Feature

Fursuit Fun!
Adam Riggs

The author of the most popular book on fursuits provides an introduction for costumers who may want to try their hand at it.

Fursuits and Characters

What is a Fursuit Anyway?

Perhaps you've seen animal characters wandering around sci-fi, fantasy, or anime conventions. They look sort of like they belong in a theme park except they're a bit leaner and wilder. Sometimes they're recognizable as commercial characters but often they appear to be their own thing entirely.

These are fursuits -- anthropomorphic animal costumes. The term "fursuit" comes out of furry fandom, the offshoot of sci-fi for fans of animal characters.

It's hard to define exactly what "furry" is so I will fall back on a very general categorization: it's about characters combining human and animal attributes in different ways. This also includes mythical creatures, such as dragons and minotaurs, and animals that don't have fur, such as dolphins.

Fursuits are the costuming aspect of this interest. Many of the characters roaming furry conventions are original creations and specifically tied to that individual. They fit comfortably alongside renderings of characters from popular media and other sources. From a costuming standpoint, the techniques are the same and can be applied to any animal character at conventions, public events, or stage productions.

If that background leaves you nonplussed, just think of a fursuit as being that really awesome Halloween costume you always wanted!

Generalization Caveat

Because it's a broad area of interest, there is no canon around which furry fandom is built. Some of the fandom draws on media while some is self-defining. As such, there is no metric by which to say what is "right" for original characters. There are no immutable rules for materials, historical accuracy, presentation, or performance.

In this article I've chosen to focus on some of the most common techniques and styles. These are not rules for what a fursuit "must" be. We embrace inventiveness and you should choose the materials, designs, and techniques which result you judge best.

Viewers and Venues

Fursuits are for public performance, convention hallway mingling, stage presentation, charity work, kids' parties, and more. Decide what the intended uses are for your costume project. This affects choices such as foot size and soles, flexibility and grip in the paws, maneuverability vs padded shaping in the body, whether you can get in and out without assistance, ease of packing and shipping, etc.

It's important to understand your audience's expectations and how they will

Adam Riggs' alter-ego is "Nicodemus" in the fandom.

be viewing the costume. Is this going to be a realistic character or cartoonish? Is this for a polished performance or informal romp-around fun? How close will your audience be to the costume? A seated audience will see shaping and detailing differently than someone standing directly in front of you who will see it differently from a young kid coming up for a hug.

Building Fursuits

Pieces and Parts

Fursuits consist of a head, bodysuit, hands, and feet. Generally the term "paws" is used for the hands, even though animal feet are also paws. For costume feet the backformation "footpaws" has arisen though "feet" is more common. (I'm not prescribing how our language should work, I feel obliged to mention, just documenting observations.)

Pieces may be combined but it's often more practical to have them separate. Tails are one piece often sewn to the bodysuit. If the tail is large or heavy then it should have internal support and not just be connected to the bodysuit lest the fur pull and distort down the back of the suit. The tail can be supported with a belt worn inside the bodysuit and anchored to the tail's base.

You will also see suits that are "partials" in that they're designed to be worn with clothes. In this case, the costume is only a head, paws, and tail. My rat character shown on the previous page is built in this style. I added fur sleeves to the gloves so

Character studies from "Critter Costuming."

that the character can wear short sleeve shirts. The tail is built into the pants in my example but a great option for partials is to add belt loops to the base of the tail. Then you can thread it onto your belt and let a shirt or blouse hang over the top of it.

Know Thyself

So what character do you want to build? Perhaps a rendition of a character from cartoons or manga? A fuzzy alien from a sci-fi series? Something totally new?

A lot of furries create original characters which embody some aspect of

their personality. The performer is looking to transform into what is both a different character and yet also a portion of their own sense of self. You can adopt this approach by thinking about the character as embodying an archetype or emotion. What comes to mind when you think about creating an animal character that embodies your notion of "playful," "brave," "clumsy," or "cool?"

Use of species stereotypes draws on traditions of myths and fairy tales. As you consider your character's personality and how they project to an audience, certain animal species may spring to mind. You can either build on or deliberately play against these expectations (e.g. the cowardly lion); either way, you should be cognizant of how species selection plays into the design as more than just exterior shape and color.

What Are These Things Made Of?

Fur -- The fur is synthetic, typically composed of either modacrylic or nylon plastics. It's generically referred to as a "long-pile" or "plush fabric" by distributors. The fibers form the backing and the exposed ends that form the pile. It has a knit backing (non-fraying) and only a little stretch (typically around 8-12%).

Note that there is an enormous range of quality in fur fabrics. This is an area where you generally get what you pay for. For a fursuit you want something that has a fairly dense pile and stands a half inch or more above the backing.

Thread -- For fursuits I recommend a 100% polyester thread and double stitching areas that will be stressed. A zigzag stitch is good for fur to spread tension across the knit backing and create a studier seam. You can use upholstery thread if you want areas to be extra secure (e.g. anchoring a tail) but it's not required.

Foam -- The most commonly used foam is a firm open-cell polyurethane foam. This is the same stuff that is used for making cushions and upholstering. Fabric stores carry it but a better price can be had if you locate a dedicated foam distributor.

This type of foam works to build out structure, either for body shaping or in the head. For our purposes, it is easiest to work with in 3/4" or 1" thick sheets. Shapes can be cut from that and assembled, providing a lightweight, soft, and durable structure.

Reticulated Foam -- Also called "filter foam" or "evac foam," this material has large open pores. It comes in black and cream colors. The foam itself is more of a lattice which means this material is washable. This can be used in place of the more common foam for structure, especially if you need to permanently install the foam inside the suit and thus require the washability. The downside is that reticulated foam usually doesn't compress as comfortably and it's much more expensive.
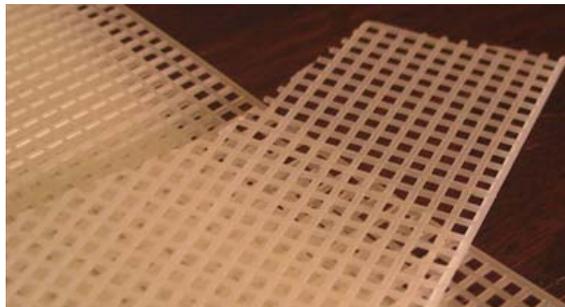
One area where I particularly like to use this is for eyes where the vision is through the pupil. If you slice reticulated foam thinly enough (around 1/4" for 20ppi

Open-cell polyurethane foam.

Reticulated foam.

Plastic canvas.

Anti-pill synthetic fleece.

foam), you can see through it from inside a darkened head but external environmental light makes it hard for the audience to see in.

Plastic Canvas -- Cross-stitch canvas sheets from the hobby store can be used for quick and easy structure (see the heads section below). Dense plastic canvas (Darice plastic canvas #14 is one specific product) can be used for irises. The pores are small enough that it still reads as a "solid surface" but from within you can get some vision. When coloring you need to use a thin paint or ink to ensure you avoid clogging the tiny holes.

Anti-Pill Synthetic Fleece -- This fabric is useful for detailing or parts of the character that need to visually read as "skin" or "fuzzy." On heads, fleece is often used for color insets (e.g. insides of ears) or areas where you want a close fabric that contrasts with the fur pile (e.g. around the eyes). On my Hazrat character, I used fleece for the paws and tail since rats don't have fur there; the fleece provides an irregular and fuzzy surface which matches well with fur and won't draw attention to material details such as a visible weave.

Tips for Cutting and Sewing Fur

Working with fur is a little different from other materials. In some ways, it can be easier! If you have a shaggy fur, no one will notice if your seam wobbles. On the other hand, it can be a bear to force through some sewing machines, especially if you get

to a place where multiple seams intersect. So here are a few quick tips:

Cut from the Back -- Always cut fur with the pile down and the backing up. You can slice through the backing with a razor blade or a pen knife (I like narrow-barrel X-Acto knives), which leaves the pile fibers intact. This means less shedding and no clipped patches from being trapped in scissors. If you do prefer to use scissors, develop a technique of sliding the blade of the scissors through the pile, keeping the tip against the backing. With the fur upside down on a cutting table, you can lift the fabric slightly and support it on the blade to assist you in plowing through the pile.

Hand Sew Tight Curves -- Heavy duty home sewing machines or industrial machines should be able to go through fur.


Cut fur from back with X-Acto knives.

But the resistance and awkward bulk of the material can make it tricky to navigate through tight curves and joints. Consider sewing these parts by hand so you have greater control. A simple blanket stitch interspersed with knots will work fine. When I'm building paws, for example, I'll always hand stitch the finger seams to reduce seam allowance bulk and get accurate matching through the inner curves between the fingers.

Pick your Seams -- When you sew two pieces of fur together some of the pile fibers will get caught in the seam. This creates a "furrow" which is fairly visible. You can use a straight pin or safety pin to go along the seam and pick the fibers out. Slide the pin underneath fibers which have looped down into the seam and gently work them out. Then use a pet slicker brush to comb back and forth across the seam to help hide and blend.

Seam Allowance Treatment -- The reason you get caught fibers is because the pile of the fur continues into the seam allowance. An alternative is to shave or clip away the area of the seam allowance, nearly down to the knit backing. This allows the fabric to come together more tightly in the seam. It requires more careful preparation and sewing, since sewing too far out means a bald patch shows in the seam and sewing too far inside catches pile in the seam and undermines the whole effort. If done right, it does produce flatter and more invisible seams. Whether the time is worth it will
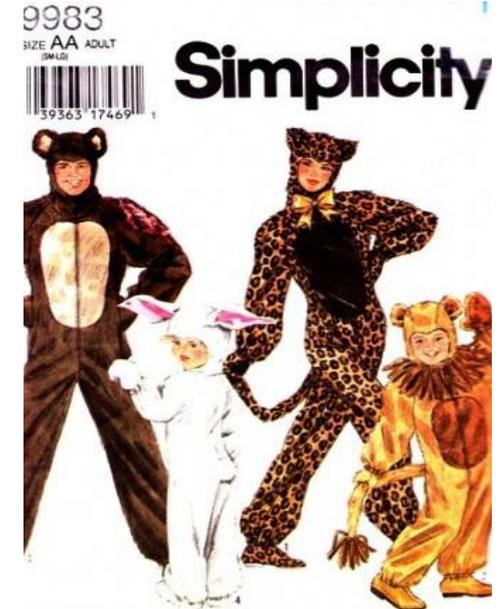
Although this particular pattern is no longer available, there are a number of similar patterns available from different companies. Look in their holiday or costume section of the pattern catalog; there's usually a "mascot" pattern.

depend on your personal preferences, the costume's audience and intended use, and your project's deadlines.

Body Construction

Jumpsuit Design

The body of the character is generally assembled like a jumpsuit, as a single-piece garment with a zipper up the front or back. Placing the zipper along the spine allows for better movement but is more awkward to get into without assistance. I should note that fursuits have moved away from the baggier one-size-fits-all jumpsuit to a more tailored

approach to match the character to the owner's body type.

Body patterns generally have four panels to make the legs and torso. Seams run along the front, back, left, and right centerlines. The arms are two additional pattern pieces, done as a raglan or inset sleeves. The fur is extended to simple cuffs on arms, legs, and neck. You can draft your own pattern or modify a commercial jumpsuit or mascot pattern.

Legs are sometimes separate pieces, particularly if you want to introduce shaping for a digitigrade stance. Digitigrade is the term for animal legs structured so they have a raised joint and are standing on the human equivalent of their toes; canines and felines are digitigrade, for example. Humans (along with bears and rats) are plantigrade, having a heel. For fursuits, padding can be added to the front and back of the leg to create an illusion of digitigrade stance. *[Read about an experiment creating digitigrade legs for a fursuit elsewhere in this issue – Ed.]*

In this case, you need to adjust the bodysuit pattern so the fur leg extends forward and backward. The bodysuit has seams down the sides; there aren't seams on the front and back midlines of the legs if they're extensions of the body. Patterning the legs separately allows you to rotate the seams to where you need them to do the shaping. The legs then connect to the body at a circular seam running over the hips and down through the crotch. The exact shaping and placement will vary based on the desired character shape.

When you have your pattern, create a test version in a cheap, static fabric such as muslin. This helps ensure the pattern fit is good and allows for the desired range of movement. Remember that synthetic fur has minimal stretch to it. If you're making a costume for active use, such as running around with kids or as a sports mascot, you'll want to ensure you have the needed range of movement. Use your test garment to go through some exercises and adjust any areas that pull or bind.

Pattern broken into pieces by color markings.

Markings and Tape Patterns

Most characters incorporate multiple colors of fur. The placement of color boundary lines on the body influences how the character "reads," both as species and personality. Complex markings like tiger stripes require a lot of care when sewing.

Markings are created by breaking pattern pieces into color regions. You should probably avoid layering the fur (e.g. surface application of stripes on top of the base color) because the pile of fur will cause the markings to bulge and, frankly, the suits are hot enough to wear without more layers!

Break out a fabric pen and start drawing markings on your test garment. The goal here is to be able to capture the right color lines as they move around body curves, which is difficult to do when just looking at the pattern pieces laid out on a sewing table. Take the marked item off and cut it apart along the original seams. You can lay this over the pattern and transfer the color lines.

The pattern pieces then get cut apart so that you have separate pieces for each color. The concept is that when you cut the fur and assemble the different colors they will add up to the original body pattern shape. This can be tricky with curving color lines; it's easy to introduce distortions when sewing.

Depending on the color scheme of the critter, it may be possible to simplify the pattern at this point. Color panels may be one piece if the body seam it crosses does not introduce any curvature. This is not a necessary step but if you're versed in patterns the optimization should be apparent.

Tape Patterns

Some parts of the character, such as feet built on a foam structure or the head, may be harder to pattern. If the fur is going on a foam base, you can piece and glue it directly or make a sewn covering. To do a covering of small or complex curves and undercuts, employ masking tape. Cover the surface with two layers of masking tape to create a full tape "shell" over it. If you have problems with the masking tape sticking too much, you can use a layer of plastic wrap as a barrier.

Label the tape shell liberally, including arrows to show the nap direction of the fur over that area. Remove the tape and start separating it into pieces. Your cuts here define your seam lines. As you cut, add alignment markings so you can accurately reassemble it all later. Break it down until you have transformed your masking tape surface into (relatively) flat pattern pieces.

To create the covering, use these pieces as a guide for cutting and assembling the fur. Two things to keep in mind: the tape pattern pieces have no seam allowance, so add that when you cut the fur; also, the outer/marked surface of the tape is the side where the fur pile should be, so when you put the pattern onto the fur backing to trace it, the pattern piece should be "face down." (I promise that makes sense if you think about it.)
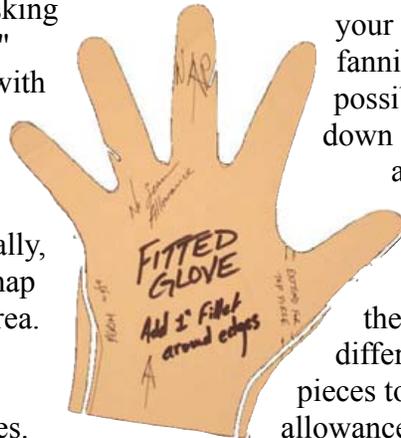
Hand Paws

If you need to create simple paws in a hurry, the easiest thing to do is a two-piece pattern. This is sometimes called a "sandwich paw" because you're tracing the same flat shape for both sides and sandwiching your hand between them.

You can create the pattern by placing your hand flat on a piece of paper, fanning your fingers as wide as possible, and tracing the shape straight down onto the page. Then go around and add about a third of an inch to all sides of the fingers and about an inch around the palm and wrist; this extra material will account for the height of the hand through the different sections. Cut and sew the two pieces together, adding further seam allowance as needed.

Now if you're familiar with glove-making or have even just examined a glove, you'll realize this isn't a "proper" pattern and doesn't really take into account the three-dimensional nature of a hand. The truth is that with a mid-length or shag fur you can get away with a lot of cheats. If you made the above pattern in flat fabric you'd find it wrinkled and pulled awkwardly. Fur hides this, though the paw will still not be fully comfortable to wear.

Let's consider a straightforward alteration which improves fit. Start the same way, with a tracing of the hand. Add no extra space around the fingers this time. Add perhaps half an inch around the base of the

Glove pieces ready to be sewn.

thumb, outside of the palm, and the wrist (note slender pieces in center picture).

That shape, cut from fur, represents the face and top of the paw. Now we cut a third piece of fur: a long ribbon about a half to one inch across (plus seam allowance), depending on the size of your hand. This is a fillet sewn between the other two pieces,

Sewn glove.

Stuffed tails for a variety of critters.

holding our "sandwich" apart. If you want to do a properly detailed job or have fur with a strong nap, you will need to cut a number of these pieces so that the width adjusts and the fur is always flowing toward the fingertips.

This extra spacer provides the height and extra dimension to accommodate the hand. In particular, it allows you to introduce fabric in between the fingers which removes a lot of the binding. It still does not feature a proper inset thumb but will generally suffice for furry paws.

It's certainly possible to create more elaborate patterns. One common reason is to introduce more character shaping. The above design is still fairly "flat" over the human hand shape. Cartoony characters may

have large paws or rounded fingers which require the introduction of extra shaping. That's a bit beyond what I can cover in the scope of this article but check out the following notes on foot construction for some ideas.

Tails

Does your character wag when they see a friend? Do they lash their tail before pouncing? Do they swing their tail for balance as they walk past?

While it can be hard to get such movements in a costume, some clever building techniques can still convey a sense of motion that will make your performances seem more complete.

Quick: How can you tell a black monkey from a ringtail lemur?

Audiences use the tail as an important species cue. Markings on the tail and body help tie the character together. If you're creating an animal character that wears clothes, I still recommend you modify the clothes to allow the tail to be exposed.

Since the physiology of tails is so widely varied, I can't prescribe a single design which will cover everyone's needs. Instead, let's consider three approaches which can be combined in different ways.

Stuffed Tail -- The most straightforward method is to create a simple sewing pattern which captures the general shape and curve. You can use two identical panels though I prefer three. Considering the

cross section of the tail, the top two thirds are mirrored shapes in the body's darker color with a seam along the topline. The third panel is the underside in the body's lighter color to fill out the shape.

I generally leave the top of the tail open and use that to insert the fiberfill stuffing. Remember that stuffing has to be removed for washing. A fancier solution is to create a closure along one of the tail seams and reuse your pattern to create a removable inner pillow in cotton or spandex.

Body suit with stuffed tail.

Wire Tail -- If you need a tail showing more movement, standing upright, or carrying its weight away from the body then you have to introduce more complex structure. Wire armature inside the tail can support it. It's important that the structure be kept light since the tail acts as a lever and the effect of weight further out is magnified. You can use galvanized fencing wire found at hardware stores. To smooth the shape of the wire and distribute weight, put them inside pipe-wrap insulation or pool noodles.

You will need to create a base mount where the tail rests on the performer's body so that structure will be anchored. I like to do this by creating a wide brace that mounts to a support belt worn inside the bodysuit. You want to spread the tail's weight across the belt line since a small attachment point can flex and fail. Additionally, extending out toward the hips helps accurately translate movements.

Foam Tail -- Finally, you can create foam structure in the shape of the tail. This is then covered in a fur skin, similar to feet or a head. Again, remember that the fur must have a closure so the foam can be removed when it's time to wash the suit.

Feet

Feet can be tricky, with special requirements around soles, shaping, and securing. Unlike the other surfaces of your fursuit, feet can't be entirely fur. Well *technically* they can have furry soles but they'll get dirty amazingly fast and you'll go ice skating as soon as you step on a polished stone floor.

You need a rubber sole for grip. You can get this by creating custom-cast rubber pieces, purchasing the material from a cobbler supply outlet, or by using soles already attached to shoes. Though all three approaches are used for fursuits, by far the easiest is to build the paws on top of existing shoes. You can use a pair of sneakers or soled slippers.

Foam feet over slippers, covered with fur.

Next, figure out the shape of the character's feet. Anthropomorphic animals will often have large feet with emphasized toes. Cut shapes from foam and glue them directly to the shoes. Note that common polyurethane cushion foam does not handle water well so if you need feet you can wear outdoors in inclement weather, choose closed-cell or reticulated foam. Foam is generally added to the front, tops, and sides to create the necessary spread and size for cartoon or monster feet.

Where you have foam pieces that need to extend "to the ground," don't actually bring them down flush with the shoe sole. Keep in mind that you will need to glue fur onto the foam which, even after you clip the pile down (recommended) will add a quarter inch. One of the advantages of the shoe sole is that it should be the only part to touch the ground and get dirty.

Now I did mention gluing the fur. You can pattern and sew the fur outer covering for the feet if you choose. This will give you more durable and lighter feet. But piecing and gluing the fur directly onto the foam structure may be faster and easier, especially considering the feet are generally not the star part of a character costume.

Finally, you have to worry about securing the feet while you wear them. If you built them on shoes, you can simply tie the laces securely when donning the costume. However, this also means you need to be able to reach down into the costume foot and have enough maneuvering space to tie shoes underneath that fur layer. Depending on the shape of the foot and the placement of foam padding, this might be a design challenge.

If the fur extends off the foot and up the ankle to a raised cuff that tucks inside the fur leg -- a common design -- the best approach is to install a closure on the back of the ankle. This may be a zipper running up from the heel to the foot cuff, typically halfway between the ankle and the curve of the calf.

Head Construction

Approaches to Heads

The head is where the audience looks first; it's the primary tool you have for engaging with them.

For the purposes of this article, I'm going to focus on fully-enclosed character heads and two methods of building them. Many other masks, hoods, and variations are out there and are just as valid. Note that fursuit heads have some shaping but trend away from the oversized shell-structures used for sports mascots and theme park characters. Instead, they are close-fitting and kept in proportion to the body.

For the design, consider the shape of your character's head and how that aligns with a human head. Assemble reference art and sketches so you get a good feel for the shapes and amount of buildup required.

Practice also helps since, like any other aspect of costuming, this is a skill to be developed and refined in your own style. The flipside is that you may have skills with particular materials that you could apply here. Leverage what you know, dive in, and experiment!

Heads, the "Simple" Way

The first technique is specifically geared toward low-cost heads -- great if you're just getting started or the costume will only be worn a few times and then recycled. The material is plastic canvas, the sort used for cross-stitch and sold in sheets at hobby stores. It's cheap, readily available, and nontoxic. You can cut it to shape with heavy scissors.

The trick is to convert it from a flat, wobbly sheet into a solid shape. Think in terms of lamination. You want the major curves and surface to be two sheets thick. When the layers are bound together with glue, they stiffen.

The easiest way to connect plastic canvas is with hot glue. Be aware, though, that the canvas is also made from a plastic (generally low-density polyethylene) with a low melting point. If you let the glue gun heat up fully your blob of glue can melt straight through the plastic. So keep your glue just warm enough to be fully melted.

Start by creating a headband. This establishes where the head sits and acts as a foundation. Next, cut a piece which runs down your nose and represents the profile of the character's nose or muzzle. Install some fleece or dense foam on the inside of the headband and the place where the profile piece rests against your nose.

The next piece I like to apply is the top-view outline of the cheeks and muzzle; this is a horizontal plane which defines the outermost curves of the cheeks and the sides of the muzzle. Depending on the alignment of features, cheeks and muzzle may need to be in separate planes. Finally, to give the cheek plate something to anchor to, drop a vertical fin down the side of the head from the headband to the top of the cheek piece;
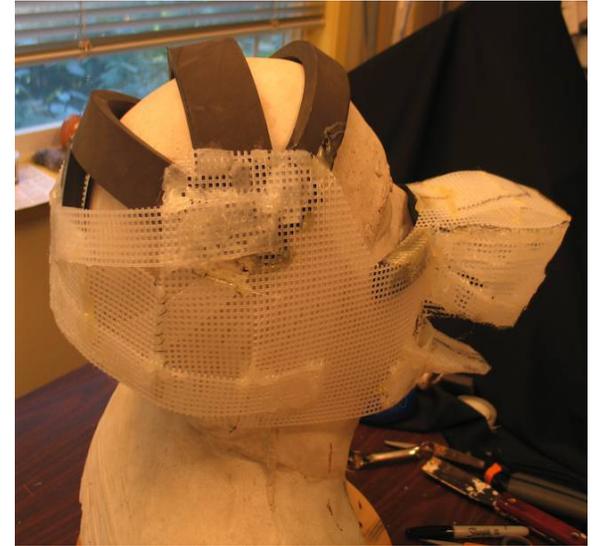
Create a headband, then build up shape.

this establishes the face-on profile for the side of the head and the transition into the cheek.

With those pieces in place -- granted, it may take a little juggling to get them all glued together -- you have a foundation on which to build. These have established the three planes that cut through the head. Now you need to build the outer surface which connects those. Here is where you deal with complex curves and the need for lamination to hold the intended shape.

Proceed all the way around the head surface. Be sure to leave the back of the head open below the midline so that you can easily get it on and off. Be thoughtful about any structure built below the wearer's chin line since this may interfere with neck movement while performing. I recommend using only fabric in these areas.

Heads, the "Proper" Way

While there is no defined proper way to build heads, one technique is the most widespread within the fandom and accounts for most of the heads. This is similar to the previous approach except that foam creates the structure. This is the commonly available open-cell cushion foam. Construction is generally done with 1" or 3/4" sheets. A firm density is preferred since you don't want your head to be too squishy or floppy. Yet the slight give and resiliency of the foam grants costume heads durability and comfort.

Built-up foam coyote head.

The caveat to using this sort of foam is that it does have a limited lifespan. Exposure to moisture and UV light will weaken it over time until it begins to crumble. For the lifetime of a fursuit, this isn't usually a major concern. The primary thing to keep in mind is that you don't want the foam to become saturated with sweat. Always dry your head after a performance; I recommend getting a small room fan and sitting the head on top of it so air is blown through the interior spaces. Heads must be surface cleaned since you cannot immerse them in liquid.

The foam sheet pieces are glued together. The best adhesive I've found for this purpose is FastBond 100, a specialized water-based urethane glue made by 3M. However, it is hard to find. (Try industrial suppliers.) The next most effective option is toluene-based glues such as Goop or Barge. These are toxic and require outgassing time; make your own judgement about whether you want to use them. You can go with rubber cements, such as Elmer's, that are less effective on foam but will be safer. Finally, you can rely on good old hot glue. It will be a bit heavy and messy, since the foam tries to soak it in, but it works.

Build the shape of the head similar to what I described for plastic canvas, establishing the major profiles and planes. Instead of a headband, I like to use a balaclava (spandex hood) for the inside of the head. You can glue foam to this for mount points and support. Some people prefer to keep the balaclava separate so they can pull it out and wash it -- also a virtue.

Glue foam pieces together at the cut edges. Use a blade to make smooth cuts which will provide the best surface contact for the adhesive. You can use an X-Acto knife, snap-blade disposable knife, or bare razor blades.

Foam sheets can also be more easily bent into curves to follow the shape of the head. The end result should be a foam "skull" to be covered by the fur. Keep in mind that the fur will add bulk proportional to its pile. Keep a scrap of your head fur(s) handy and drape them over the foam to test how that changes the apparent shape.

Expressions

Consider facial expressions as you're designing the shape of the head. Some comic and cartoon characters have quite exaggerated expressions which change their whole facial structure.

You need to select a single expression for your head to become the permanent appearance. If you're working from a reference of an existing character, there may be an iconic expression which you want to

duplicate to increase recognizability. Look closely at eyebrow position, eyelids, colors around the eyes (e.g. black rims for contrast or light color patches to open the orbital space).

Adding fur to the two styles of heads shown earlier.

If you're working on an original character, I recommend a more moderate expression. A "slightly happy" or "neutral" expression is most versatile.

Your choice of expression will have implications for how you perform the costume. We are used to reacting and conveying emotion with our faces. In a fursuit, you always radiate the expression built into the head. The more neutral that expression, the easier it is for other aspects of your performance (e.g. stance, energy, head position) to override it and convey a more specific mood to your audience.

Furring the Head

Next, fur needs to cover the head structure. You want the understructure to define the outer surface so there aren't too many gaps the fabric must bridge. The fur also forms a drape around the neck to allow movement and act as the transition to the body.

You can pattern the fur "skin" using the tape patterning technique mentioned above. Cut and sew the pieces together, preferably using a hand stitch to minimize seam bulk. Sew it most of the way and then stretch it onto the head form and do the last few seams. This keeps the head as light and flexible as possible but is definitely more time consuming.

An easier approach, which I confess I often use, is to piece the fur directly onto the head and glue it in place as you go. For this,

start at the back of the head and work toward the nose -- the opposite of the nap pattern in the fur. Put a piece of fur down and glue one edge. Then smooth the fur forward over the head shape, noting where you reach curves or edges where the fur would wrinkle. Cut the fur to fit, right there on the head, and glue the remaining edges down. Then pick up the next piece of fur and glue the back edge so it abuts the one just attached. If you line up the backing edges there will be no visible seam in the finished head. The reason to work against the nap of the fur is simply that positioning the overlapping edge is easier in that direction.

This can be a pretty quick process if you're using hot glue. The downside is that the head is heavier and less flexible because of that same glue. In most cases, the efficiency of furring is more valuable to me than the downside.

Detailing

Fur Clipping -- Trim the fur pile in the facial areas to bring out the character and expression. Consider clipping at least around the eyes and mouth edges. Trimming can be done with a comfortable pair of thread scissors or a pet grooming clipper. Note that some multicolor synthetic furs have an undercoat and guard hairs so trimming it will also lend a color effect.

Coloring -- Synthetic fur, being plastic, does not respond well to common fabric dyes. You can add color tints, highlights, and lowlights with an airbrush or thin acrylic paints once the head is furred. For an airbrush, use alcohol-based leather dyes and very low pressure to get sharp color effects. For those of us without airbrushes, you can get some pretty good effects through brushing acrylic inks or paints. Use a disposable brush and quickly

Painted "mascot" eyes.

follow with a slicker brush to separate the fibers of the fur and maintain the texture.

Neck -- Fur is generally extended down from the head into a sewn tube which covers the neck. You can disguise the transition by turning this into a mane or ruff of fur on the chest. Alternately, you can create a head without a drape and ensure the bodysuit's neck extends up high enough to tuck into the bottom of the head.

Noses -- Fabric constructions are the simplest approach. You can use spandex for a smooth nose or fleece for something a bit fuzzy. Taxidermy, sculpted, and oversize teddy bear noses also work.

Mouths -- I don't generally put a lot of detail inside mouths, preferring an unobtrusive black interior and indications of teeth. Teeth can be created from fabric, such as spandex or felt, for a cartoonish look. Another way to create teeth is to shape them from white Sculpey and drybrush them with acrylic color for tone.

Before and after clipping and coloring.

"Mascot" Eyes -- Character costumes traditionally have eyes which are a large, curved plastic surface. Most of the eye is white, there's a bright iris forward, and a black pupil with specular highlight. This is a direct adaptation of the cartoon representation of eyes. It's also fairly straightforward to build. The curved surface of the eye can be a found item (check for plastic bowls at the dollar store), sculpted, or vacu-formed. I create the pupils with reticulated foam and line them up so you can see through the character's eyes.

"Perspective" Eyes -- One design that's very popular within the fandom is the use of "follow me" eyes. This uses a perspective illusion based on mounting the pupil and "surface" of the eye behind the plane of the face to create the impression that the character is always looking at you! This can be a lot of fun and generally looks good in photos; from a performance standpoint, it does make it harder to "direct your focus" since the character never looks at objects, only the viewer.

"Realistic" Eyes -- You can purchase eyes from taxidermy suppliers or create your own. (The coyote shown above has carousel horse eyes with added leather eyelids.) These are opaque objects which are mounted to the head; as a performer, you must find another way to see out of the costume. The common solution is to use the dark angled patch in front of the eye, which lends this the nickname "tear duct vision."

"Nicodemus" has "perspective" eyes.

Bringing a Character to Life

A Costume is Only Part of a Character

If you've followed the advice here, you now have... a messy workshop with scraps of fur everywhere. Hopefully you also have a fursuit!

But do you have a character? You've thought about personality and emotion during the design. You've considered expression when constructing the facial structure. Now you need to create the missing piece to complete that character: your performance.

Too often I see fursuits treated just as clothes being worn. If you don't add movement to it, the costume will appear "dead." Remember that the face is fixed so if you stand still your performance is indistinguishable from a stuffed animal.

Think about how the character would walk -- how do you project personality by choosing your gait and posture? Even when standing "still," have a series of movements and sways to lend your character a little bit of unobtrusive "animation" to keep them alive.

Practice your movements, ideally with a mirror or video camera. You'll realize that you need to exaggerate movements since fur "hides" anything small. Mime performance skills will definitely prove valuable.

Above all, always have fun! Enjoy being a character and share that with your audience. To me, this is the real magic of costumes. Happiness is not a limited commodity. With a well-timed wave or hug, you can conjure up happiness from nothing more than fur, fabric, and foam.

Adam Riggs, who goes by the moniker "Nicodemus" in the fandom, has been teaching furry costuming since around 1996. He wrote the book "Critter Costuming" and has appeared as convention Guest of Honor at RainFurrest. He currently lives outside Seattle with his wife and kids. Feel free to reach out with questions and comments to nicodemustherat@gmail.com.