Matt's displacement/normal map tips

For these tips i will assume you have your final model in a sculpting program, you have sculpted large and fine details into your mesh, with 7 subdivision levels.

This technique blends the use of normal mapping and displacement mapping for ultra fine detail, and reasonable render time.

The second revision of these tips will be for use also with a SSS mental ray shader. This first part is utilizing a standard blinn.

- Generate your displacement map, 32 bit gives higher level of detail, but this is usually not necessary if you are also incorporating a normal map into the shading setup. 16 bit works too, but may require more manual tweaking to achieve accurate displacement.
    - Generate the displ map using your level 0 as the target and level 3 as the source.
    - If you are using mudbox, use "subdivision" locate method to reduce chance of artefacts in map.
    - Zbrush and 3d coat are self explanatory, check the documentation.
    - If mental ray is unable to open your 32bit displ map... convert the file to **.map** with Scott Spencers .map file script, or convert to **.exr**

- Export your lowest (or maybe second lowest) level obj, from your sculpting program.
- Import into maya and delete the older mesh left in the scene (your base level geometry is usually changed, if you are only sculpting medium to fine surface detail you may possibly skip this step.)
- Do a pass over the mesh correcting face normals. Soft/hard where necessary.
- Load the Mental Ray plugin **mayatoMR.mll** if it's not already.
- Select your mesh and goto Attribute Editor, goto the shape node tab, scroll down to displacement map tab, and UNTICK **"feature displacement"**
- Goto Window-Rendering Editors- mental ray-Approximation Editor
- In the "**Subdivision**" slot click "**Create**"
- This creates a node attached to the mesh called "**mentalraySubdivApprox1**" this node will smooth our mesh 3 times to match the detail of our generated normal map.
- Turn "**N Subdivisions**" up to 3

Maya/Blinn displ shading

- Create a blinn shader and apply it.
- Create a file node and middle mouse drag it onto the blinn, connect to "displacement map" slot.
    - If you are using Zbrush for your displ map, you need to adjust the colour range of your map. On the file node attributes, you will need to come down to "colour balance" and Alpha Gain to 2.2 and Alpha Offset to -1.1 (this can be adjusted to modify displacement height especially needed if you are using 16bit displacement.

Create an expression on alpha gain ***file1.alphaOffset = -file1.alphaGain /2*** This ensures that the Offset is negative ½ of the gain and created a little slider to tweak the height of the map.

- Generate your Normal Map using level 3 as your target and level 7 as your source
- Connect your normal map into the "**Bump**" slot of your blinn and switch to "**Tangent space normals**"
- Render with mental ray