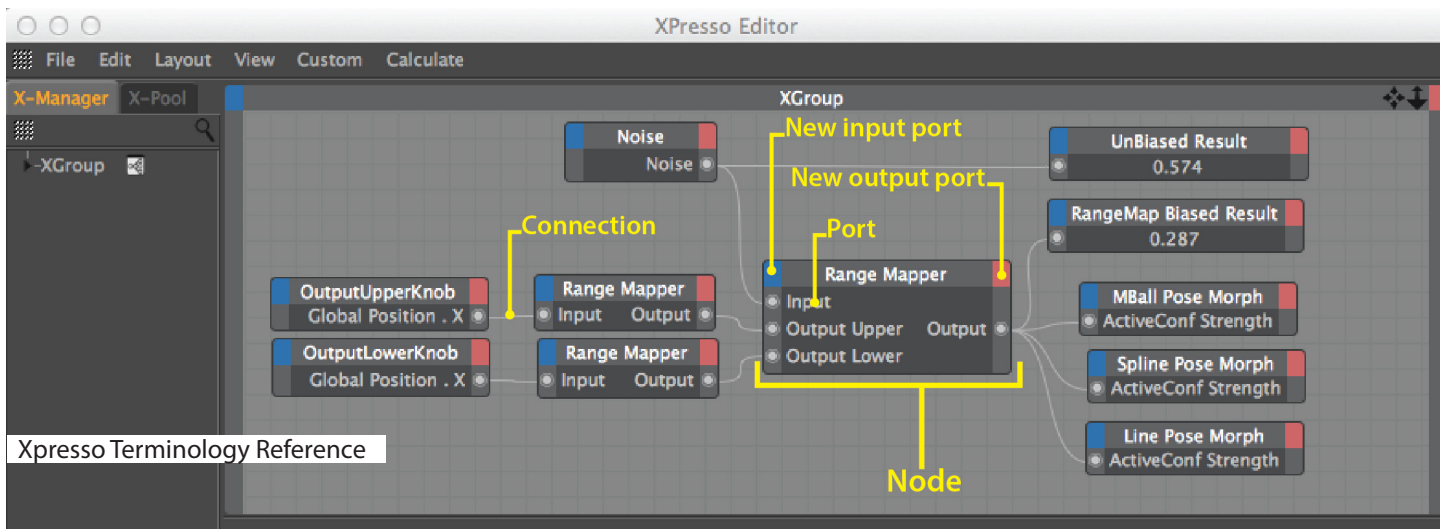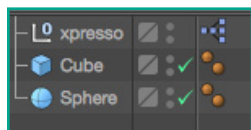*Veronica@FalconieriVisuals.com*

Why Use Xpresso?

Xpresso can be a powerful tool for Cinema4D scene management and animation techniques. The simple principals in this handout can be used to create rigs that allow easy updating of complex scenes and models, automate animation to reduce key framing, and much more.

Xpresso Terminology Reference

Xpresso: The Very Basics

Open a new scene and create the following:
>A cube
>A sphere
>A null renamed "Xpresso"
    with an Xpresso tag

Double click on the Xpresso tag to open the Xpresso editor window.

Drag the cube into the Xpresso editor window

Drag the sphere into the Xpresso editor window

Click the Cube's output menu (red box), select Coordinates > Global Position > Global Position.X

Click the Sphere's input menu (blue box), select Coordinates >Global Position > Global Position.Y

Click and drag from the Cube's new Global position.X output port to the Sphere's Global Position.Y input port. This connects the ports.
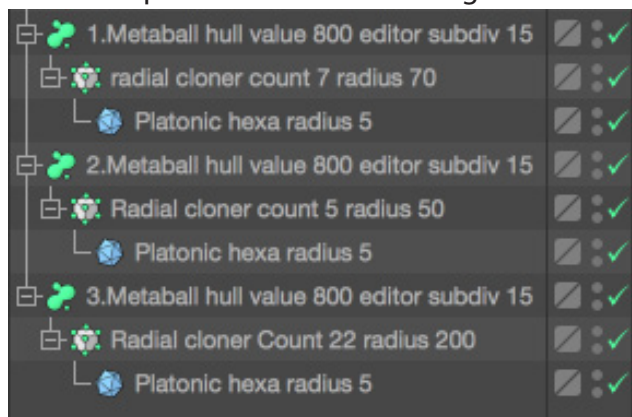

Now the Cube's position X affects the Sphere's position Y. Move the cube along the X-axis to see the effect.
Note that you cannot move the sphere along its Y-axis now, since its Global Position.Y is determined by the Xpresso.

Xpresso: Creating a Metaball Master control

A handy trick for when you have multiple metaball surfaced molecules in a scene and want to control them all in once place instead of updating each one.

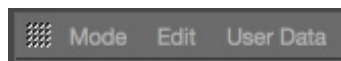Open a scene file with multiple Metaball objects, or create a sample one like the following:

Define User Data

Create a new null. Rename it "Metaball Master".

Select the Metaball Master null.

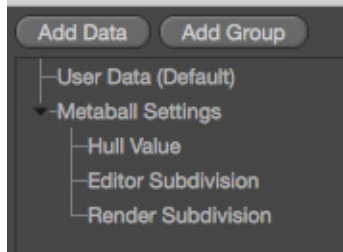In object attributes panel, select User Data > Add User Data

In "Manage User Data" window, click [Add Group]

Rename the new Group "Metaball Settings".

Move the group so it is no longer under User Data (Default) in the hierarchy
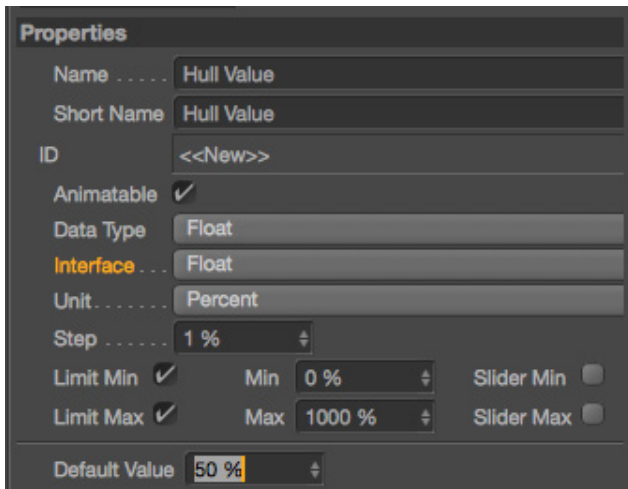
Take the existing Data item and place it under Metaball Settings

Rename the Data item "Hull value"
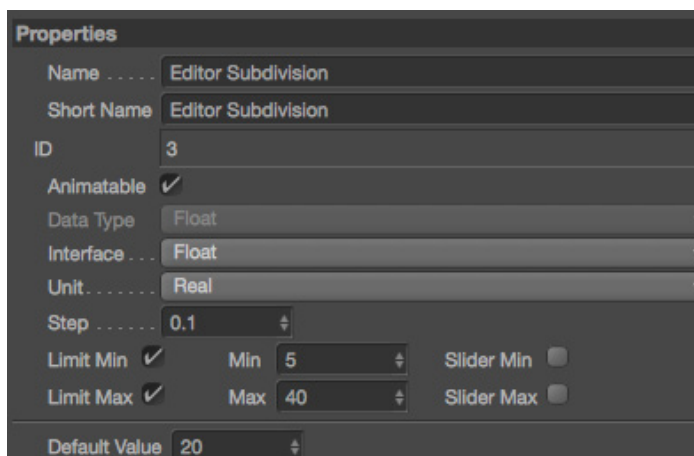>Data Type: Float
>Interface: Float
>Unit: Percent
>Step: 1%
>Limit Min [√], Min 0%
>Limit Max [√], Max 1000%
>Default Value: 50%

User Data Hierarchy

Click [Add Data]. Rename the new Data item "Editor Subdivision".
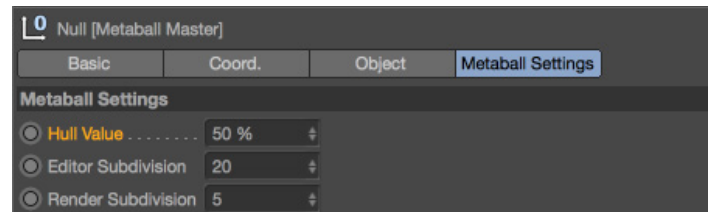>Data Type: Float
>Interface: Float
>Unit: Real
>Step: 0.1
>Limit Min [√], Min 5
This is a good way to prevent accidentally setting the subdivision value very low and crashing your machine.
>Limit Max [√], Max 40
>Default Value: 20

Click [Add Data]. Rename the new Data item "Render Subdivision".
>Data Type: Float
>Interface: Float
>Unit: Real
>Step: 0.1
>Limit Min [√], Min 0.1
>Limit Max [√], Max 40
>Default Value: 5

Your Metaball Master null now has a tab "Metaball Settings" with the 3 data items that you defined above.

Create a Unified Xpresso Metaball Control

Add an Xpresso tag to Metaball Master null.

Drag one metaball objects and the Metaball Master Null into the Xpresso Editor window.

Make output ports for the Metaball Master's "Hull Value", "Editor Subdivision", and "Render Subdivision" and input ports for the same categories for the Metaball object.

Connect Metaball Master's output ports to the respective input ports on the Metaball.
(We're now controlling one metaball object with the Metaball Master)

Create an ObjectList node (Right click > New Node > Xpresso > Iterator > ObjectList)

Select the ObjectList node to bring up its properties panel.

Add your Metaball objects to "Iteration List"

Create an "Object" input on your Metaball object node.

Connect ObjectList's Instance port to the Metaball object node's Object port.
Now all Metaball objects included in the ObjectList's Iteration List will be updated by the Metaball Master controls.