



Look at my Hair

1.5

OVERVIEW

Look at my Hair is a plugin that allows growing and styling hair and fur on every object that can be loaded in Studio 4.6.

The hair model produced can be exported to Studio as **RenderMan curves**, **FIBERHAIR** or as a textured **Alias Wavefront .obj files collection**, which makes it possible to use the hair model on every application and render engine.

It's also possible to replace hairs with instances of available props.

The basic workflow can be resumed in the following steps:

- Import a model from Studio
- Define follicles
- Grow and style hair
- Optionally define density maps and apply effects
- Export

We are going to explore in detail the whole workflow in the next chapters.

NEW FEATURES IN 1.5

- **FIBERHAIR:** Look at my Hair will now create optimized FiberHair for rendering in Poser, Vue, Maya, LuxRender, Octane Standalone, and other external packages. Here are the peculiar features offered by FIBERHAIR:
 - FIBERHAIR allows the user to apply compression to the fibers to control the size of the exported hairs.
 - Look at my Hair will include the UV.s and custom textures with the FiberHairs, providing a complete asset to be used with external packages.
 - FiberHairs are useful for rendering in LuxRender via Reality or Luxus via DAZ Studio, or for writing out to DAZ Studio for export with a scene that is intended for rendering in another external package.
 - Look at my Hair FiberHairs are similar in output to the features in other \$600.00+ packages... with advantages – price, ease of use, and unparalleled support.
 - For maximum compatibility, Look at my Hair provides the option to write the FiberHairs to .OBJ format for loading into the package of your choice.
- **DAZ Studio Interface Connection:** The same pane that has been available in the FREE Look at my Hair Player is now available in the Full Plugin. Load Presets and quickly change settings in the scene without opening the full editor.
- **Operate on Items Directly in the Scene:** Add Look at my Hair assets to Figures/Props just like adding Clothes, Textures, or Shaders. There is no need to enter the editor just because the position, pose, or morphs changed. Even changing a Genesis figure from Michael to Victoria can be accomplished without intervention by the main interface.
- **Multi-Figure:** Apply Look at my Hair assets to several Figures/Props in a scene.
- **Switch Figures in the Editor:** Switch to any item in the scene for furring without exiting. The last pose and camera position used is maintained to allow for easy manipulation.
- **Interactive Sync:** Look at my Hair Asset's guides will automatically follow the movement, poses, and morphs of the figure in the DAZ Studio Viewport.
- **Interactive Viewport:** Look at my Hair's Creation/Edit Viewport will automatically reflect changes in the DAZ Studio scene without user intervention.
- **Human Hair Shader:** The same realistic Human Hair Shading technology found in feature films is now yours for use with Look at my Hair assets in DAZ Studio.
- **GeoGrafting Support:** Supports most features of DAZ Studio's GeoGrafting system. This includes posing for those grafts that are rigged – tails, wings, etc.
- **Adjustable Hair Control Point Locking:** Have part of that hair exactly where you want it? Set it to stay. Do you need it to adjust just a little? The lock can be set to resist movement instead of stopping it altogether.
- **Enhanced Texture Control:** Set your Look at my Hair hairs to absorb the underlying textures, your own custom textures... OR, turn textures off and go TECHNICOLOR! Want Anime Style Pink fur/hair? Go for it!

- **New floor plane in the Look at my Hair Viewport:** A translucent floor has been added to show where the “ground” is. Now when you are creating that hair for your Rapunzel, you know when you've reached the floor. The floor can be turned off for those who find it distracting.
- **Direct Support for SubSurface Scattering:** Including the Age of Armour SSS product in the store.
- **.DUF support:** Save figures with the Look at my Hair assets already applied! On loading, the hair/fur will already be there and “ready-to-render”.
- **Custom saving/loading of Density Maps:** Use your favorite painting package in conjunction with Look at my Hair's built-in 3D Density Painter.
- **New Creation Toolbar:** Visual Selection of tools on our new toolbar in addition to keyboard shortcuts that customers have learned.
- **Multiple Control Point Setting:** Need a section of hair to be more detailed? 1.07 allows for ShaveGroup independent control points. From 10 to over 100 control points for specialized control of your creations
- **Undo/Redo for Styling:** Available right from the interface toolbar.
- **Preview Hairs:** See an approximation of the actual hair without rendering. Switch from showing only the guides (for speed), all the way up to the full number of rendered hairs -- All in the DS Viewport.
- **Spot Rendering:** Full support of the Spot Render feature of DAZ Studio. See the actual rendered fur/hairs when using the DAZ Studio Spot Rendering mode.
- **High-Resolution Mesh Rendering:** Set the figures to the High-Resolution Mesh for final Rendering.
- **Hair Counts Settings Presets:** We've added real-life presets to the Look at my Hair pane to make your renders more real. Using Professional Anatomical and Biological References, we've created hair counts presets that match actual human hair color growths.
- **Hair Colors Settings Presets:** Also included are hair color presets that realistically match human hair colors from roots to tips. From Midnight Black to Platinum Blonde, over 20 color presets are available for selection. Each can be tweaked to match your distinct tastes.
- **Much more than just Fur/Hair:** With enhanced instancing, Look at my Hair is the only solution for adding arbitrary objects to ANY surface. Whether it is condensation on a window pane, sweat on the forehead or skin of your character, leaves on a tree monster, mold on the walls of a dungeon, or full featured grasses on the plains, Look at my Hair allows it. To top it off, Look at my Hair uses instances to lower memory use.
- **New Tools For Creation:**
 - Lasso Selection for both guides and follicles
 - Lasso Scissors
 - Sliders for controlling the brush size and sensitivity/intensity
 - Mirror Guides
 - Select All/Invert selection
 - Rotate Feature
 - Guidehair display color and width changeable
- Large and growing library of Presets for free and purchase in the DAZ store...

REQUIREMENTS AND INSTALLATION

Note: if you have previously installed the LAMH Free Player, you need to uninstall it to get the full version working correctly.

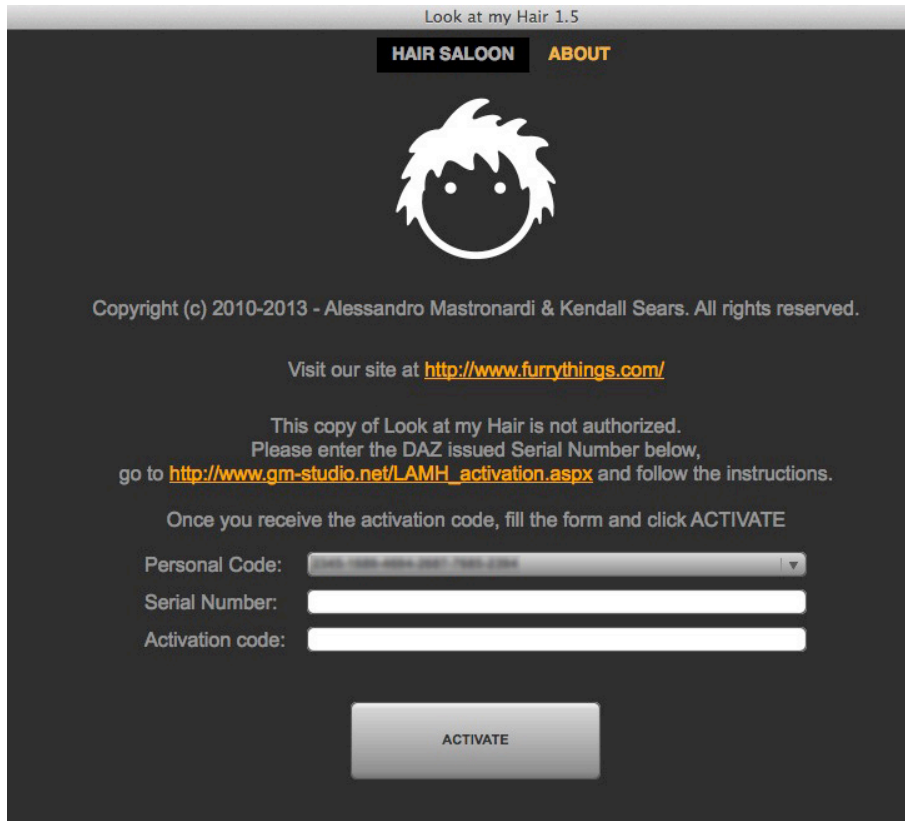


Figure 1: the activation window

Look at my Hair runs on Studio 4.6 for Windows 32 and 64-bit architecture (64-bit highly recommended for complex hair systems) and OSX 64 bit. Minimum system memory required is 2GB.

When you buy Look at my Hair, you will need to use the DAZ Install Manager or download the proper installer version (again, Windows 32 or 64 bit, or OSX), and check you DAZ Account 'My Serial Numbers' page to find your Look at my Hair **Serial Number**. Install the plugin, execute it from the Studio "**New Look at my Hair Object**" menu item, and you'll get the activation window as displayed in Figure 1.

Copy the **Personal Code** prompted there, and point your browser at: http://www.gm-studio.net/LAMH_activation.aspx There, enter the **Personal Code** and the **Serial Number** and click "Activate" to get your Activation Code.

Back to Look at my Hair, enter the **Serial**, the **Activation Code**, click **ACTIVATE** and the process is completed.

Look at my Hair is now ready to be used! If you need support please contact us at <mailto:devel@look-at-my-hair.com>.

KEYBOARD AND MOUSE REFERENCE

<SPACEBAR>: Toggles the heads up display on. Release it to toggle the display off.

ALL modes:

<LMB> on canvas and drag to rotate the camera.

<RMB> and drag to pan the camera.

<WHEEL> to zoom in or out.

FOLLICLE mode:

<LMB> on model: triggers follicle on (or off if **<SHIFT>** is pressed). Drag the mouse to trigger more follicles on the fly.

<ALT><LMB>: lasso marquee tool. Drag the mouse to define the area; when released all the follicles in the area will be selected (or deselected if **<SHIFT>** is pressed).

STYLING mode:

<LMB> and drag to move selected hair points.

<SHIFT><LMB> to cut selected hair points.

<CTRL><LMB> and drag to scale up or down selected hair points.

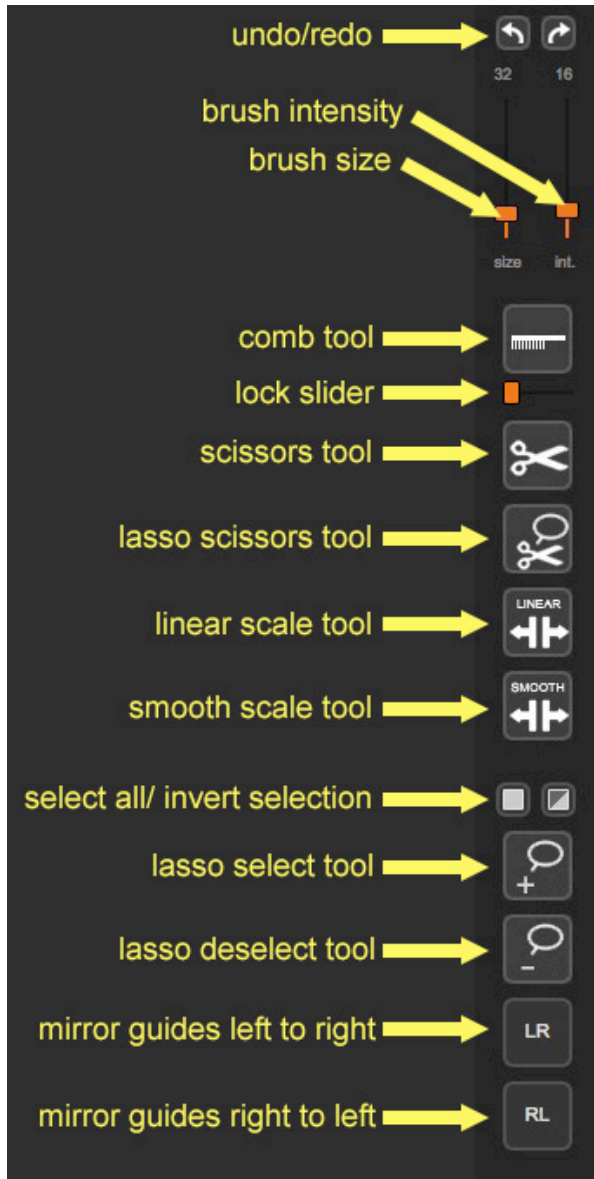
<ALT><LMB>: lasso marquee tool. Drag the mouse to define the area; when released all the guide hairs in the area will be selected (or deselected if **<SHIFT>** is pressed).

PAINT mode:

<LMB> and drag to paint density on.

<SHIFT><LMB> and drag to paint density off.

VERTICAL TOOLBAR CONTROLS



Starting from this release, Look at my Hair provides a new vertical toolbar that you can use to quickly access most common tool and functions. You can commence undo/redo levels, easily adjust brush intensity and size, enable combo, locking, scissors, scale tools, select all guides, invert guide selection, toggle the lasso selection tools and mirror guides from left to right or vice versa.

We encourage all users to get familiar using the vertical toolbar controls as they will save time and come really handy during styling sessions.

WINDOW PANE

One of the new features in 1.5 is the integration of a Look at my Hair Pane that will instantly and quickly allow you to attach presets and perform a wide range of settings and tweaks to hair parameters.

It's very convenient to have the Look at my Hair Pane docked, so you may want to activate it (menu Window->Panels->Look at my Hair), drag and dock it into one of the DAZ Studio side panes.

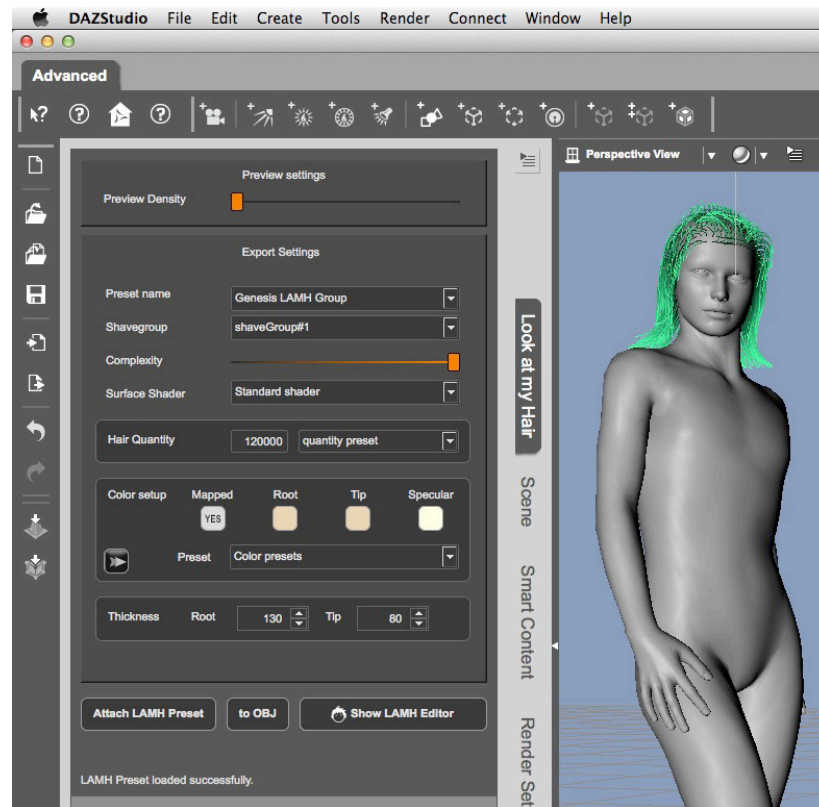


Figure 2: the Look at my Hair Pane

As you can see from the image, the Look at my Hair Pane has been successfully docked and used to load a Genesis hair preset. A quick overview of the pane tells you how many different settings you can tweak and change, like the shader type to use upon render, hair quantity (you can type it or choose human predefined presets), root/tip/specular colors, apply a human color preset and change root/tip width.

The Look at my Hair pane buttons at the bottom allow to attach a different hair preset, export directly to OBJ, or trigger the full interface.

LOAD MODELS FROM STUDIO

One of most striking features of this release is the **multifigure environment**. The interface is in fact capable of handling and styling multiple models by simply switching those.

A quick example: start Studio, and load a DAZ Horse2, a DAZ Big Cats2, and Genesis.

Now start the Look at my Hair interface, and click the import button: the current model listed in the combo box, Genesis in this case, will be made available in the Look at my Hair canvas.

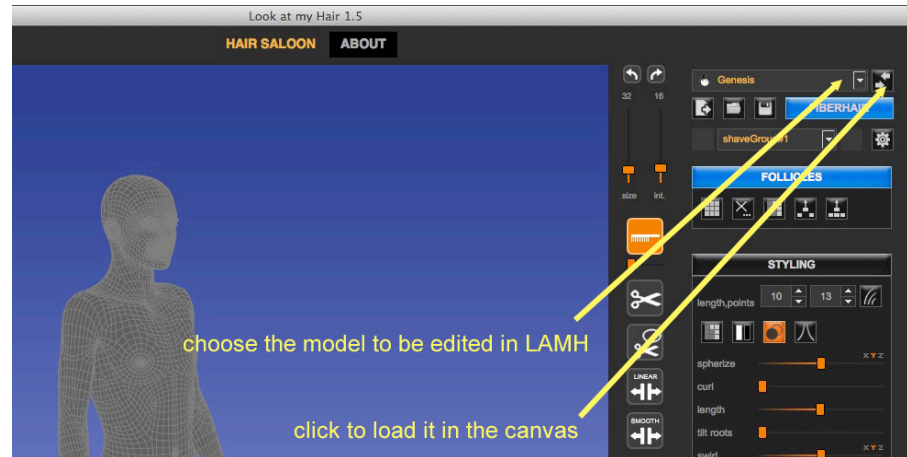


Figure 3: load the model chosen from the combo box selector

Say you pick follicles, grow and style hairs on Genesis, and you want to work to another figure: nothing easier than that!

Just select, for example, the Big Cat figure from the combo box and click the import button: the model is now loaded and active in the Look at my Hair canvas.

You want to get back to what you were doing on Genesis? Select Genesis again, click the import button, and done!

So you understand how powerful the multifigure environment is: you can edit all the objects available in your DAZ Studio scene by simply switching from one to another.

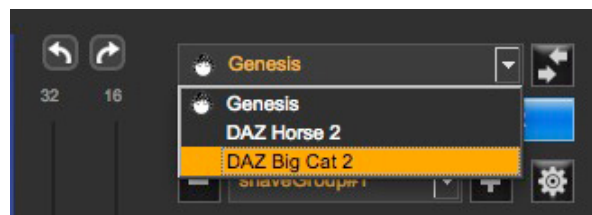


Figure 4: pick the Big Cat and click the import button

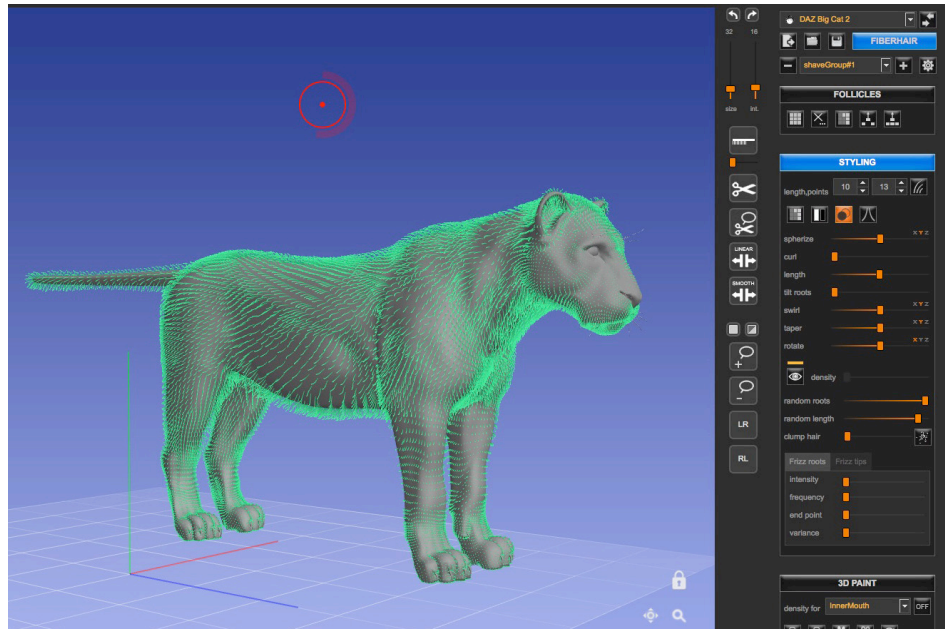


Figure 5: Big Cat is now the active Look at my Hair model and can be styled

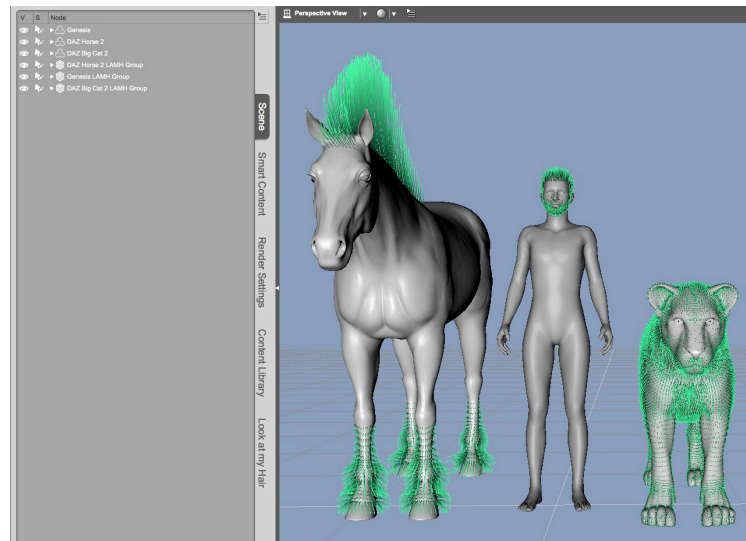


Figure 6: DAZ Studio scene after each Look at my Hair hair model has been exported. Multifigure yeah!

PICKING FOLLICLES

“Picking follicles” means selecting the model polygons that will be covered with hair later.

The process is straightforward: click the left mouse button directly on the model, or use the lasso tool to pick larger areas at once. Be sure to read the “**Keyboard and mouse reference**” at page 6 to acknowledge all the FOLLICLE mode options.

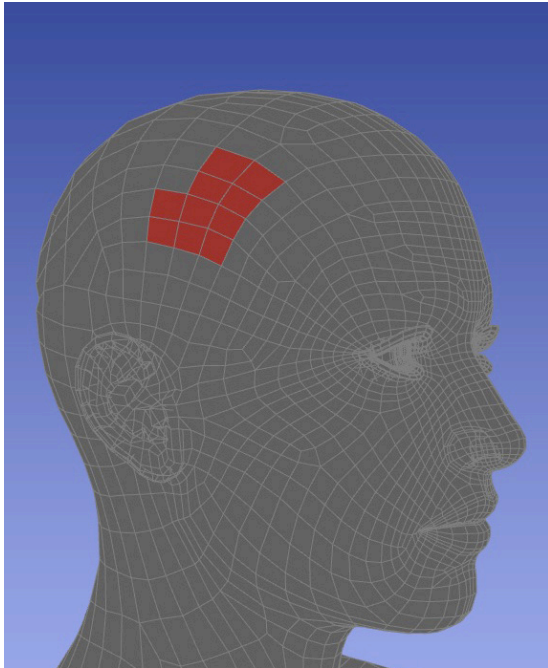


Figure 7: click to pick single follicles

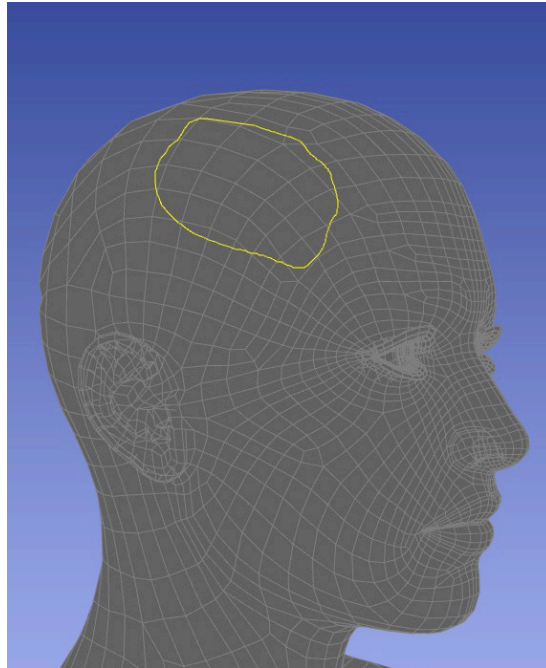


Figure 8: lasso tool in action

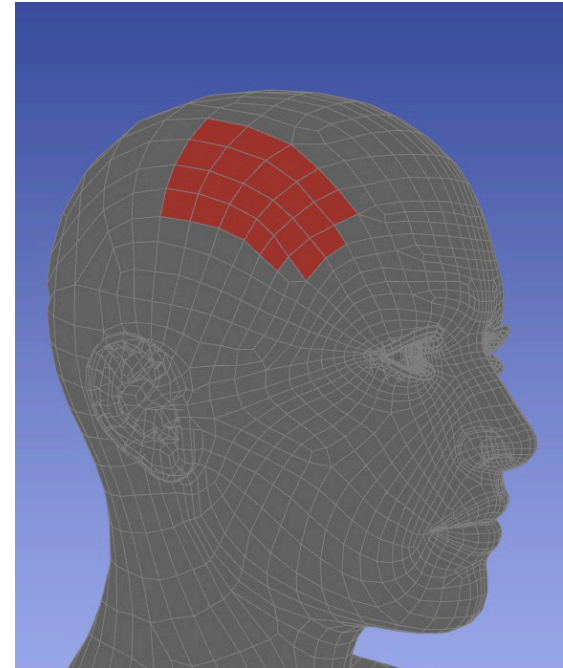


Figure 9: follicles picked with the lasso

Note: using the lasso tool is a very quick way to add or remove follicles, while single clicks are usually helpful to refine the selection.

There is another interesting way to quickly select follicles that belong to a specific surface, and it is through the “**select by surface**” tool.

In the following example I selected all the follicles belonging to the “SkinFace” and “SkinBody” surfaces with two single clicks.

As you notice, I might quickly go on and add or remove follicles belonging to other available surfaces.

This comes extremely handy especially with animal figures, so that you can just define the follicles for the whole body without having to manually pick them. Also, the second column allows hiding some surfaces that may occlude the underlying geometry, so that you can better see the parts where you are working on.

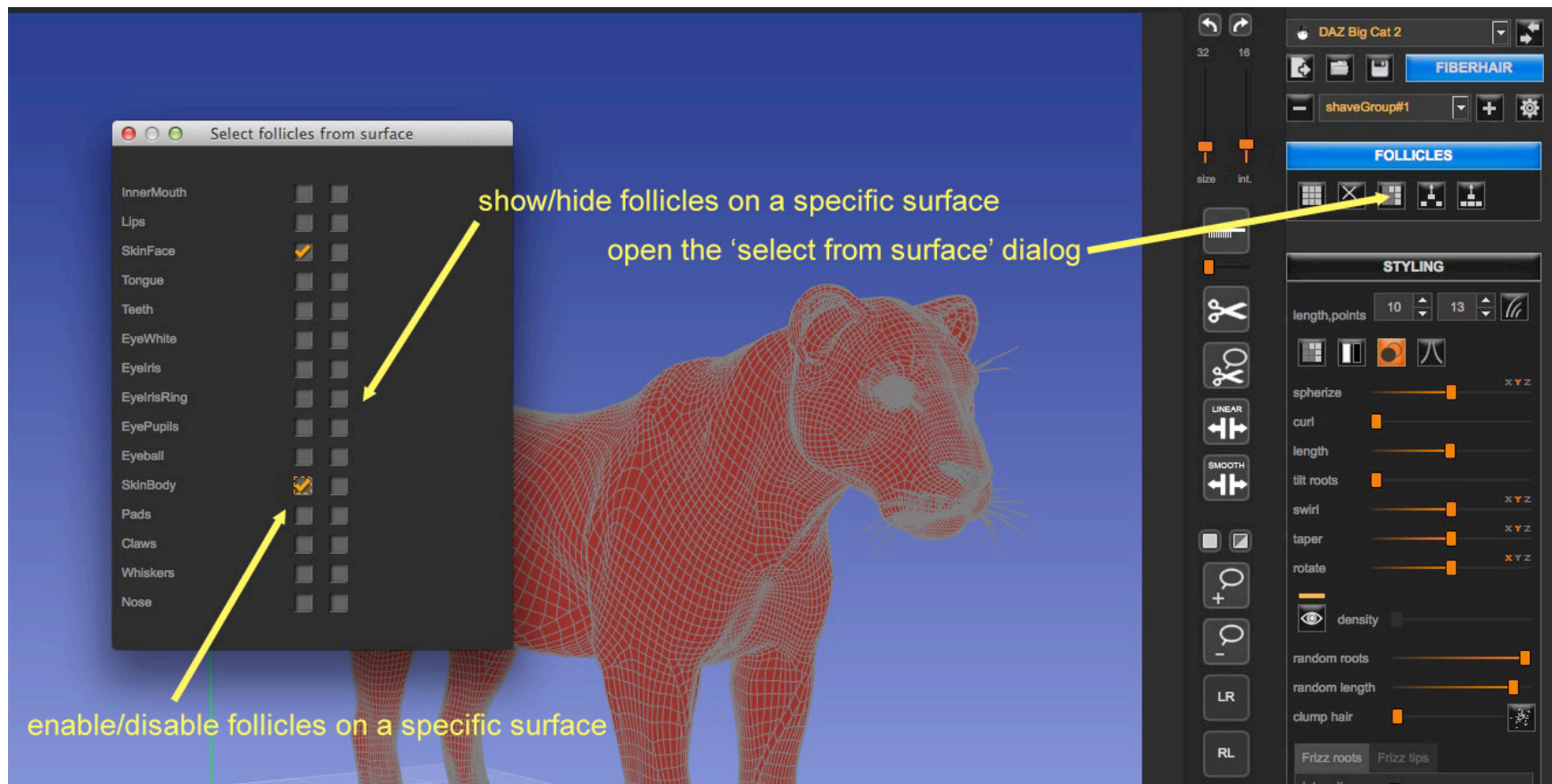


Figure 10: use the "select follicles by surface" to speed up the process

Taking a closer look at the Follicles toolbox, there are other buttons that deserve some attention.

The first button will add all the follicles, the second button will erase all the follicles, the third button will trigger the "Follicles by surface setup" dialog as explained above.

The fourth and fifth button allow respectively splitting and duplicating a follicle selection to a new shave group, a very useful tool in some situations where you want to create, for example, parted hair, or simply cut and paste follicle and guide hair to a new group.



Figure 11: Follicles actions from left to right: add all, delete all, select by surface, split group, duplicate group

STYLING CONTROLS

Styling hair is one of the most crucial and important phases of the workflow: the final result is strictly related to the quality of the hair model. I will first start by describing the tools that belong to the styling section, and later I will share some hints about how to efficiently style hair.



Figure 12: grow guide hair controls

Note: you can change both guides width and color by right clicking the grow guides button and choosing the proper option from the contextual menu.

Once you have defined the follicles, in order to create the guide hair you just need to enter the desired length (expressed in centimeters), the number of points used for each guide (13 is the default and works well for most applications; for very short fur, you may want to reduce it down to 6,7 points; for longer hairs, increase it up to 25-30 points; it's not recommended to use less than 5 points) and click the **'grow guide hair'** button. In a few instants you will see the hair grow on the model (see Figure 13) and you are ready to start styling them.

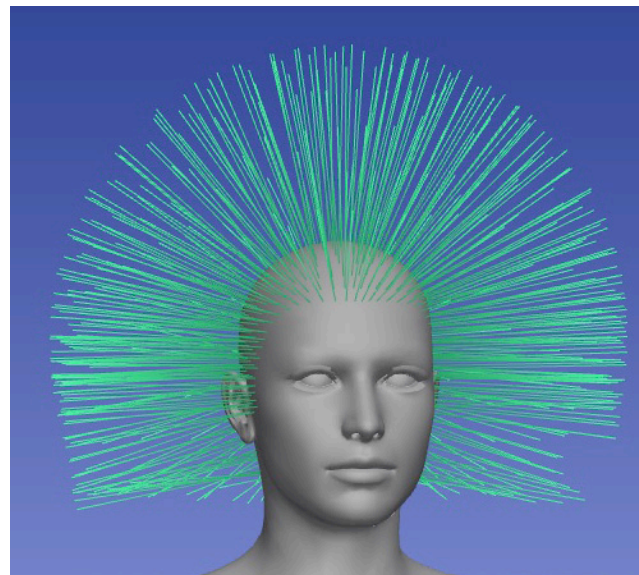
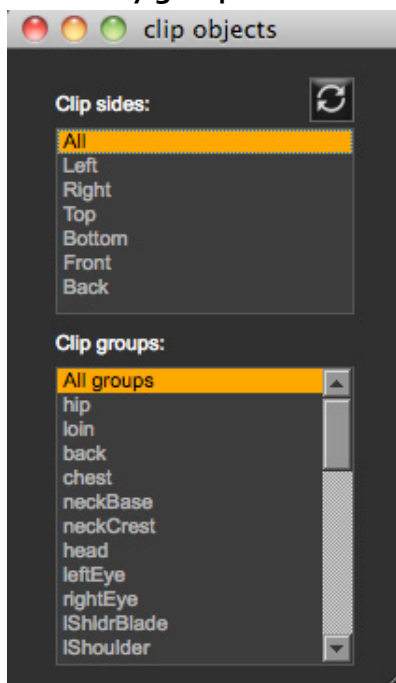


Figure 13: Guide hair just grown

As with follicles, you may select/deselect guides using the lasso tool, which is very efficient. You can trigger the lasso selection tool using the button on the vertical toolbar (see Page 7) or holding the <ALT> key and dragging the mouse will select the hair within the marquee area, or deselect if also the <SHIFT> key is held.

Select by groups



An important feature is the possibility to enable and work only on a specific group of hair. Clicking the “**select by groups**” button will popup a selection dialog (see figure on the left), which allows restricting hair selection to a specific group or side of the model. You may, for example, enable only the hair on the left side, or the ones that belong to the hair, torso, or else.

This way it will be easier to focus styling on a restricted selection of hair and avoid potential and unwanted modifications on other hair groups.

To note that it’s also possible to perform a custom selection using the marquee tool: as mentioned in the “**Keyboard and mouse reference**”, holding the <ALT> key and dragging the mouse will select the hair within the marquee area, or deselect if also the <SHIFT> key is held.

Stereo edit mode

Enabling stereo mode allows replicating the styling done on one side of the model automatically on the opposite side. If you style hair on the left side of a figure, if the model is symmetrical, changes will be applied automatically on the right side as well.

Toggle occlusion editing

This setting is enabled by default and prevents the modification of hair points occluded by the model geometry.

It’s a great help to avoid accidental or unknowingly editing on hair that are not visible because of the occlusion.

However, in some occasions, it might be convenient to turn it off.

Clump tool

This tool allows clumping the guide hair point within the brush area, as displayed in the image below.

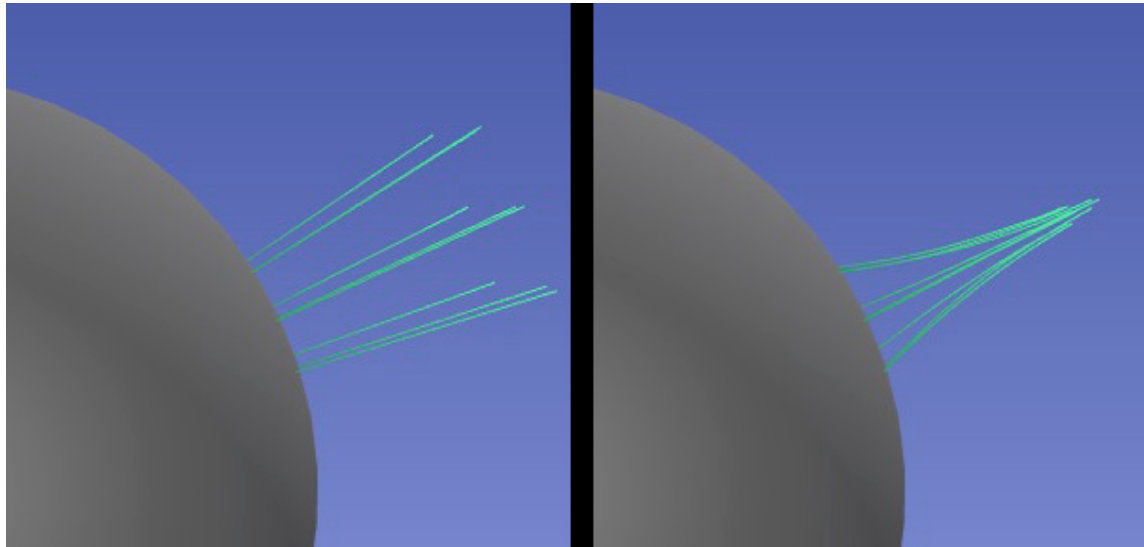


Figure 14: effect of the clump tool on a group of guide hair

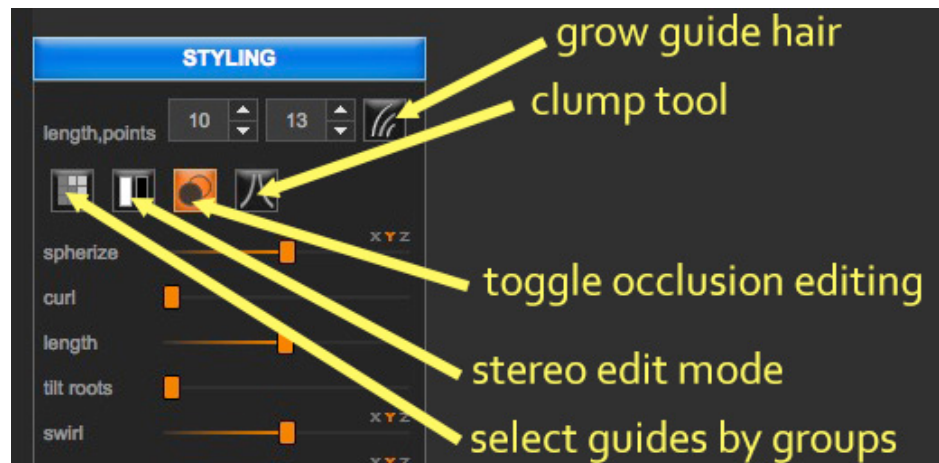


Figure 15: styling controls

Deformers

Before even starting to comb and style hair, it's advisable to give them an initial shape that conforms approximately to the model.

In Figure 10, you see how hair look on Genesis at first: by using the "spherize", "tilt" and "taper" deformers I can quickly shape the hair giving a proper direction and initial styling (note that some deformers even allow to choose one or more directional axes).

This makes things much easier for later styling action.

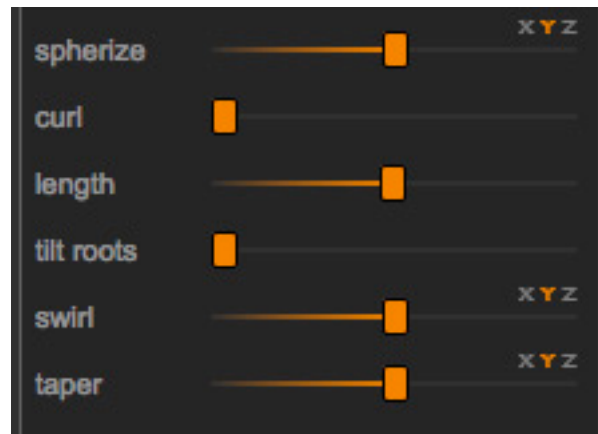


Figure 16: the deformers currently available

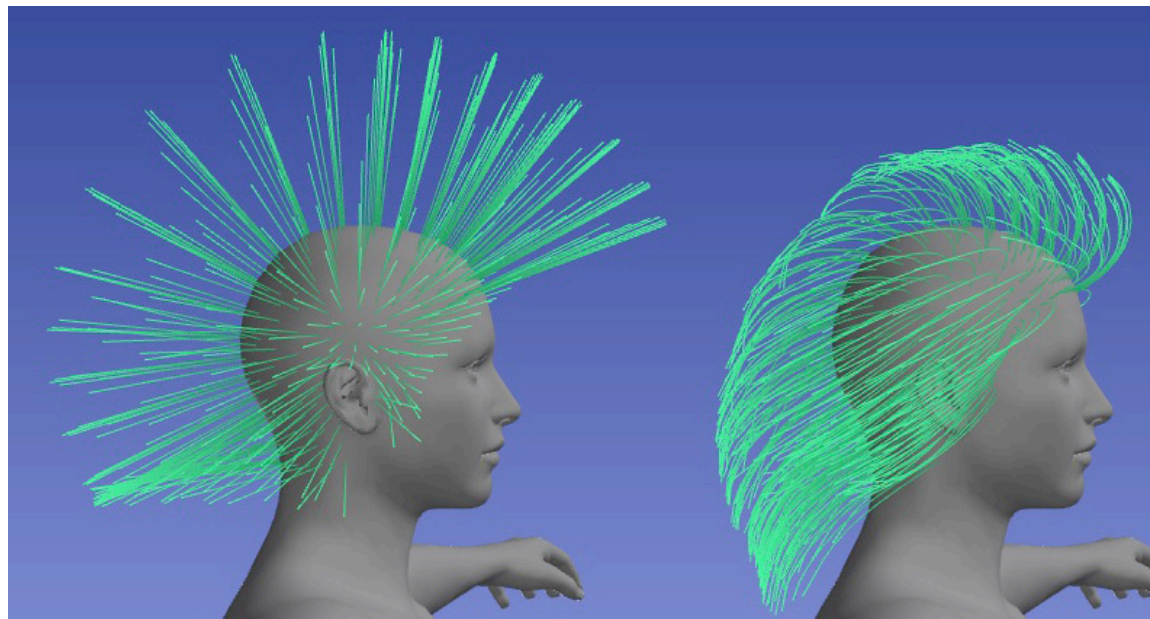
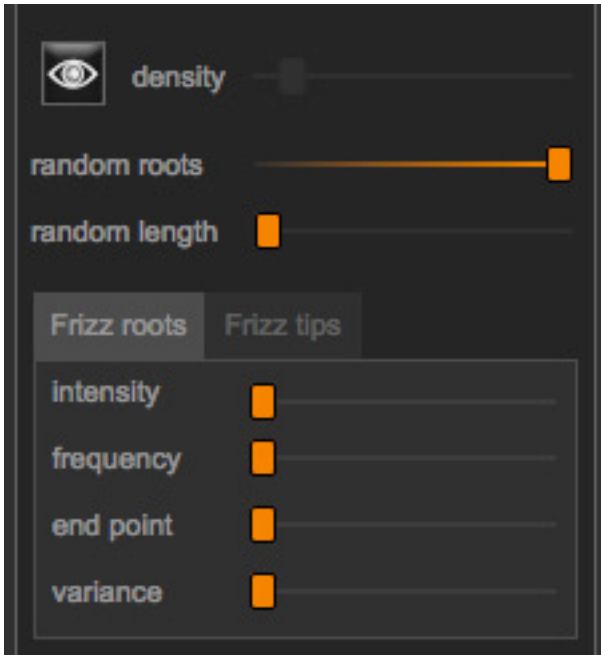


Figure 17: deformers applied on initial Genesis guides allow to give already a good hair style

The next series of controls available in the styling section are not applying to the guides but will affect the final hair instead (i.e. the ones that



will be exported).

Preview hair

This button toggles the hair preview to give an approximate representation of what the exported hair will look. Acting on the density slider you can increase or decrease the preview hair population.

Random roots

This slider, set at maximum by default, scrambles root placement so that hair will produce a random and diversified cover.

Random length

This slider allows to reduce each hair length by a unique random coefficient ranging from 0 to 50% of each hair length.

Frizz effects

In order to produce a diversified and more natural result, it's possible to frizz both roots and tips.

The process is trivial; enabling the Preview Hair feature you'll see how tips and/or roots can be bent and frizz using the above controls, and produce a nice variation of hair.

Here below a simple example of how frizz affects hair.

To note that if Preview Hair is on, each time you style the guides, the preview hair will be recalculated as well.

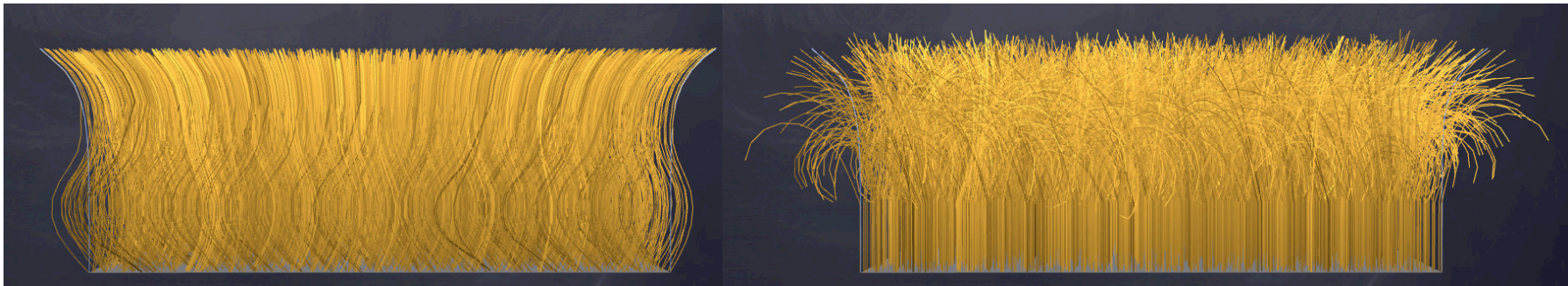


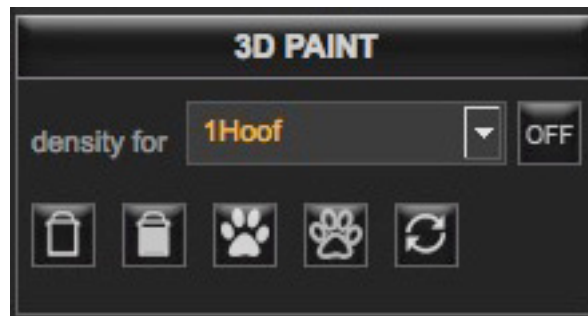
Figure 18: on the left, example of frizz applied to roots; on the right, frizz applied to tips

3D PAINTING

This feature allows the definition of density maps interactively, by painting directly on the model.

Important to understand that each surface will have its own density map, and each map has to be painted separately.

So, to make an example, if you load Genesis you can define density maps for the SkinTorso surface, then switch to the SkinArm surface and define the density map for the armpits, and so on.



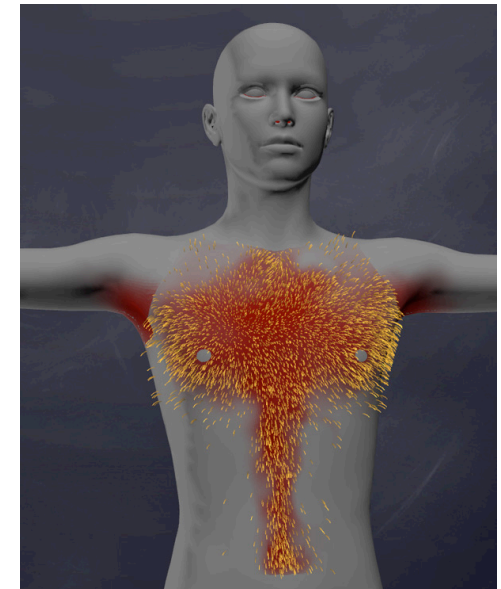
The 3D Paint controls panel allows to select the map to paint from the combo box, switch it on or off, reset it to zero density (the map will be filled in white) or full density (the map will be filled in red), load or remove a custom brush (you can create nifty density maps with those), and reset the brush to default.



By default, density maps are all at 100% (and so completely red), meaning full cover. If you like, you can reset the map to density zero, and start painting using your mouse or tablet. In this example (picture on the left), I painted some areas on the chest where I actually want hair to be.

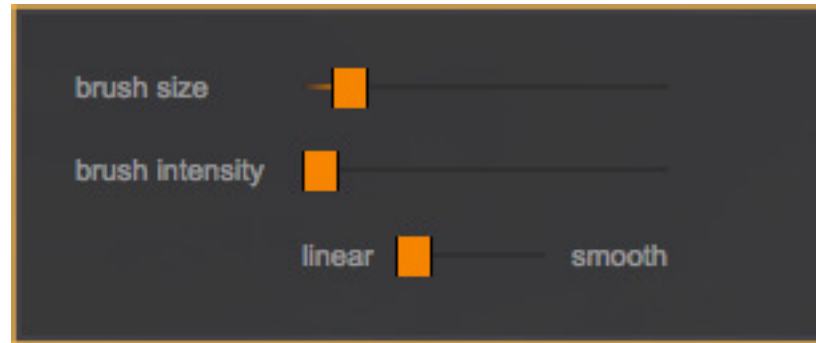
Areas in white (zero density) won't have any hair cover; shades of red will interpolate and produce the right amount of density to apply.

On the right you can see the result: the areas painted in red will receive hair cover; the cover density will be more or less intense according to the intensity of the red pixels. As mentioned in the "Keyboard and mouse reference", you can paint density directly with the mouse, and decrease or erase density holding the <SHIFT> key while painting.



ON SCREEN DISPLAY

The heads up display, hereby called **OSD**, is available only in STYLING and 3D PAINT mode and is triggered holding the <SPACEBAR> key. While active, it allows to change brush size, intensity, and switch between linear and smooth mode.

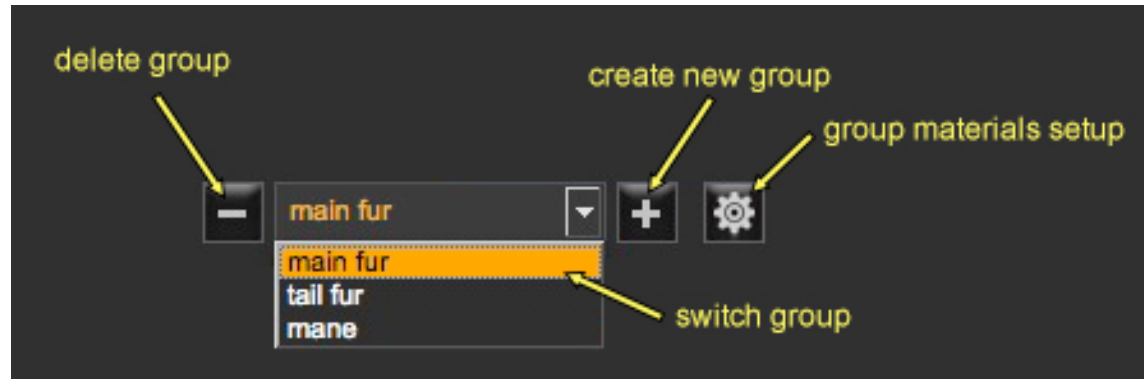


Brush size and intensity, as long as the linear/smooth setting for the scale tool can also be accessed from the new Vertical Toolbar (see page xx).

SHAVE GROUPS

Each time you load a model in Look at my Hair, a shave group is created automatically. The shave group holds all the information about follicles, guide hair and related settings.

It's good practice, especially if you want to design complex models, to create and use multiple shave groups.



For example, if you load the Genesis figure, you might use the initial shave group for the hair, create a second shave group for the eyebrows, one for the mustaches, one for the beard and so on.

For example, if you load a DAZ Big Cat figure, you might use the initial shave group for the main fur, create a second shave group for the tail fur, one for the mane and so on.

This way you may not only work independently on each shave group, but also set different materials and properties for each one. If you open the "**group materials setup window**" (see image above), you will be able to setup a vast range of options for the current shave group.

You may for example give a specific name to the group so that it's easily recognizable later, set the root and tip thickness (expressed in micrometers, where 1 micrometer=0.001mm.), the thickness random variance, the shader to be applied on the hair for this specific shave group, root, tip and specular colors, and also the texture and density maps to be used (as explained later, setting texture maps will allow to automatically gather hair colors from the underlying model texture).

You get the idea: you can set different hair thickness, colors, shader and maps for each single shave group.

There is also a convenient **Color presets tool** that allows picking human standard colors and applying those to the current material.

Additionally, for each surface you can define custom texture and density maps, and even save the painted density map to a file, so that you can eventually modify it in an external application.

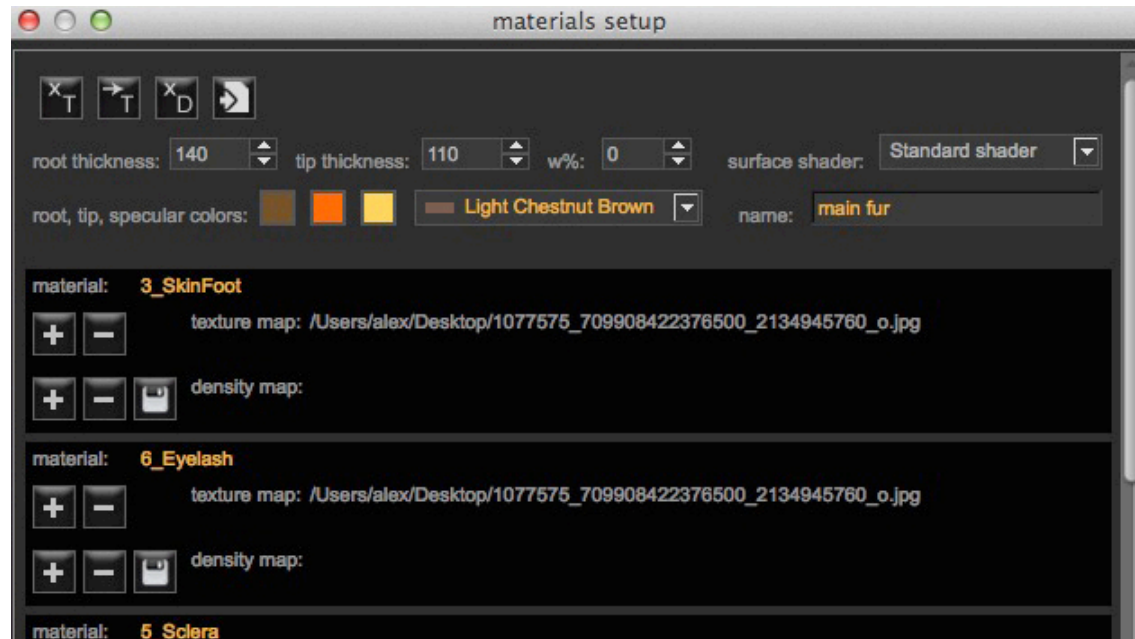


Figure 19: the material setup window

LOAD/SAVE PROJECTS AND DUF SUPPORT

It's possible to save and load projects created in Look at my Hair using the two buttons at the top interface panel.



Figure 20: load project



Figure 21: save project

The saved projects are stored in your "**Documents/DAZ 3D/Studio/lookatmyhairAM/presets**" folder and have an .lmh extension. The project file contains all the hair data information and also the pose and shape configuration of the model used, be it a figure or a simple object.

This means that when you want to load a project back for Genesis, to make an example, you will just need to load Genesis in Studio, start Look at my Hair and open a project you saved earlier; the plugin will automatically setup Genesis with the pose and shape presets read from the file and apply the hair information too.

Starting from this release, Look at my Hair supports also loading and saving directly to .DUF. This is an awesome feature that allows to save a full scene, containing all your items and settings, open it later and be able to edit each Look at my Hair asset present in the scene again.

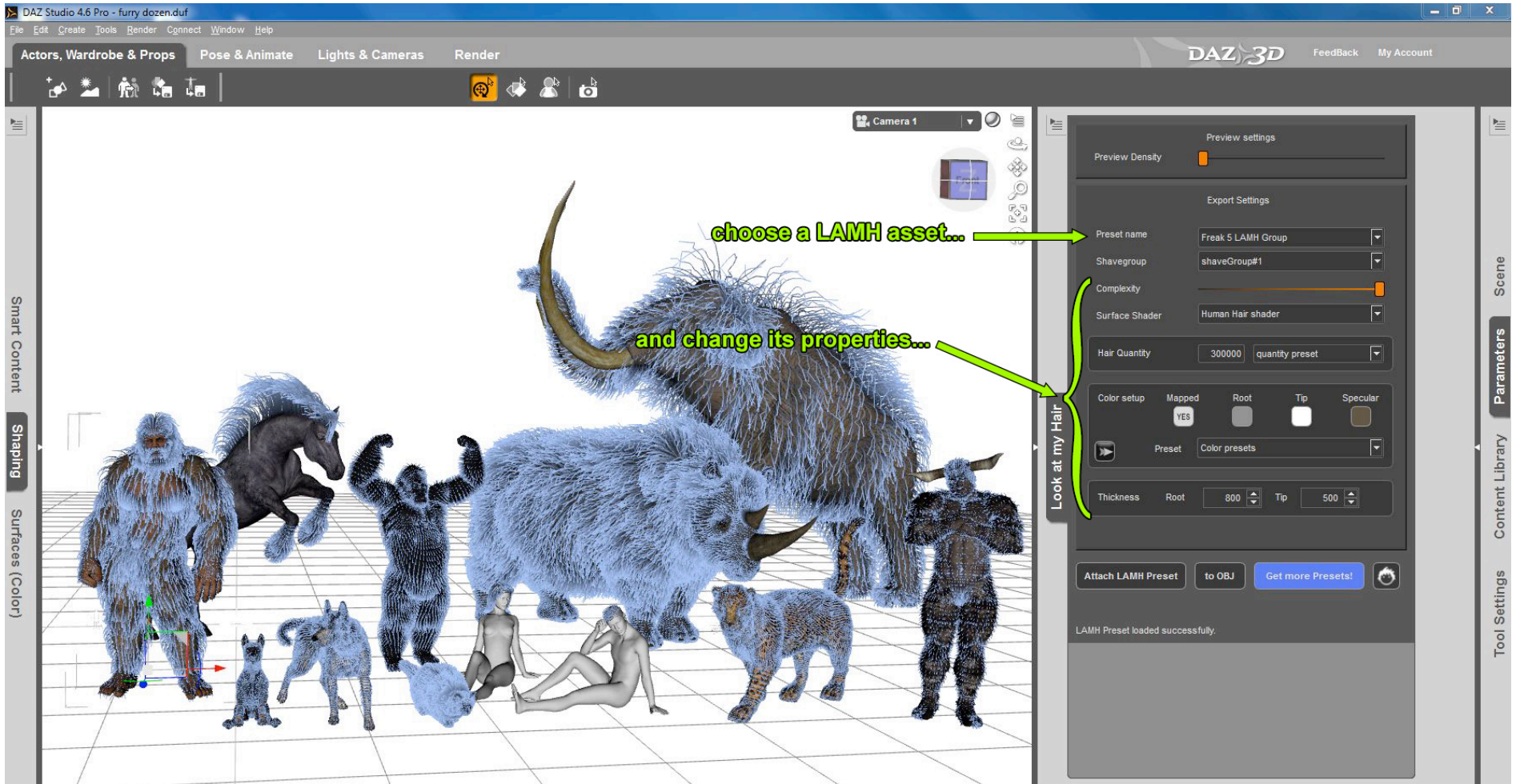
To make an example, if you have a complex scene containing multiple lights, cameras, props, models, Look at my Hair furred items, all that information will all be saved to .duf; later you can reopen the .duf and all items will be there exactly as setup in first instance, and Look at my Hair furred items will be obviously editable again.

MULTIFIGURE AND GEOGRAFTING SUPPORT

One of the most exciting features introduced with this release is the multifigure support, which allows loading and managing multiple Look at my Hair-furred figures.

This brings Look at my Hair into a new whole playground, allowing to create complex scenes with multiple furred creatures!

The pane allows to select and modify each individual asset very easily as displayed in the screenshot below:

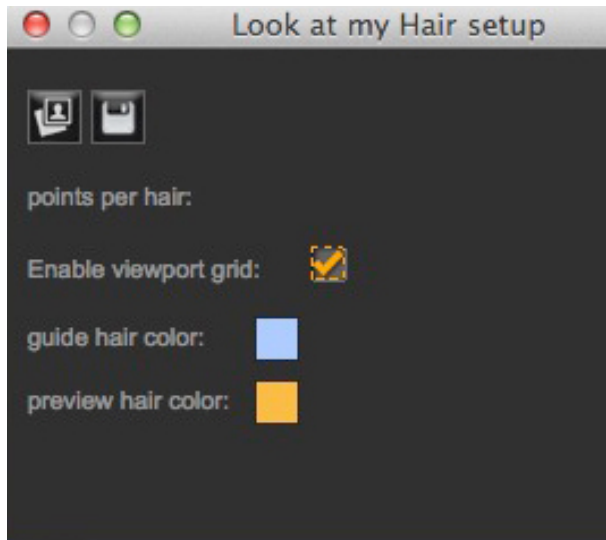


PROGRAM OPTIONS

You may access the program options window clicking the blue button at the bottom right of the interface panel.



Figure 22: program options



You can change the canvas background image with your preferred one, the number of points per hair (the default 17 are already a good choice, but if you plan to create very curly hair you might want to raise this number of to 40 or even more; on the contrary, very short hair, such as the beard, will probably require no more than 7 point to look good), toggle multi-threading support (even if it's advisable to leave it on), and guide and preview hair colors.

Click the save button to apply the options and close the window.

HOW TO STYLE HAIR

To better explain how to efficiently style hair, please check our tutorial movies available on the [Look at my Hair Youtube Channel](#)

In Look at my Hair, each hair is made of a fixed number of points (default is 13). By default, the points are constrained and bound to each other so that moving one hair point will affect at some extent also the others.

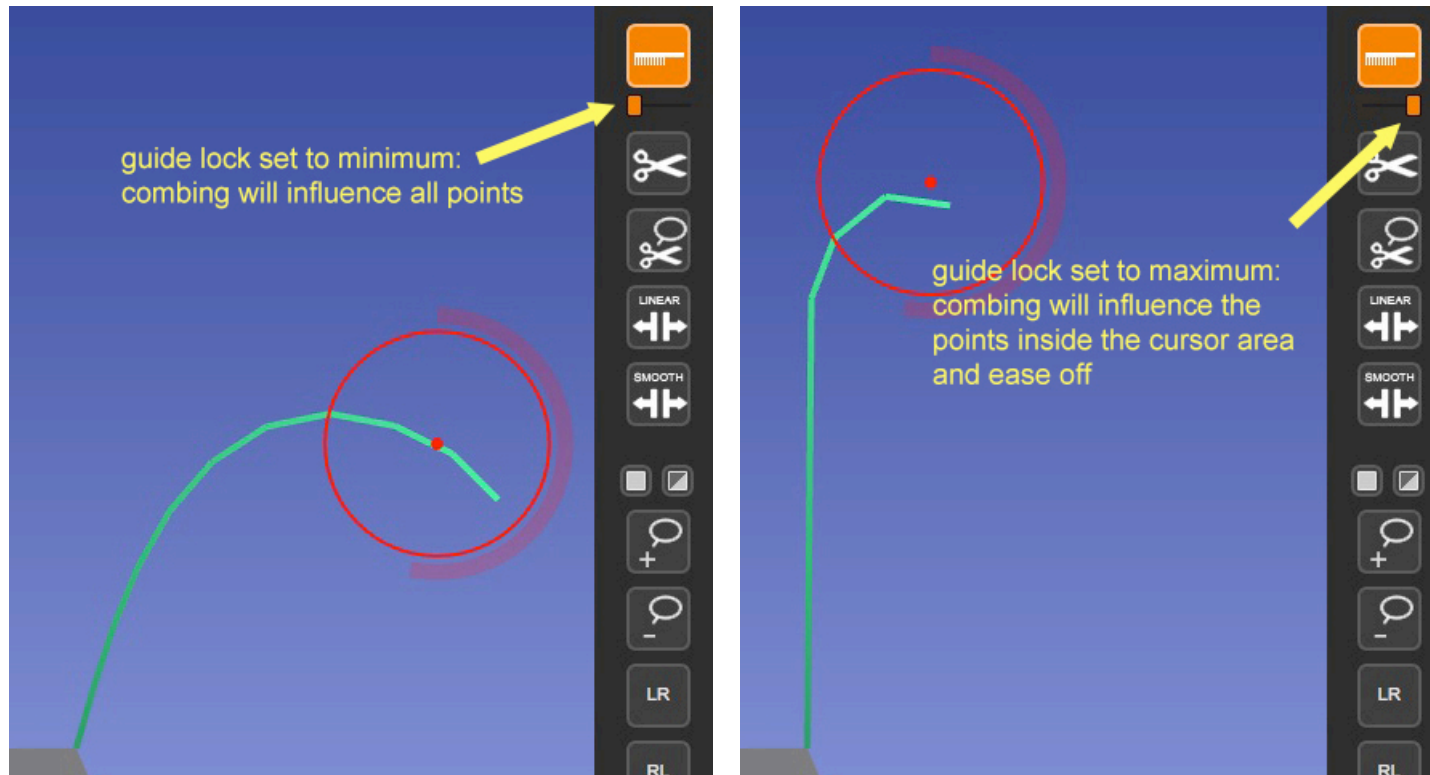


Figure 21: altering the lock slider setting allows to precisely comb hairs. High lock values allow to affect mostly hair tips, while low lock values will propagate the transformation down to the root.

Such extent, or movement influence spread across the points if you prefer, can be easily controlled and customized.

If you take a look at Figure xx, you will notice how acting on the guide lock slider will produce different comb behaviors: low locking values will progressively extend the comb stroke down to the roots; high locking values will instead restrict the comb stroke to the points inside the cursor area and rapidly ease off.

A tip: building on the above premise, high locking values come really handy when styling tips, so that the rest of the hair points are unaffected; low locking values come to play when you have to rapidly comb large areas and have a uniform hair style.

Styling hair and producing a nice model requires patience and practice. The first advice, as mentioned at page 10, is to use deformer to give the hair a basic shape that we can use as a valid starting point.

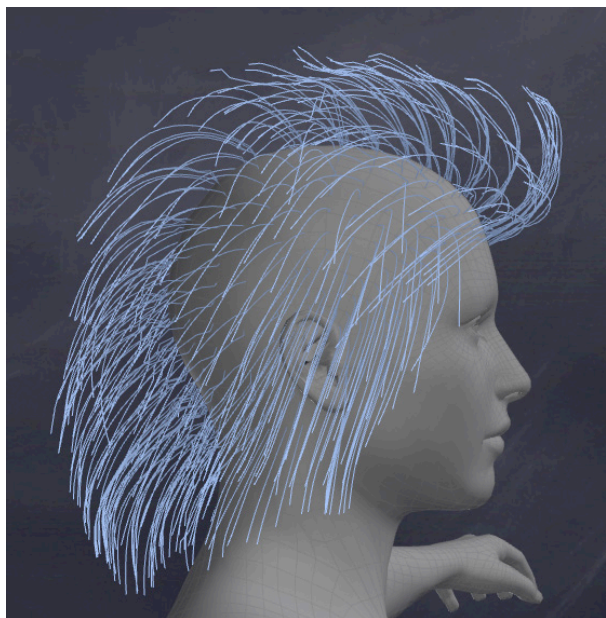


Figure 23: using deformer such as the spherize is a great way to create an initial shape

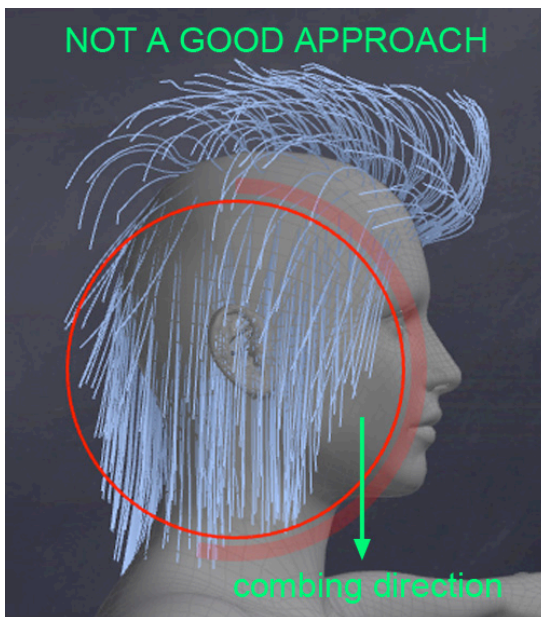


Figure 24: combing hair from this camera projection is not efficient

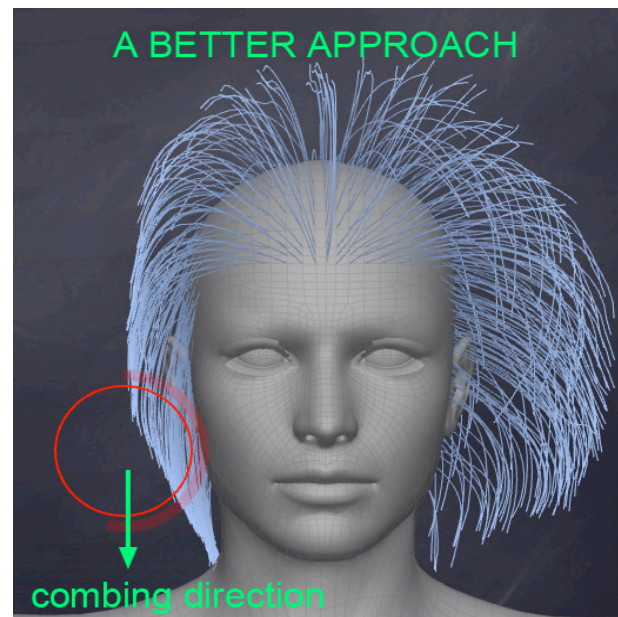


Figure 25: a much better approach; combing from this direction allows to select hair points more precisely and have a better visual

In the example above (Figure 23), I initially created a basic hair model using the spherize and taper deformer.

In Figure 24, an example of combing hair from the wrong viewpoint. Hairs are actually pulled down, but it's difficult to select precisely which points to grab (notice that I'm not selecting only the tips, but also points close to the hair root), and because of that all the hair will result "flattened".

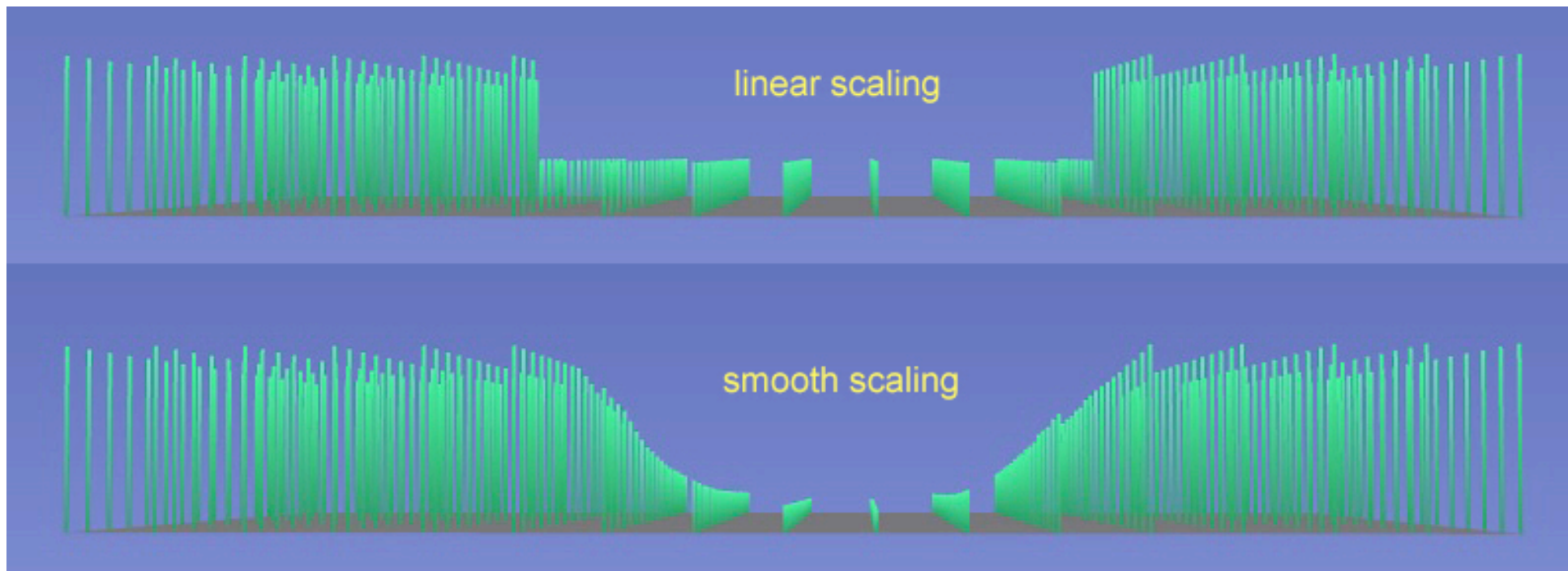
In Figure 25, I'm using a better approach. Combing hair from the front is the right choice: I'm able to easily grab the hair tip points, pull down and give a better conforming shape, with an immediate visual check of the action performed.

So remember that in order to comb hair efficiently, the best viewpoint to do it is from the side where hair are displayed in front of the canvas, rather than in front of the underlying model.

While this notion may seem a bit abstract, you'll easily understand it with a very few practice.

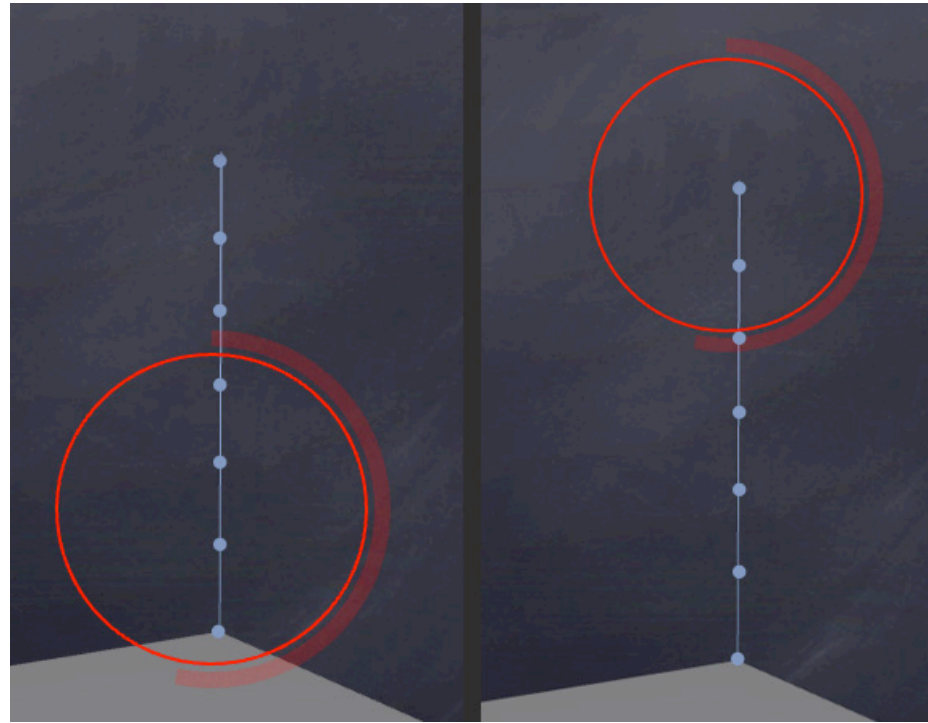
Scaling

There are two scale modes available, linear and smooth. The following image should explain the differences: linear scaling produces an abrupt and sharp result, while smooth scaling will interpolate so that the hair flow is smooth and more natural and is the preferred method when you want to scale hairs around eyes, ears and other body areas where you want the hairline uniformly scaled.



Scissors

In order to have the scissors working you don't have to select the root point. The next figures will explain this concept better.



In the left image, scissors won't cut because the root point is within the selection. On the right image, scissors will work as expected and cut the two points within the selection.

PARTING HAIR EXAMPLE

To create a hair model with parting hair I will cheat using two shave groups, one for the left hair side and one for the right side.

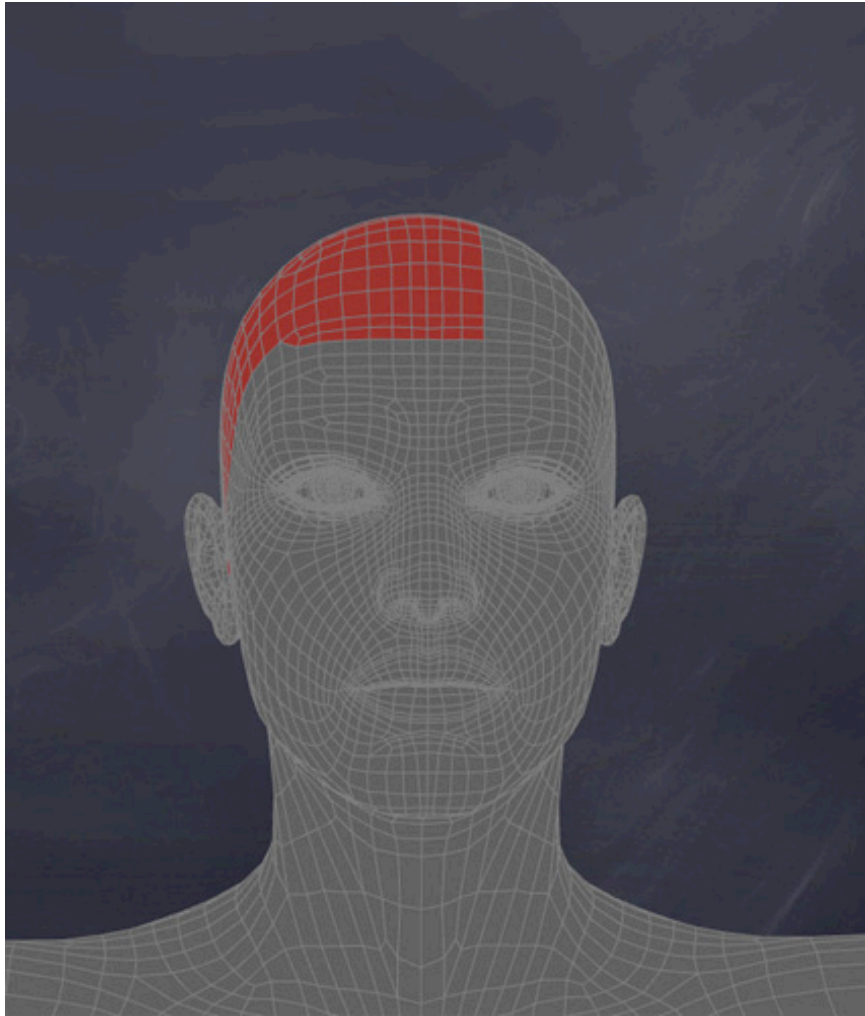


Figure 26: Follicle defined on the right side of the head

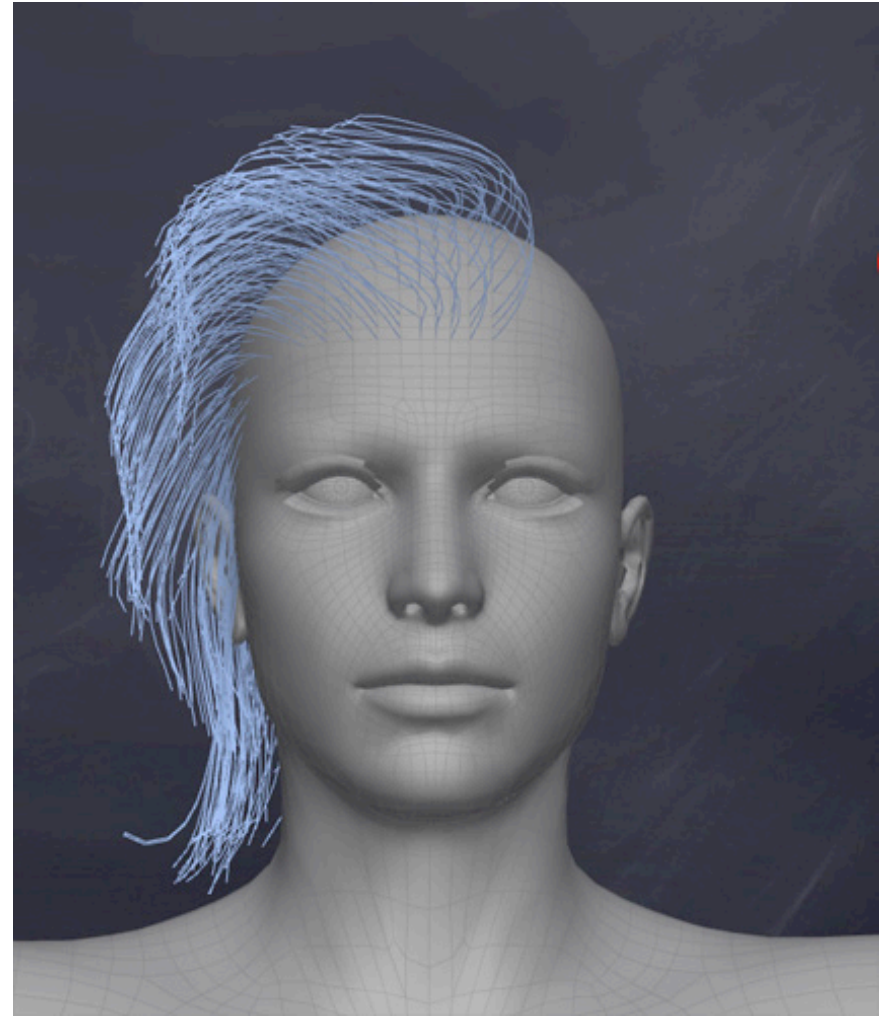


Figure 27: the guide hair for these follicles, after some spherize and simple combing

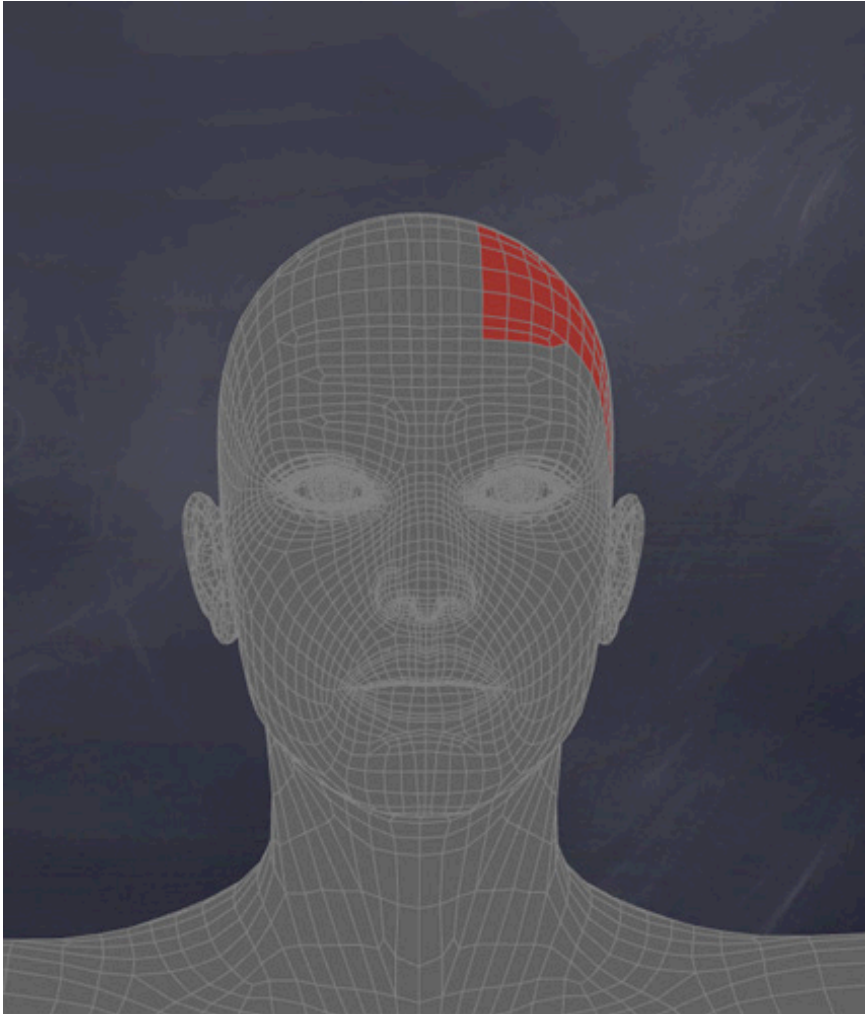


Figure 28: same procedure, this time on the left side

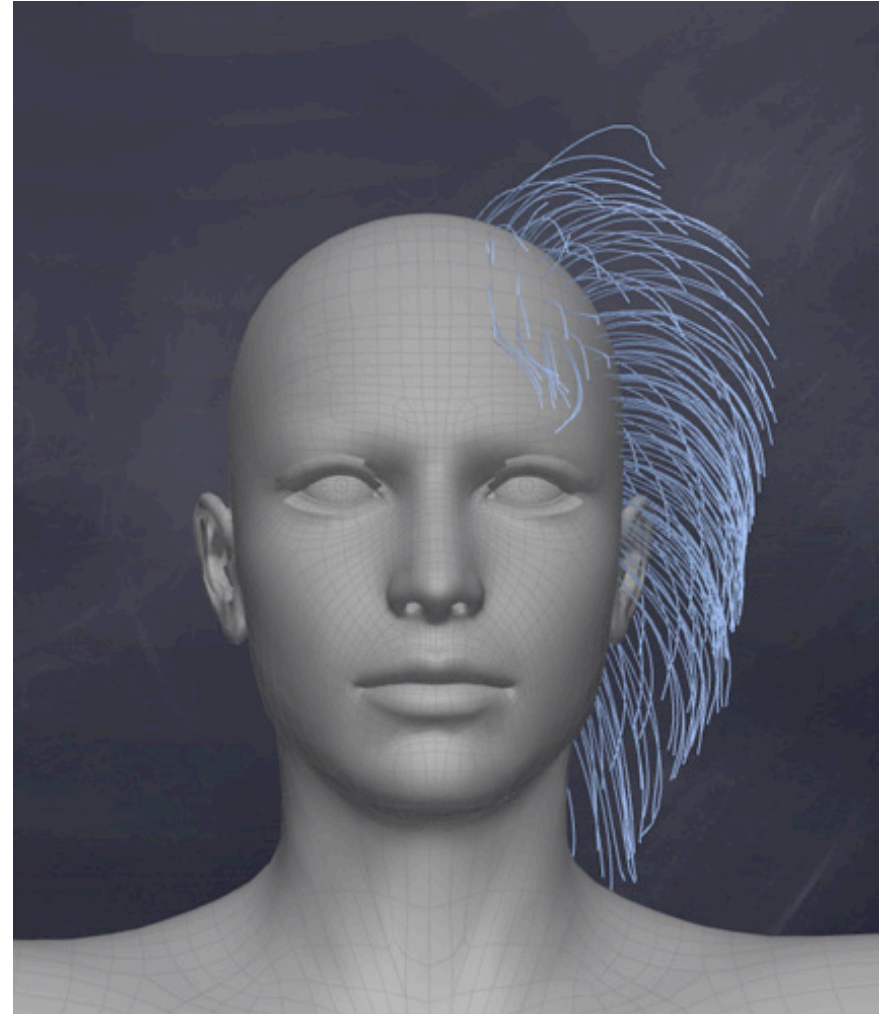


Figure 29: also in this case, some deformers and simple combing where enough to create a basic shape

I'm now going to toggle hair preview on to have a quick idea of how exported hair will look like.



Figure 28: using two shave groups allowed to quickly define a parting hair model

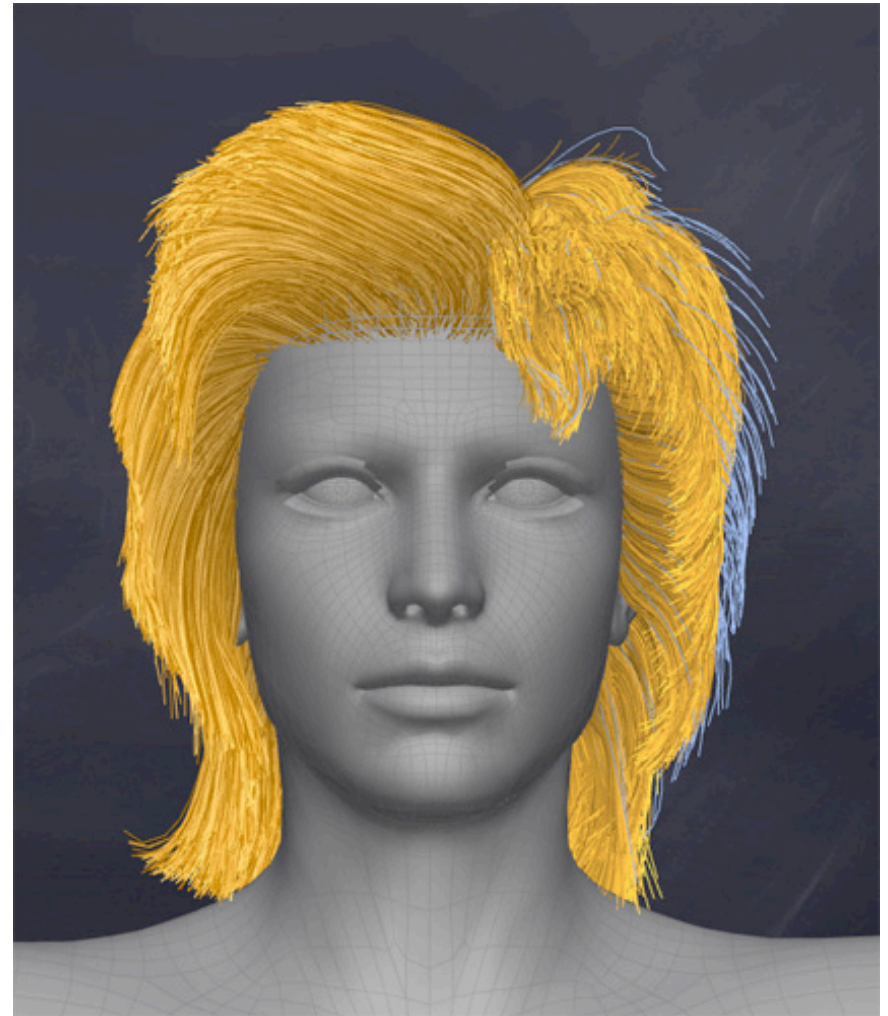


Figure 29: some frizz effects to give a random look to hair tips

I might have done this also using a single shave group, but it would have required more time and efforts in order to define the hair selection, part them and achieve the same result.

A NOTE ABOUT DENSITY MAPS

Since exported hairs are generated interpolating through the guides, who rely on follicles (i.e. polygonal geometry), the contour of the areas covered with hair can be jagged and very sharp.

That's where density maps come into play. Besides using them to vary hair density, they allow defining smooth contours and discarding unwanted areas, and so we can use them as "cut" maps in this case.

In the following Figure you can see how I used the density map to precisely define the areas that I wanted covered with hair.

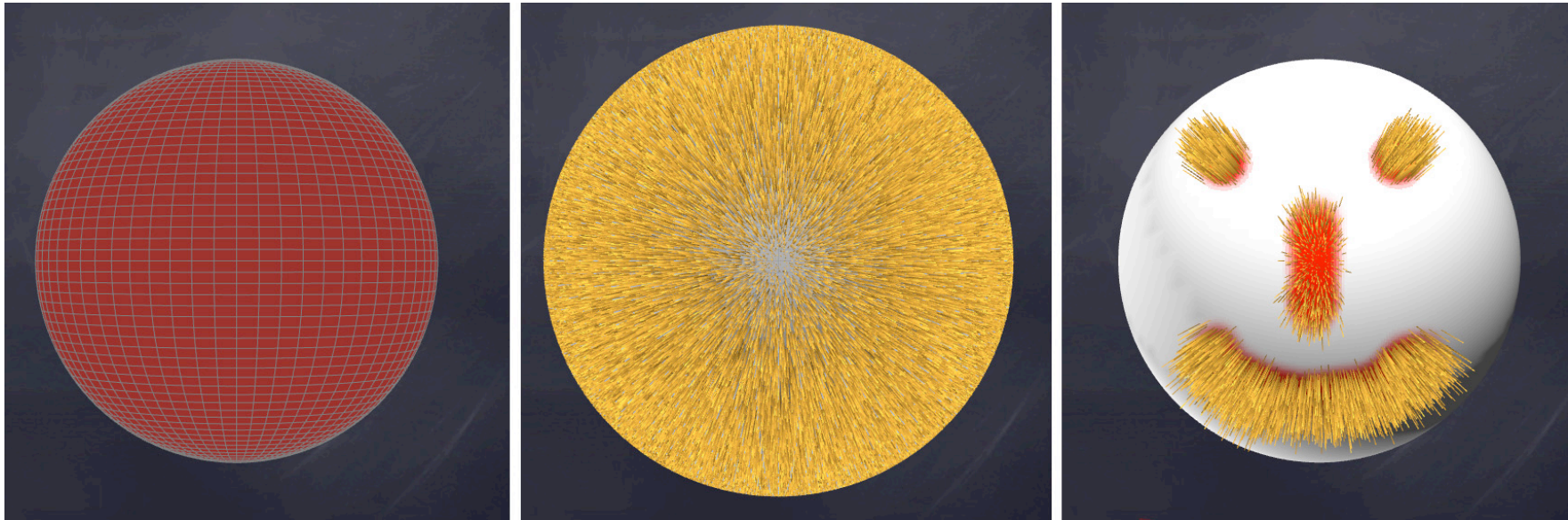


Figure 300: from the left, object follicles, hair preview, and a density map used as cut map

SYNCING OBJECT WITH STUDIO

Starting from the 1.5 release, all transform operations are automatically synced back to Look at my Hair.

If you export the hair to Studio, apply a pose or translate/rotate/scale/shape the figure, hairs will automatically adjust in Look at my Hair as well.

Thus, differently from the 1.0 version, there is no need to manually resynchronize the hair data.

EXPORTING HAIR

You may access the export window clicking the following button:

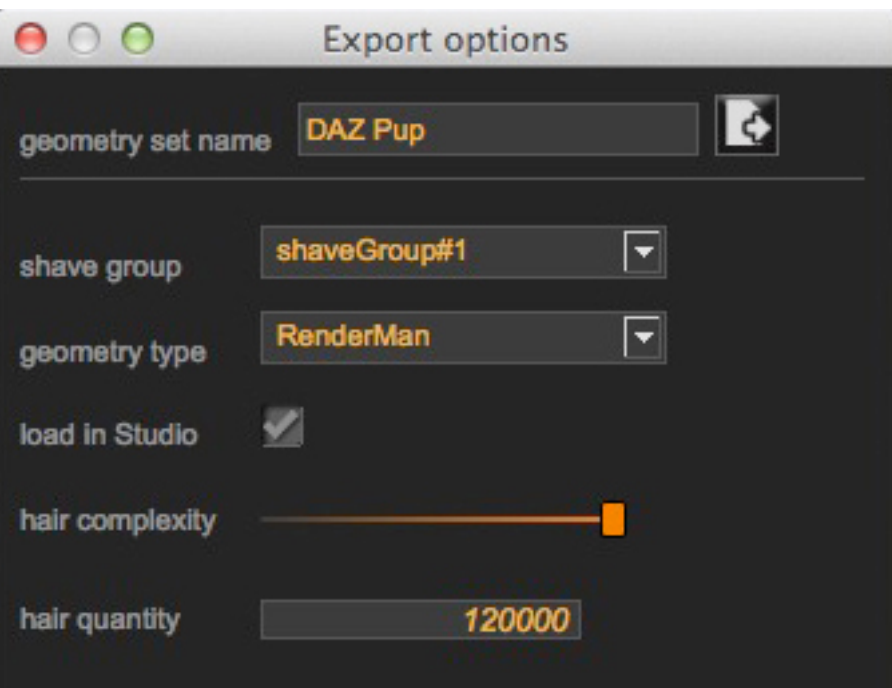


Figure 31: open the export window

The settings available in the export window are straightforward.

Geometry type: you can choose whether exporting hair as RenderMan curves, a textured Alias Wavefront .obj file collection or instancing a collection or props by replacing the exported hair with those.

RenderMan curves render very fast and are highly optimized; if you plan to render your scene in Studio it's usually the best choice.



Exporting hair as an .obj collection will create an .obj file for each shave group (plus a companion texture) that you can use in any external application capable of reading the Alias Wavefront .obj file format.

If the "Load in Studio" option is disabled, also the model geometry and all the texture maps attached to it will be exported as well.

Instancing a prop collection will be explained separately later.

Load in Studio: this option relates only to the .obj collection option. If you know you'll be using the collection in an external application and you do not need to display it in Studio, you may uncheck this option.

Note that the exported .obj collection files are in your "Documents/DAZ 3D/Studio/lookatmyhairAM/presets/" folder.

Geometry set name: it's good practice to assign a name to your hair model so that it will be easily identifiable in Studio.

Hair complexity: this slider reduces the number of hair segments upon exporting. To make an example, using the standard number of hair points, 17 (thus 16 segments), and setting this slider to the middle will produce hair with 8 segments. Hair geometry will be simpler and less detailed, but rendering will take less resources and time.

Below this option you'll find a list of the shave groups currently used in

the project, with the possibility to type the desired amount of hair for each group. Note that the value of desired hair won't account for a density map.

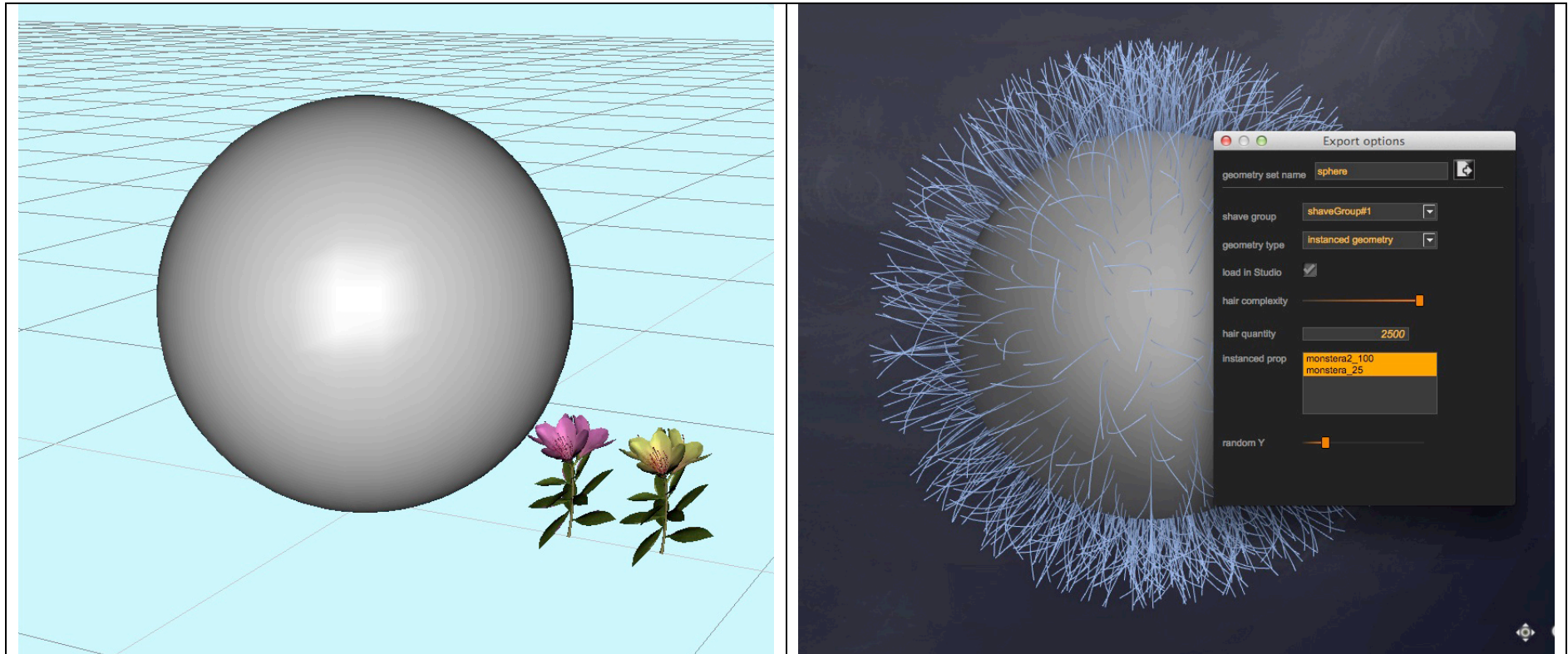
As a side note, a human head hair count it's usually between 90000 and 120000; diameter may range from 17 to 180 micrometers (1 micrometer=0.001 mm.).

INSTANCING GEOMETRY

As mentioned in previous chapter, it is possible to export instanced geometry in place of hair.

You just need to load some props of your choice in Studio, style some hair and choose "Instanced geometry" from the export dialog: the operation will result in the model being populated with props instances instead of hair.

Here below a series of images that will explain better how this works.



In the left figure you can see the objects loaded in Studio: a sphere, which will be used to grow and style hair, and two flower props that will be used to replace hair.

In the image on the right, I made some simple styling and opened the export dialog. Here, I've chosen to use "instanced geometry", the number of instances to use, picked the props available in the collection list (you can decide which props you actually want to use: one, some or all of the available ones) and exported.

The slider at the bottom, defined as "random Y", allows to add a random rotation to each prop instance Y axis, in order to get a more diversified look.

The render result is displayed below. You see how instead of hair, we got a sphere completely covered with prop instances, which have been assigned and mixed randomly.

Remember that the instanced props will follow hair orientation and scale: so if you style the guides to be longer on some parts of the model, shorter on others, that will be applied to instances as well. The same goes for orientation: the instanced props will follow the hair angle relative to the object surface.

Creating a very large number of instances may take its time: using about 3000 instances takes 2-3 seconds, creating 10000 instances may take up to 6-7 minutes. It's always better to use a smaller number of complex props (geometry-wise), rather than using a very large number of very simple props.

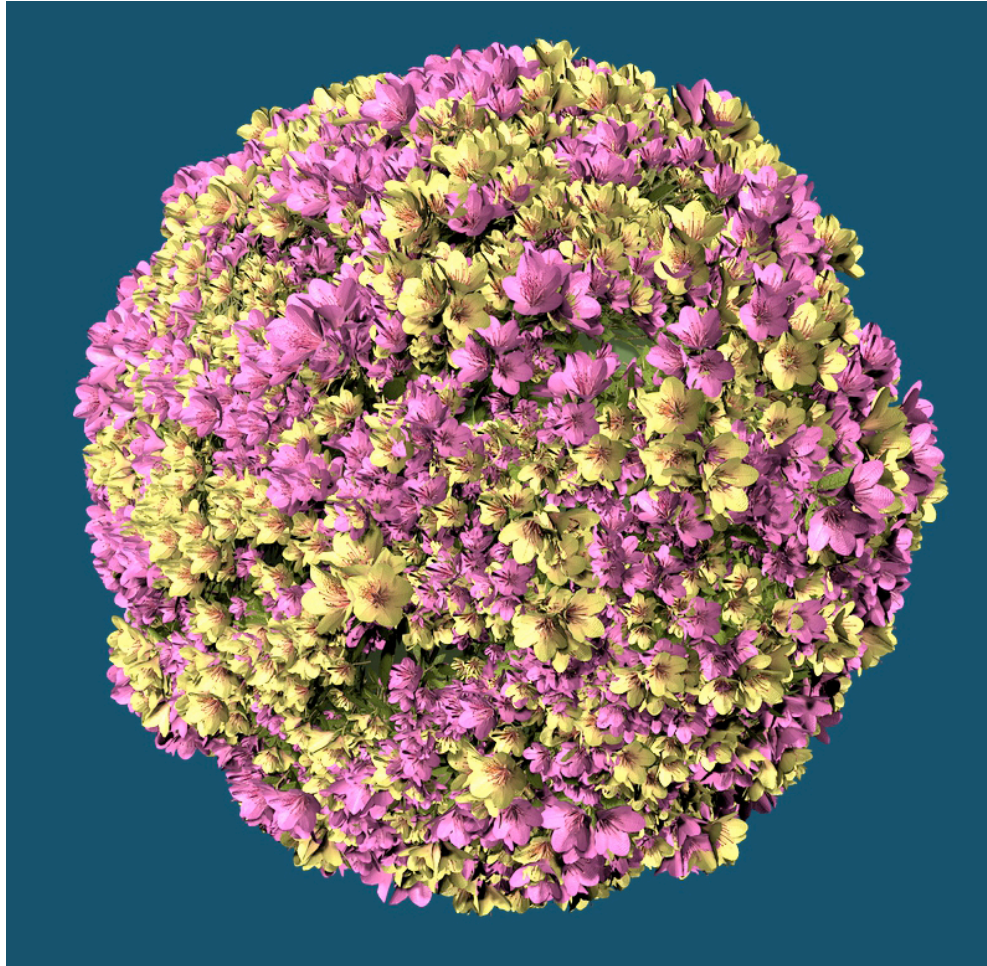


Figure 32: the sphere populated with instanced flower props

FIBERHAIR

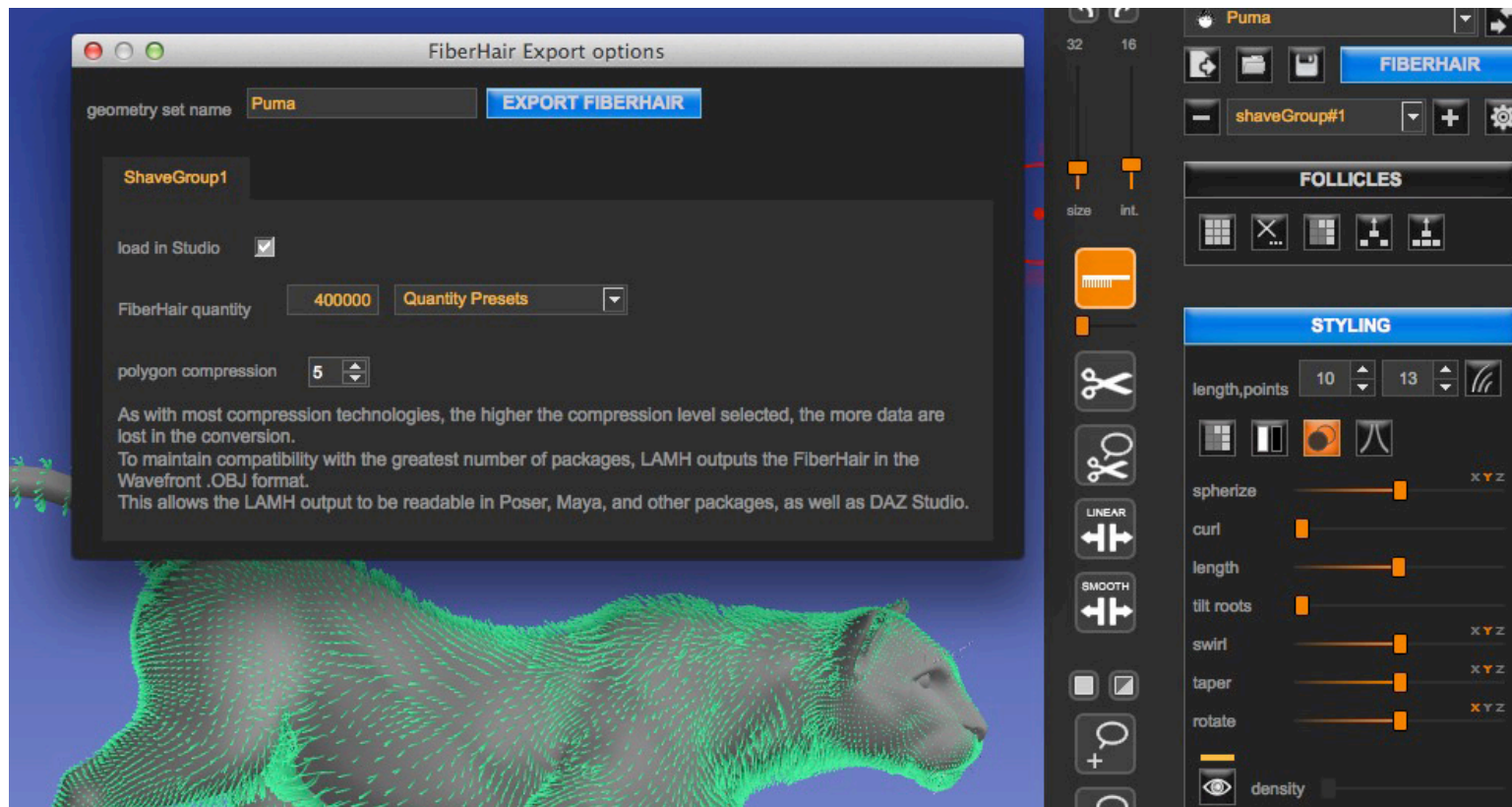
Starting from this release, Look at my Hair will create optimized FiberHair for rendering in Poser, Vue, Maya, LuxRender, Octane Standalone, and other external packages.

Each FiberHair can be thought as a strand with a variable number of polygons, determined by a special algorithm that computes the complexity to be applied for each hair.

The FiberHair include also UV information data and custom texture map, thus providing a complete asset to be used with external packages. In fact, to achieve maximum compatibility, Look at my Hair provides the option to write the FiberHair to .OBJ format, making them immediately usable for rendering in LuxRender via Reality or Luxus via DAZ Studio, or importing them in any other external application and renderer.

Let's see how they work and the incredible advantage they have vs. plain .OBJ export.

Here we have a DAZ Big Catz loaded in Look at my Hair, and I already clicked the FIBERHAIR export button, which shows up the export dialog.



I decided to export 400.000 hairs, which is quite a large amount, and set the polygon compression to 5: as specified in the dialog, the highest the compression, the less detail will be applied to the exported mesh.

Usually a good range for compression is 5-15.

As you noticed, I also checked the 'load in Studio' option, so that hairs will be loaded in the scene: this is useful if you are planning to render in LuxRender (via Reality or Luxus); if you want to use the FiberHair output in other application, the 'load in Studio' option is not necessary.

In any case, as the FiberHair export is completed, a message will prompt the path for the output files.

The resulting .OBJ in this case is made of 820.000 polygons and has a size on disk of 144MB. Not bad at all, considering that a plain .OBJ export would have ended up with a 250MB file size, thus saving us a 42% without any appreciable loss of quality.

And we got also a .JPG texture to apply to our fur .OBJ: now, just use these in your preferred application and you are all set: Poser, Vue, ZBrush, Maya, C4D, Octane, Modo, Terragen, they all work great with FiberHair generated meshes, and the render results are excellent!



Figure 33: the fur generated texture

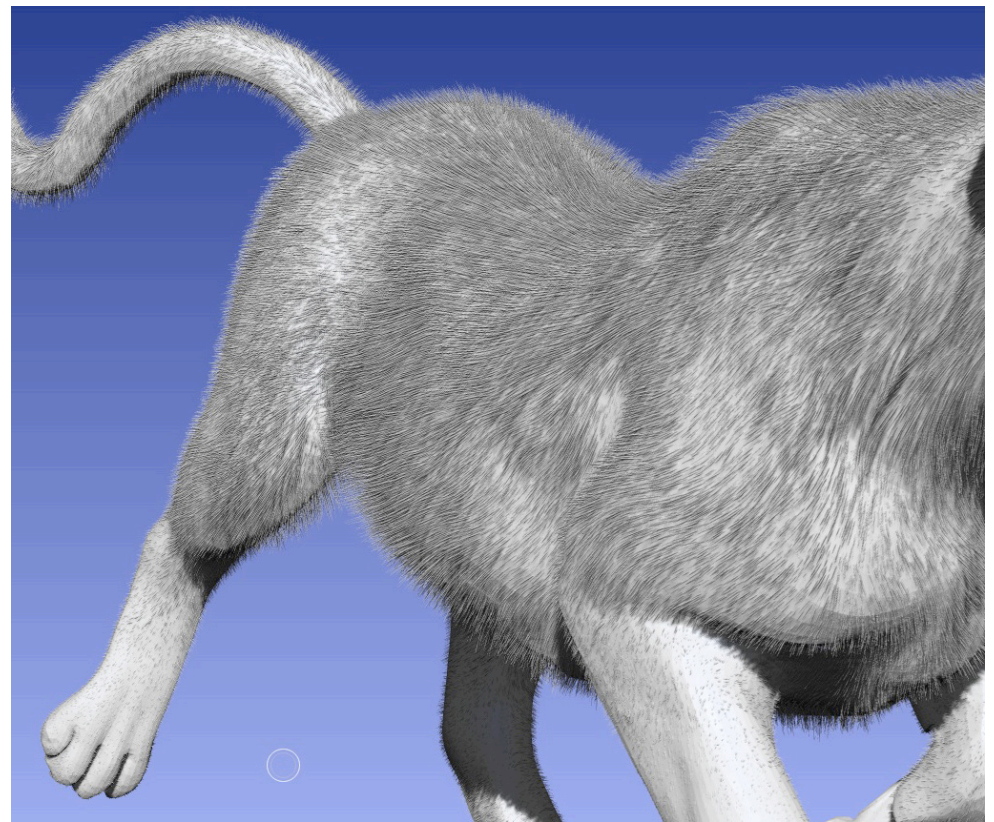


Figure 34: the FiberHair fur loaded in ZBrush

I'd like to mention also that just as plain .OBJ export, the FiberHair inherits group information from the underlying model and so it's ready to go for rigging: just have it conforming your figure, adjust joints if necessary and it's done!

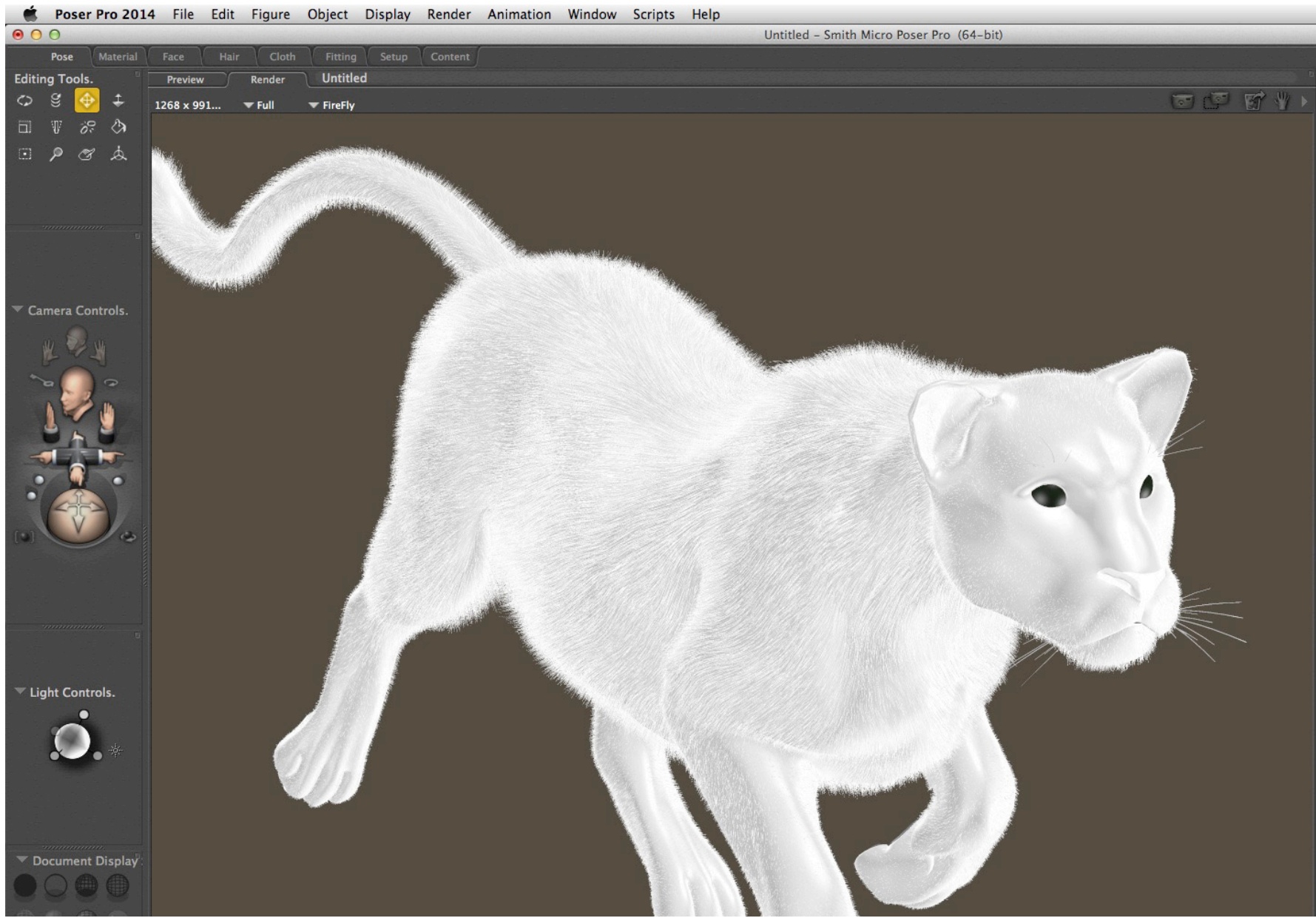


Figure 35: FiberHair in Poser. No texture applied intentionally to better discern the hair

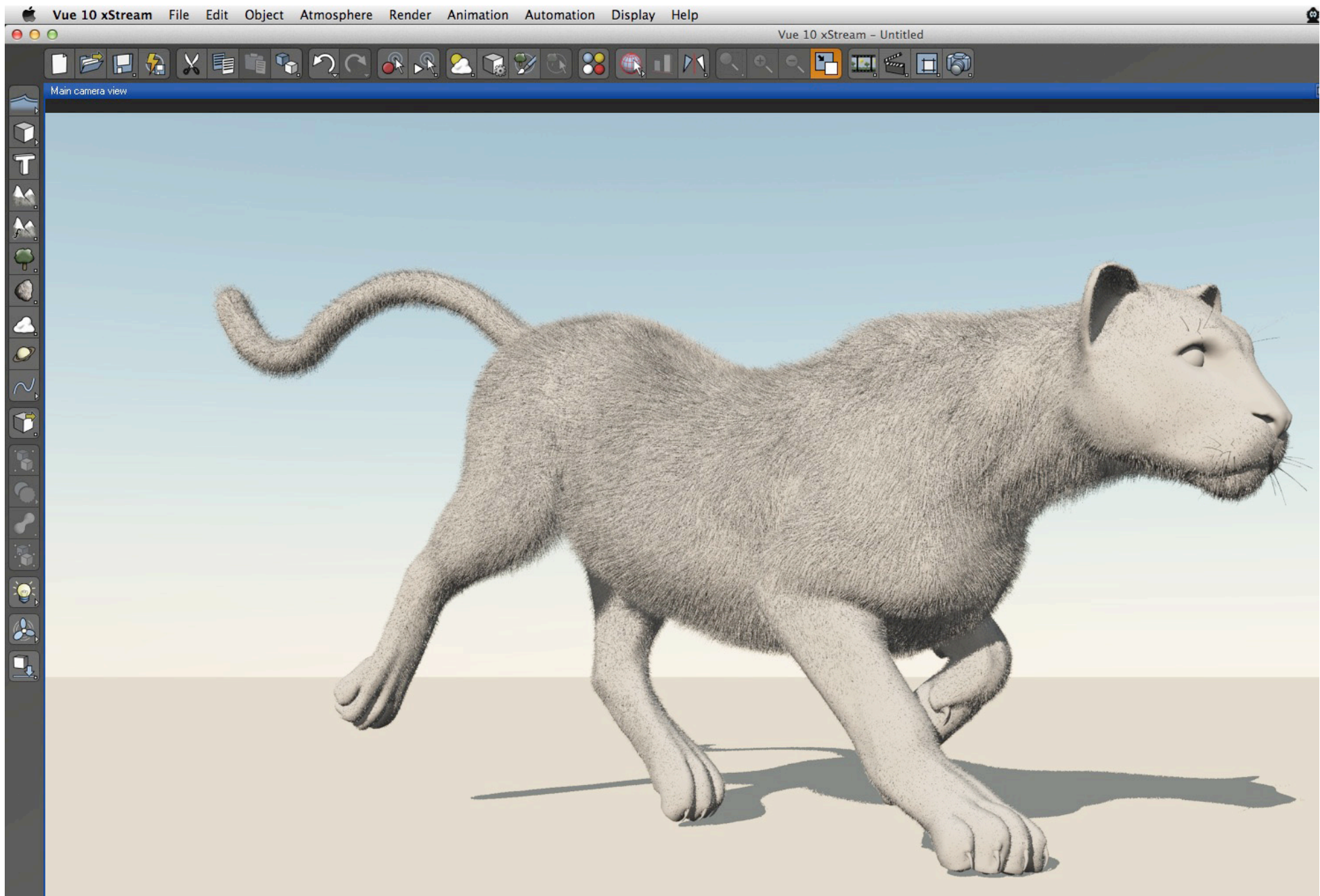
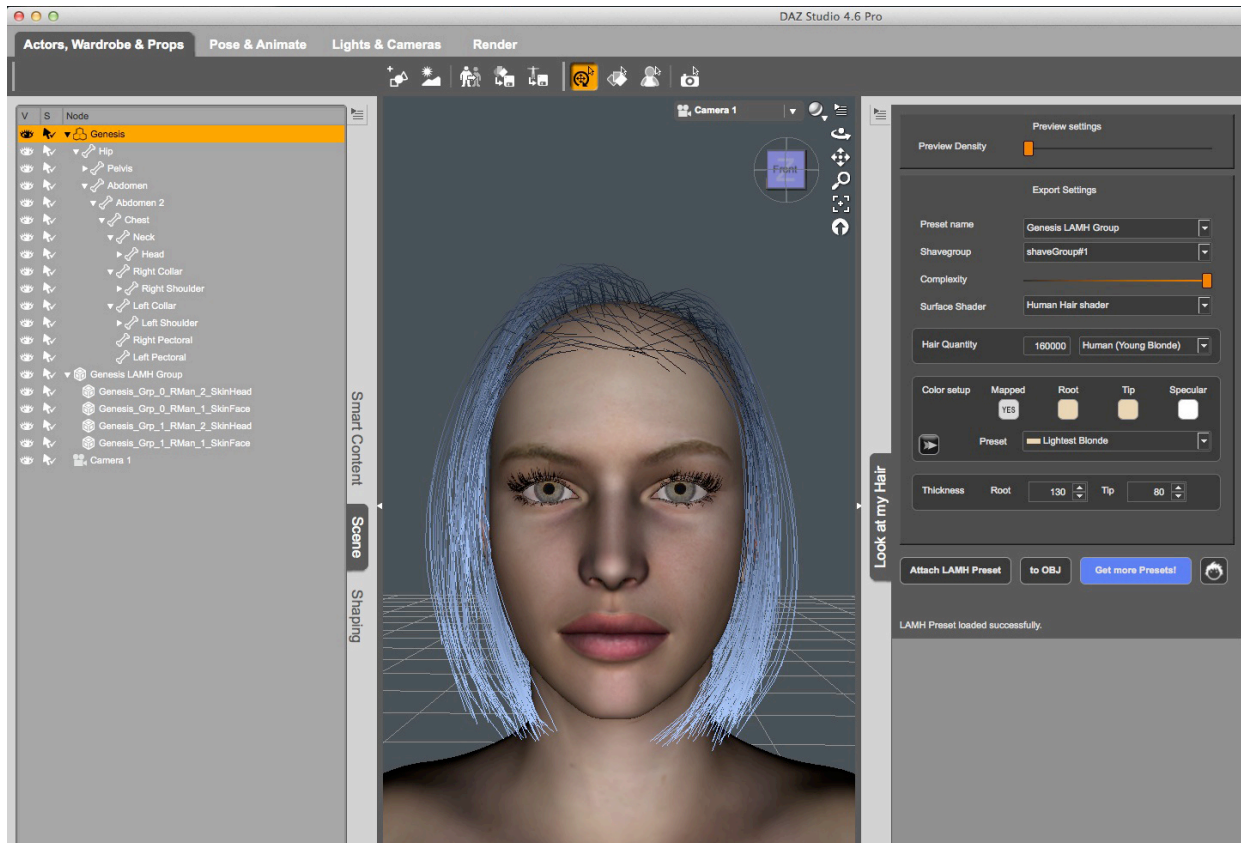


Figure 36: FiberHair in Vue. No texture applied intentionally to better discern the hair

HUMAN HAIR SHADER

To run a quick test, load Genesis, click the **Attach Look at my Hair** preset button and load one (remember that we have already quite a collection available here: <http://www.furrythings.com/presets/>).

In a few instants the preset will be loaded and available (see figure below).



Through the pane, you can easily alter a number of options, and obviously enable the new **Human Hair Shader**, which, thanks to multiple light scattering calculations based on the Marschner model, will add a higher degree of realism to your scenes.

The shader is designed to work best with environment-mapped lights; you may want to add also some spotlights or point lights to enhance lighting on specific areas.

The Human Hair Shader is able to calculate light scattering from hair fibers and it calculates **three primary components** (as from the Marschner 'Light Scattering from Human Hair Fibers'):

R: Shift of the primary specular peak toward the root

TT: A strong forward scattering component from light colored hair. This causes blond, brown, gray, and white hair to look very bright when lit from behind.

TRT: A colored secondary peak shifted toward the tip from the white primary specular peak. In a head of hair, this leads to the secondary highlight that is visible just above the primary, sometimes appearing more as a colored fringe on the primary than a separate feature.

This shader features quite a number of parameters that allow to completely customizing the final result, and we found it fascinating to fiddle with all those settings and verify how changes affected the render.

The critical settings regard especially the three light scattering components named:

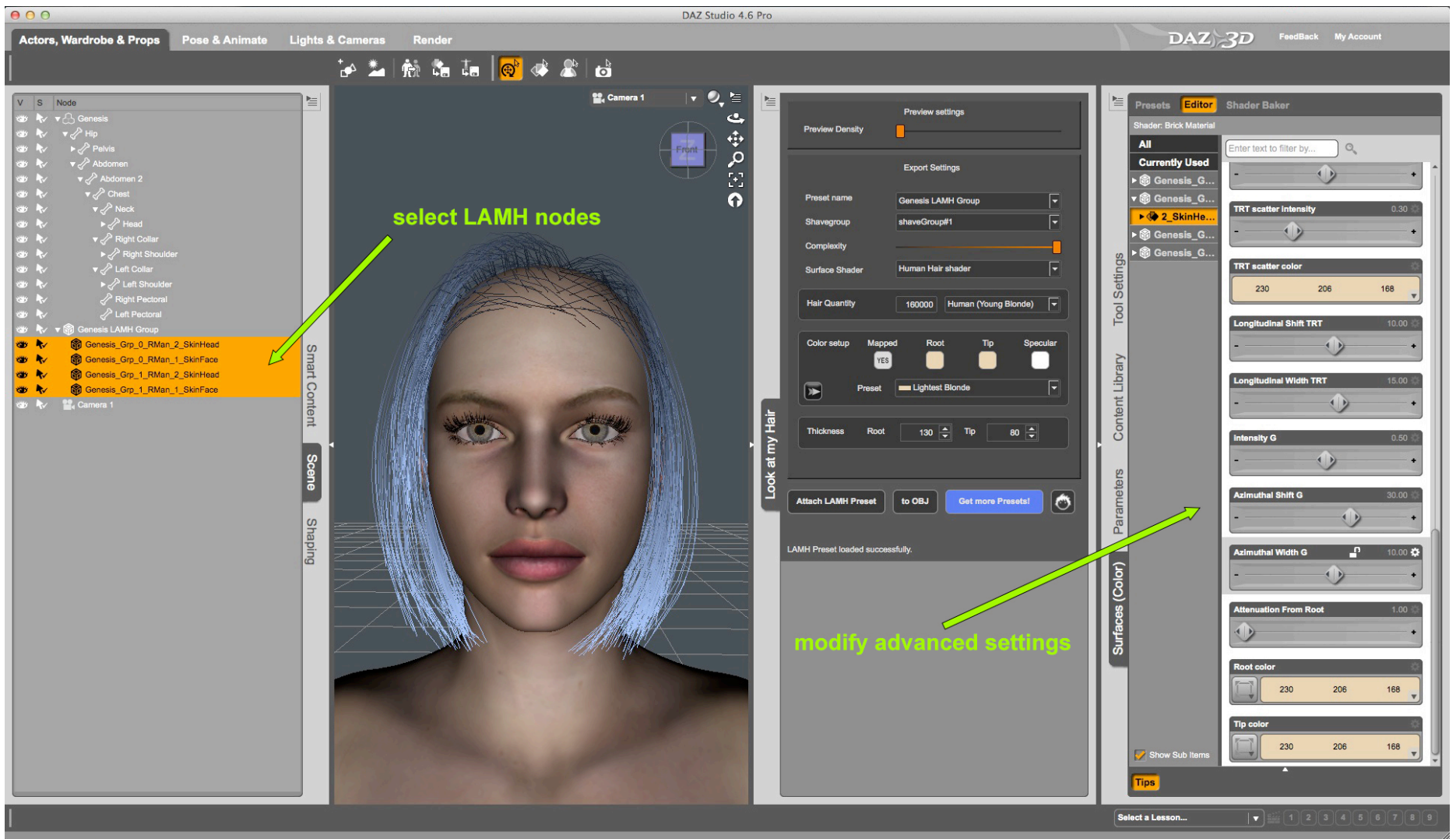
- R intensity
- Longitudinal Shift R
- Longitudinal Width R
- TT intensity
- Longitudinal Shift TT
- Longitudinal Width TT
- TRT intensity
- Longitudinal Shift TRT
- Longitudinal Width TRT

R, T, TRT intensity will affect how strong the reflection is.

Longitudinal Values will basically determine how "wide" the scatter area is.

Longitudinal Shift can be used to shift the scatter area calculations.

All these parameters, along with other advanced settings, can be modified directly through the **Surface Pane**, as displayed on the next page.



As you can see, after selecting the Look at my Hair node surfaces in the Scene Pane (left), you can tune all the advanced shader settings directly in the Surface Pane.

The images in the following pages show how changing those parameters affect the overall look of the hair.



Figure 37: shader with default settings



Figure 38: slightly increased R intensity, and longitudinal widths



Figure 39: scatter colors slightly changed to red



Figure 40: and here toned down to dark

HUMAN HAIR SHADER



Figure 5: added a spotlight to enhance lighting on the left



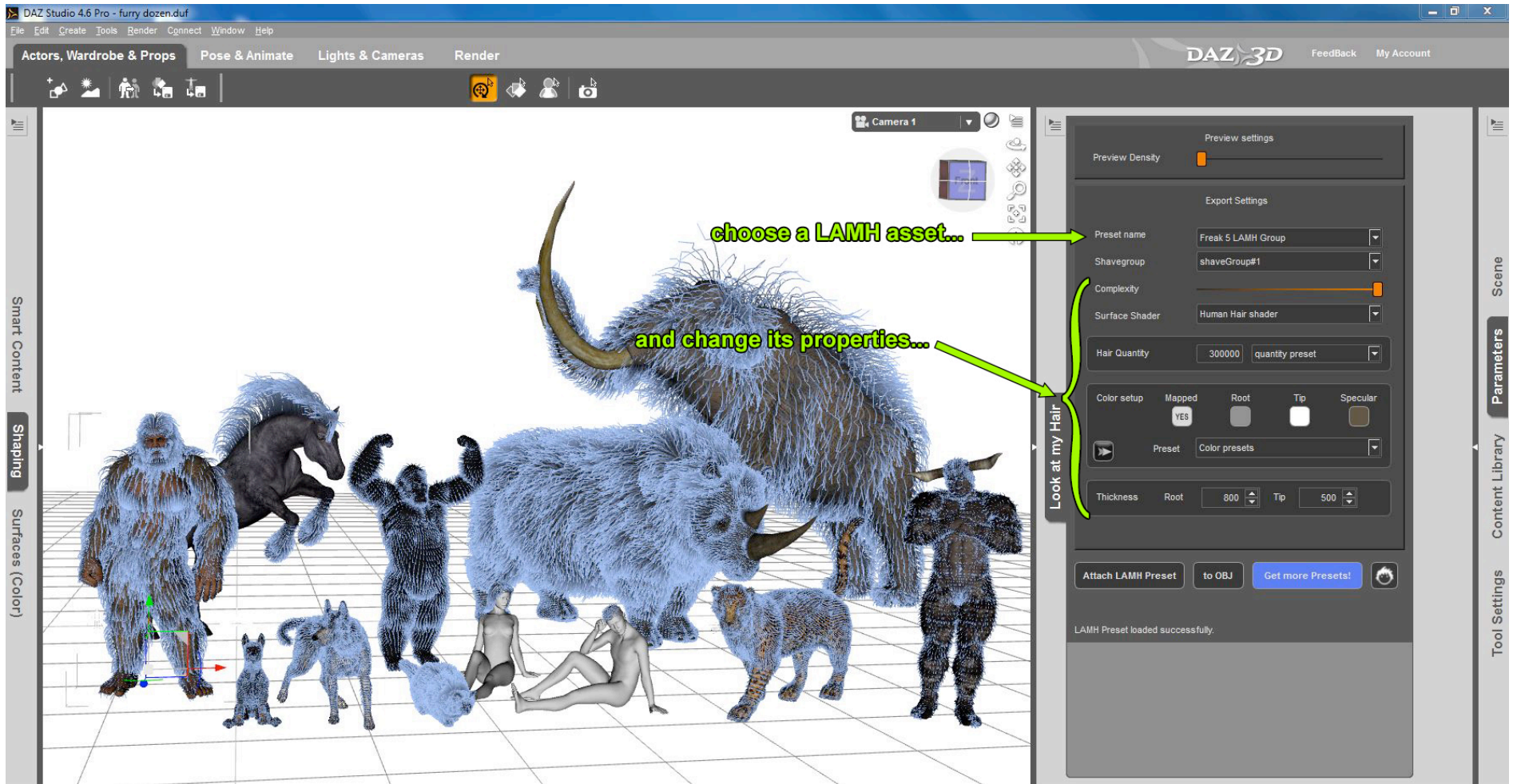
Figure 6: side view with mild scatter effect

Ok, we hear you... "Why there are no blonde or red hair examples?"... Well folks, you are going to try that!

MULTIFIGURE AND GEOGRAFTING SUPPORT

One of the most exciting features introduced with this release is the multifigure support, which allows loading and managing multiple Look at my Hair -furred figures.

This brings Look at my Hair into a new whole playground, allowing to create complex scenes with multiple furred creatures!
The pane allows to select and modify each individual asset very easily as displayed in the screenshot below:



RENDERING IN STUDIO

Once you have exported hair as RenderMan curves, in the Studio Scene panel you will find a Look at my Hair container node containing an array of items named according to the following syntax:

[geometry set label]_Grp_[shave group number]_RMan_[surface]

In practice, Look at my Hair will create a RenderMan object for each shave group and related surface.

Each RenderMan object has a material that you can edit directly through the Surface panel. The material is inherited from the “material setup” configuration done in Look at my Hair.

So if you have setup a certain shave group to use the Standard Shader, once that group is exported in Studio you will be able to modify its properties directly from the Surface Panel.

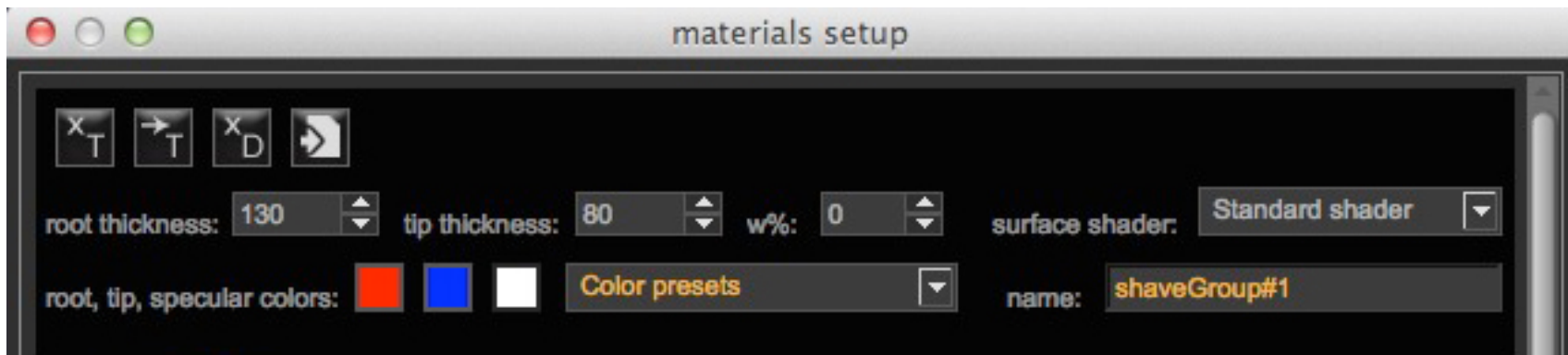
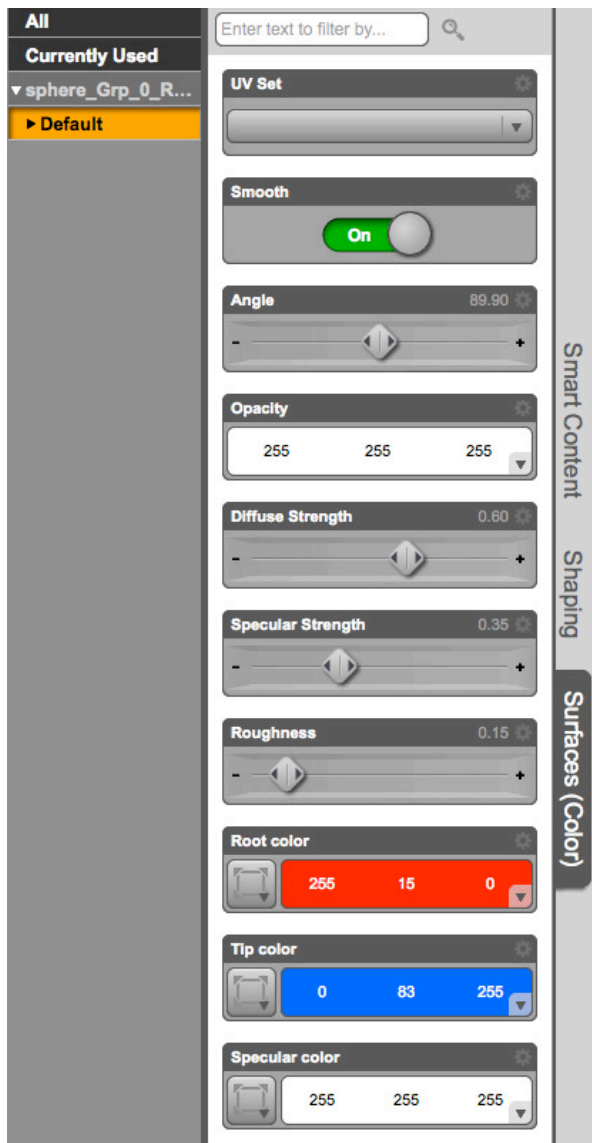


Figure 4.1: Material setup for current shave group

As you can see I've setup the shave group with a red color for the root, blue for the tip and white as specular. No texture maps associated to the group at this time. Also, I've chosen to use the Standard Shader.

Now, let's see how this material is available in the Studio Surface panel after exporting the hair.



As you can see in the Figure on the left, the Surface panel inherited Look at my Hair settings for the current shave group.

At this point I can easily change the colors and other properties directly from the Surface panel, experiment with different settings and do some test renders.

As I mentioned earlier, there are three possible shaders that can be used: the **Standard Shader**, the **Advanced Shader** and the **Ambient Occlusion Shader**.

The Standard Shader, despite the limited number of options, provides a very good solution for hair shading. It's the one that you will most likely use more often.

If you aim to produce even more complex shading, try the Advanced Shader. It provides up to 18 different settings that allow customizing hair shading even more.

It's beyond the scope of this manual to explain what each of those settings does, also because the combinations are virtually infinite.

The Ambient Occlusion shader is very useful especially on short animal fur, as it allows blending the hair roots with the underlying body mesh almost seamlessly.

Finding the right "alchemy" for shaders and lighting is a matter of practice and experimenting. I encourage you to try different options and settings, run some test renders and learn from them, noting how changing parameters affects the result each time.

For preview purposes the default render settings are just fine. However, for a production render, lighting and render settings are critical and they need to be properly set.

To achieve high quality I usually use an UberEnvironment Light or three-point lighting (a technique that involves using 3 lights equally spaced in order to get an even illumination) and use the render settings as displayed in the following figure.



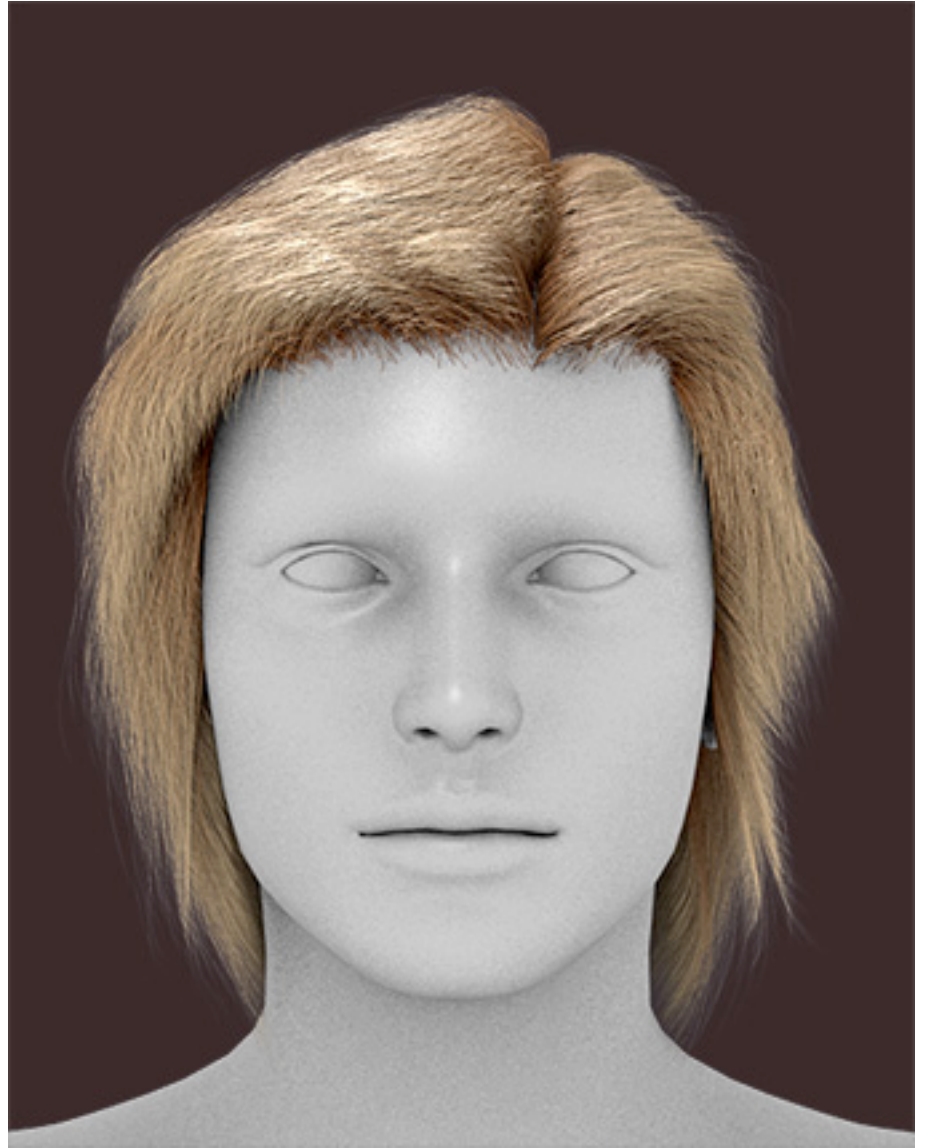
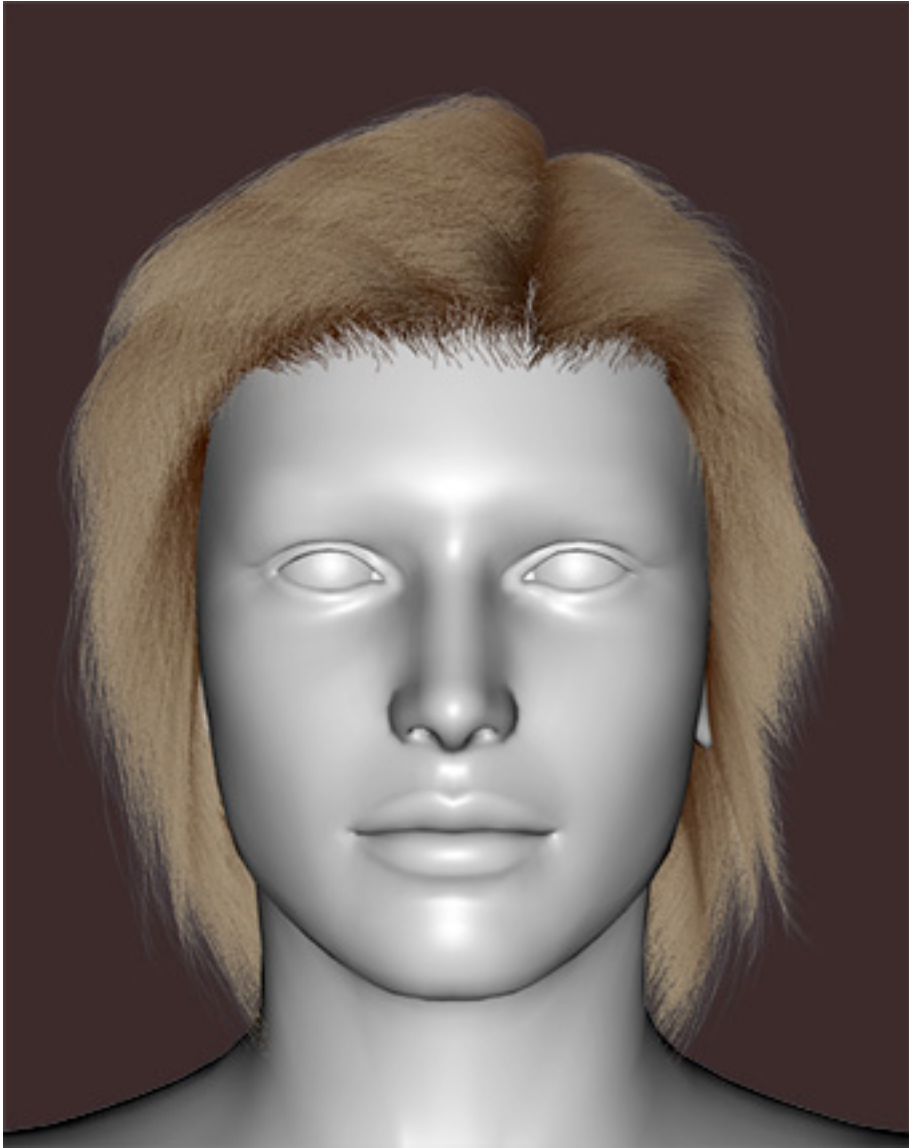
I also like to add a simple SpotLight or DistantLight set to provide specular illumination only.

Shading rate and **Pixel Samples** are perhaps the most critical settings.

Since hairs have a relative small section, a reasonably low shading rate will ensure proper calculation of pixel antialiasing, so that each hair will have a smooth contour.

Sometimes, especially if camera is quite far from the hair, you'll need to use even a 0.001 value for Shading Rate, so that the curves will be accounted with higher precision.

The left figure at page 29 shows a render done with very low settings, no lighting and for preview purposes only; the figure at the right is a render done with medium settings, one specular Pointlight, and one UberEnvironment light.



Thank you very much and we hope you will enjoy the Look at my Hair 1.5 release!

If you have any request or need for support, you may contact us directly at: <mailto:devel@look-at-my-hair.com> , including the DAZ Studio log file (menu Help->Troubleshooting->View Log File) and the Look at my Hair log file found in the folder:

Documents/DAZ 3D/Studio/lookatmyhairAM/logfile.txt

Alessandro and Kendall