

## Interior of Friend's bedroom

*Close-up of alarm clock, time set to around 8 AM. Clock should occupy the lower and middle squares of the middle column of an area broken into thirds horizontally and vertically. In same frame is a low-profile, hardly-visible cell phone lying flat on the same table on which the alarm clock sits, to the left of the alarm clock.*

*The clock is ticking and the second hand is moving. The clock we will use is a prop of the NVC Drama Department; it is a giant-size old-fashioned alarm clock, round with the ringer and two chrome steel bells at the top.*

*After or at the end of introductory information, the cell phone starts ringing – provide some visual indication of this (the cell phone is dancing madly due to its vibrations). Audience will probably expect alarm clock to ring because it is in the center of the frame, but it doesn't. The ring will be an original sound created on the leyla, not from a real cell phone, to avoid copyright infringement. If the cell phone vibrates, it will be in quiet mode (vibration-only, no ring), and it will just seem like the vibrations are associated with the musical ring. Will foley the phone ring, floor manager will cue talent. The ring should either 1) sound like a standard electronic phone ring, 2) should play some melody so stupid or silly that audience will laugh that somebody has such a goofy ring on their phone, or 3) should sound like an alarm clock. I'd prefer the alarm clock sound, but we can postpone the decision until post-production.*

*Hand enters close-up, does something to the clock as if to shut off its alarm (which doesn't stop the ringing), then picks up cell phone crudely, like somebody doesn't want to wake up. Cell phone ring continues.*

*Hand pulls back out of view, holding cell phone. Cell phone continues, then stops.*

*During the time used for the clock ticking and the hand grabbing the cell phone, viewers will see some luminance-keyed-in information: production title, program name and college name.*

*Cut to establishing shot of Friend setting on edge of sofa, waking up, cell phone in hand, looking downward maybe at 45 degrees, since we still want to see Friend's face. Sofa is in disarray, not hugely so. Room is in moderate disarray. This room will be made up in the studio unless we get lucky enough to shoot on the stage if the Drama Department has a suitable set on stage. Not many details will be visible about the room.*

*Lines here are interspersed with delays as if Student is on the phone talking to Friend.*

### Friend

Hey! What's up? ...

Why are you calling me so early? You woke me up...

Yeah, I can help you – what about? ...

It's a surprise? You woke me up this early and you won't tell me ...?

*Friend stops as if interrupted by the caller.*

**Friend**

Yeah, I know how to get to Napa Valley College...

OK, meet you in the parking lot.

*Friend drops cell phone on sofa, flops back onto sofa.*

**Friend**

*(groans sleepily)*

## **Interior of Friend's Car**

*Friend driving car along road lined with vineyards. Friend drives in silence, like he's still trying to wake up, but is intent on getting to the destination. Camera is in the passenger seat, shooting a profile of Friend. Driver's side window is open – it's a nice day. Ambient sound of driving and wind. This should be just long enough for the audience to appreciate the nice countryside of the Napa Valley.*

*Subjective/POV shot from POV of Friend driving, looking at and making a left turn by the on-the-highway sign for Napa Valley College, the one that is near the south end of campus. If we can, get the administration to show a note for the BTV program on the changeable portion of the sign. The speed of the car can be slow here; we want the audience to have enough time to read the sign(s). The BTV program sign will be a clue. OK to pan to keep NVC sign in view; this simulates Friend looking at the sign as he drives past it. Ambient sound of driving and wind.*

## **Parking Lot at Napa Valley College**

*Establishing shot of Friend driving in from left of frame and pulling car into parking space (toward camera) in NVC parking lot. Car left front corner is facing camera, pointing diagonally toward the left, with front of car at left of frame. Friend opens door, gets out, closes door, so that Friend is facing the camera when closing door. Sounds of car turning into parking space, stopping, door opening, Friend getting out, door closing.*

*Student enters frame from right. Student adopts a subtle teasing tone with Friend, since Student knows that Friend had to put some effort into hauling himself out of bed and driving down to NVC that early. Student didn't set the schedule of the upcoming studio activity, but*

*enjoys the fact that he gets Friend to make this effort, ostensibly as a favor to Student, but may well end up being Student's favor to Friend.*

**Student**

You made it, and on time too!

*Student and Friend walk out of frame, going to right side of camera, but not directly toward camera.*

**Friend**

Barely. I was having a really good dream right when you woke me up. I dreamed I found a job that I actually liked.

## **Walking Through Napa Valley College Campus**

*Series of shots of Student and Friend walking through various locations on campus. This is to provide visuals that are interesting but not distracting while the two converse. The first shot will likely be the two characters walking away from the car in the parking lot. Some possibilities include: long shot with camera at end of long hallway with Student and Friend walking toward camera while talking to each other, Student and Friend walking up stairs with camera at top of stairs (see Tyler's shot that first day of portable camera shooting). These shots will be fairly static so to not distract audience with "clever" transitions and to simplify the job of setting up for the shots to ensure that not too much time is spent on taking these shots. These shots will also lead up to the final chroma key shot of this section, so as to make the audience think the chroma key shot is just another shot in this sequence.*

**Student**

Must have been a really good dream. What did you like about the job?

**Friend**

It was technical and there was a lot of variety to it. It was a lot of fun. It paid really well and I could find work wherever I wanted to go, so I could afford to travel.

**Student**

What kind of work was it?

**Friend**

I don't remember. You know how fast you can forget dreams, even good ones. *(slightly exasperated insinuating tone, since he is somewhat annoyed that Student interrupted his dream)* Especially when you're woken up in the middle of one.

**Student**

*(Unaffected by Friend's momentary crankiness)* You might remember later.

**Friend**

*(Not cranky anymore)* It would really help if I could. I've got to do more job hunting today. I haven't found a career that I like, and I need to make some money somehow. I don't want to settle for some dead-end job.

**Student**

I know you really want a technical career.

**Friend**

Yeah, but I don't want to be stuck behind a computer screen in a cubicle all day.

**Student**

I remember how much you liked technical theater in high school.

**Friend**

Technical theater was great, but setting up lights and scenery wasn't enough for me. Although I really liked helping put on a show.

**Student**

*(Spoken slightly knowingly:)* There must be something else you can do that's like that.

**Friend**

In my dreams. So far I haven't found a career I like enough to spend the time studying for it. And, I don't want to spend all that time and money going to a four-year college just to get some lame degree that gets me nowhere I want.

**Student**

You've thought about the military – they have lots of electronics there.

**Friend**

I just don't want to join the military. You are right, though – the military has some great electronics. Their idea of technical theater is a bit different from mine since they run theaters of war, not drama.

*An establishing shot of an outside scene on campus with a foreground free of props, into which Student and Friend position themselves, and a background of the stairway near the side of the 900 building.*

**Student**

Good thing you could help me with my project today.

*Two-shot of Student and Friend at the steps established in the previous shot. This is a chroma key background with nothing in the foreground, so that the audience does not realize this is a*

*chroma key background but thinks it is just another campus scene like all the rest. Medium to full shot of the two characters so as to scale into the front of the background, to look like they fit into the background so that the illusion is maintained.*

**Friend**

I will, I just can't spend all day at it.

**Student**

You don't even know what it is yet.

**Friend**

That's because you wanted to surprise me.

*A little bit of silence here. This is the peak of the beginning section, and the beginning of the turning point to the next scene. When Friend starts speaking, he stops, and Student stops a moment later.*

**Friend**

So, when do I get started helping you?

**Student**

First, you have to close your eyes, like you're dreaming.

**Friend**

Close my eyes? This must be a big surprise.

**Student**

It'll only take a second.

**Friend**

OK, OK.

*Friend closes his eyes.*

**Student**

I'll guide you while we walk.

*Student and Friend take one step as the chroma key background drops, then reappear. Keep the foreground, which now shows the chroma key cyc/wall. It will be like going back into Friend's dream about his dream job. This is a quick transition designed to compress the time of walking down the steps and into the studio. It will look at first like they are going to take a step downward onto the stairway, but instead they will step straight and level since they are in the studio.*

**Studio**

*Continue the same two-shot. Friend looks around and sees the studio.*

**Friend**

*(A bit disoriented)* Hey, what's this? Looks like somebody's shooting a TV show.

**Student**

*(Laughs.)* Yeah, and today you and I are helping shoot it.

**Friend**

*(Shocked out of his disorientation)* WHAT!? I don't believe it.

*Jump to a long shot, roughly 45 degrees to the right from the previous shot, done by a portable camera being run single-camera, film-style. This is an establishing shot, showing Student and Friend in the studio on the right side of the frame, facing toward the cameras (the three cameras preparing to video Steve's lecture, not the camera taking this shot) and the cameras and student crew on the left side of the frame, facing away from the camera taking this shot, the crew intent and busy working on the production. This is to help the audience orient themselves that they are now in a broadcast television studio.*

*Friend stares at the cameras (not the portable camera shooting the scene) for a second.*

**Student**

Relax. You said you'd help me.

*MCU on Student*

**Student**

I'll show you around and you will see how much fun this is. I'm in this great program.

*MCU on Friend*

**Friend**

What do you study in this program?

*MCU on Student*

**Student**

The technology used to create the shows we watch on TV.

*MCU on Friend*

**Friend**

You're kidding! That sounds like fun! What's this program called?

*MCU on Student*

**Student**

*(maybe a little proudly and also jokingly because Student knows that Friend will be surprised)* Broadcast Television Engineering Technology.

*MCU on Friend*

**Friend**

*(echoes Student's words incredulously)* Engineering Technology?!  
*(Remembers)* Hey, what are YOU doing in a technical program? I remember how often you needed my help with math and science in high school.

*MCU on Student*

**Student**

They started me at a real basic level here. The first day of the math class, I learned about natural numbers.

*Widen out to medium two shot on Friend and Student, enough to capture some movement*

**Friend**

*(Say the numbers like somebody setting the beat for a band just before they start playing a song, kind of like the beginning of I Saw Her Standing There, by the Beatles.)* Yeah, like 1, 2, 3, 4. *(In the English version, Friend starts singing some sort of song along with the beat Friend just set, with some air guitar). (In the Spanish version, Friend grabs Student and starts dancing a salsa or something like that, setting the dance beat with the counting like they were practicing dancing).*

*Friend and Student laugh and Friend stops singing/counting as Student delivers his next line.*

*MCU on Student*

**Student**

*(Not self-deprecating, just acknowledging that math and science doesn't come easily to Student, and some pride in accomplishment)* That's right. Even I could start there on my own. And it went up from there until I learned enough math to understand the electronics I'll work with later in the program.

*Medium two shot of Student and Friend, with some studio equipment, but no other characters,*

*in the background.*

**Friend**

How come I haven't heard of this program?

**Student**

This program is the only one like it in the United States, and only one of a few in the world.

**Friend**

Lots of places teach how to make videos. What makes this program so special?

**Student**

It trains you in the technical side of television, giving you hands-on experience maintaining and repairing all the electronics equipment we use in a studio. It takes a LOT of electronics to create a TV show.

*Student gestures, pointing around the studio. Camera keeps its position.*

**Student**

Just look at all this stuff.

*Camera pulls back to show a somewhat wider shot of Student and Friend in the midst of a bunch of equipment being operated on by the studio technical crew, including the huge cameras being used for the education video about to be shot. Friend looks around from where he is standing.*

**Friend**

There must be enough here for a real TV studio.

**Student**

This IS a fully-equipped TV studio, including the professional-grade cameras over here.

*Student starts walking toward the cameras and Friend follows, looking around, approaching the cameras. Camera pans to follow.*

**Student**

I'll introduce you to some of the other students.

**Student**

Brandon and Tyler are camera operators today. *(Addressing Brandon and Tyler)*  
Tell my friend why you are in this program.



*Medium close-up of Brandon, wide enough for Tyler to enter the frame on his line.*

**Brandon (camera 3 operator)**

*(Hamming it up as he often does in front of camera)* I'm usually in front of the cameras, but today I'm staying behind this one to hide from all my fans.

**Tyler (camera 4 operator)**

*(Gestures to Brandon)* You can tell he's another frustrated actor.

*(Focus back to Student and Friend)* We like to act and make videos, but aren't going to wait around until Hollywood recognizes our talents. There's lots of technical work in video, so I can make money while I look for creative opportunities. *(Digs at Brandon)* Unfortunately, Brandon won't find many creative jobs with acting like that.

*Brandon pretends to look offended and can ad-lib some short objection to Tyler's assessment.*

*Student and Friend move to their right a little bit. Camera follows (pans and maybe zooms), taking Brandon and Tyler out of the frame. Student and Friend are gradually moving toward the door to the control room, in an arc whose center is on the far side of the studio from the film-style portable camera (warning: this note may require high school geometry to understand it).*

**Student**

This 's Brian – he's setting up audio today. He used to work on electronics in the Coast Guard, and wanted a technical career after he left the Coast Guard.

*Medium close-up on Brian.*

**Brian**

I got spoiled working on the military's advanced electronics. I had to find something just as interesting, so that's why I'm here. Television has a lot of advanced electronics of its own, especially now with digital TV.

*MCU on Friend*

**Friend**

So not everybody here is just out of high school.

*MCU on Student*

**Student**

Many of us are. There are also many students here who are changing careers. It's a diverse group, with diverse goals.

*Student and Friend continue on their path to the control room. Medium two shot of Student and Friend, similar to previous shot, except Bob is working on a studio light on a ladder. The angle may be difficult to include Student, Friend, and somebody on a ladder, so we may have to have Bob (the lighting engineer) midway up the ladder, holding a lamp with gloves on, performing some sort of maintenance or setup operation on it.*

**Student**

Bob's working on lighting. He's a software developer broadening his technical knowledge.

**Bob**

With what I learn here, I'm hoping to develop software for TV stations. I may even work at a TV station since I'll be a certified broadcast technologist when I complete this program.

*Medium two shot of Student and Friend, who have moved on, now with the door to the control room in the background.*

**Friend**

You have to be certified to do tech work at a TV station?

**Student**

Sure you do. TV stations don't let just anybody work on their equipment. The Society of Broadcast Engineers accredits this program. Any student who maintains a B average in the program will earn an SBE Broadcast Technologist certification.

**Friend**

What do you have to study in order to get this license?

**Student**

First, production, so I can take on any technical job in the studio. That's what we're all doing now; we're making a video about this program.

**Friend**

*(Interrupts)* Yeah, you really pulled me into this thing. What else do you learn?

*Insert some cutaways here of various technical clips of the studio and the electronics lab while Student is delivering the next line.*

**Student**

I learn all the technical details about all the equipment in the studio, far beyond what most production schools teach. I learn enough electronics to diagnose and repair any piece of equipment in the studio, and even to design and build

electronic equipment if I need to. I take apart professional-level gear to learn how it works and how to fix it. I learn how to use and administer the computers and networks that are in today's TV studios. And, of course, I learn all the math and science I need to understand all the technology behind what we do here.

*Cutaways end. Still on same medium two-shot.*

**Friend**

Well, don't just stand there talking; show me around some more.

**Student**

OK, I'll do more of that before we watch the next scene being shot. You'll get a chance to see the crew in action. Right now they are ready to position the cameras and check the sound.

*Re-establishing shot of the studio, set up for a scene of Steve giving a short lecture on how color television is based on human vision. Steve is in the front near a table where there is that little beam splitter model, some tubes. There are three cameras pointed at Steve: right, center, and left. There is an audio engineer holding a boom with a shotgun mike on it pointed at Steve (maybe that looks better than him wearing a lavalier – he might wear a lavalier anyway and the boom/mike/grip can be for show). We could just hang the mike from the lighting grid, but adding an audio engineer adds additional human interest. Student and Friend should probably be in the shot on one side for continuity, but we'll need to check this, or just do multiple takes of this shot with and without the central characters and decide in post-production. Floor Manager will be on the set near Steve*

**Floor Manager**

Bob finished the lighting. Now we can position the cameras.

*Director enters the frame, stopping in front of the cameras near Steve. The three camera operators are at the cameras. Director gestures where the cameras should be positioned while delivering the line.*

**Director**

Camera 4, start off with a medium close-up of Steve. Camera 5, you'll start with a medium shot of Steve on the left side of the frame and the easel with the charts on the right side of the frame. Camera 3, you'll be on extreme close-ups of the exhibits Steve will be holding in his hands. You'll also do the extreme close-up of the slate. Let's set up and do a practice run right here while the sound engineer tests the microphones.

*Medium two shot of Student and Friend in their previous positions, with the door to the control room in the background.*

**Student**

While they set up, we'll go see the control room. Then we can watch some shooting from there.

*Student and Friend walk to and through the control room doorway, turning their backs to the camera as they do so.*

**Control Room**

*Re-establishing shot of Student and Friend walking through control room doorway and entering control room. This will require a bunch of smooth camera moves and challenging lighting as Student and Friend visit the various technical stations. Student will point to the diagnostic equipment as he mentions them.*

*Student walks over to the CCU (camera control unit) station near the door.*

**Student**

Here's the camera control unit station. This is where the camera engineer checks the quality of the video coming in from the cameras.

*Student points to the waveform monitor on the CCU station. There should be something interesting-looking on the waveform monitor.*

**Student**

The camera engineer monitors the overall video signal on this waveform monitor,  
...

*Student points to the vectorscope. There should be something interesting to look at on the vectorscope.*

**Student**

... and checks color accuracy using this vectorscope. There's also a bunch of other adjustments that I won't tell you about right now. *(stage whispers)* Don't tell anybody, but they are actually just a bunch of dummy knobs that we hooked up to impress visitors like you.

**Friend**

*(Shorts, maybe too cool to show how impressed he is.)* Yeah, right.

*Student and Friend move to the audio mixer.*

**Student**

Here's the audio mixer. We can mix in studio microphones, CD player output, and sound from video sources.

*Student starts walking around to the raised deck. Friend follows.*

**Student**

Let's go back here so you can see the server room and the rest of the control room.

*Student and Friend walk back around to the back of the control room and go through the door to the server room, Student leading, Friend following. Don't shoot the entire walk; start the walk, then cut to the end of the walk as they are about to go through the door.*

## **Server Room**

*Establishing shot of server room. Camera is positioned in the doorway leading to the stairwell, pointing toward the video server (primarily) and the equipment rack (as much as possible). Medium shot of Student and Friend entering into the frame from the left, approaching the video server.*

*Student points to the video server.*

**Student**

This is our digital video server, on which we record video and audio. It's a big computer that acts like a bunch of video tape recorders.

*Student walks toward the equipment rack containing the monitors, the vectorscope, the waveform monitor, and the patch panel.*

*Cut to a medium two-shot of Student and Friend in front of the equipment rack.*

**Student**

This is the rack of equipment we use to monitor and adjust the video and audio before we record them.

**Friend**

I am amazed that you learned how to use all this stuff. I don't know half of what this stuff is. More dummy knobs, huh?

**Student**

I knew nothing about this equipment when I got here. Now I use it just about every day.

*Cut to a longer shot.*

**Student**

Let's go see the rest of the control room.

*Student and Friend walk back to the door of the control room, go through, turn right, and walk up the stairs, Student leading, Friend following. Don't shoot the entire walk; start the walk, then cut when they turn right after going through the door (as they go out of view climbing the stairs).*

## **Control Room Platform**

*Establishing shot of Student and Friend on the platform.*

*Student points to the video server workstation.*

### **Student**

This is a workstation for our video server. Here we set up recordings of the video that comes out of the cameras. We also use it to play back what we've recorded to add into other videos we make.

*Student moves to the video switcher, Friend following.*

### **Student**

This is the video switcher. This is what the technical director uses to choose what video gets seen by the viewers. The technical director can choose from any of the camera inputs, video tape player inputs, and can also set up some special effects for transitions.

*Student points to the bottom row of buttons (for the program bus) on the video switcher.*

### **Student**

The bottom two rows of buttons are for the program bus – whatever gets selected here is what the viewers see.

*Student points to the other sets of buttons on the left side of the video switcher.*

### **Student**

These other sets of buttons let the technical director set up special effects or other setups before switching them in.

*Student points up to the bank of monitors above the window to the studio.*

### **Student**

We're just about ready. Sit here and you can watch the shoot on the monitors.

*Friend sits down in seat indicated by Student. Student sits in the TD seat at the video switcher and puts on a set of party line (PL) headphones. Student gives Friend a second pair of PL headphones to wear, and Friend puts them on.*

**Student**

We use these monitors to see what's on the cameras, what's going out to the viewers, and to adjust any special effects we set up.

*Close-up on the program monitor.*

**Student**

The one labeled program monitor (*pushes buttons on program bus to shift what's on the program monitor to show Friend which one it is*) shows what viewers see.

*Back to two-shot of Student and Friend at video switcher. This can be a side or angled-facing shot, since audience does not need to see the monitors right now. We may have to take this with the monitors in the background in case if during post-production we decide that the audience would be just too curious about what they might see on the monitors.*

*Audio now includes the PL as well as the mic(s) on Steve. Student is now acting as the TD, which is one of the key points of the surprise Student is giving Friend.*

**Student**

Stand by on the set.

*A couple of seconds go by.*

**Student**

Ready to start recording.

**Student**

Start recording.

**Student**

*(Soft voice to Friend, covering PL mic with his hand.) We used to wait for a tape recorder to get up to speed, but thanks to our video server, we can start recording right away.*

**Video Server Engineer**

*(off-camera) Recording.*

**Student**

Ready to take bars and tone.

*A slight delay here.*

**Student**

Take bars and tone.

*Show SMPTE color bars on program monitor. Hear 1 KHz tone.*

**Student**

*(Soft voice to Friend, covering PL mic with his hand.) This is the stuff we do at the beginning of every shoot, to make sure that whatever studio plays back our video can adjust their video and sound correctly.*

*Two-shot of Student and Friend at the video switcher. The switcher needs to be shown in detail, so a diagonal shot from the front may be useful. Student points at fader bars on the program bus with one hand, and covers his microphone with the other hand.*

**Student**

*(whispering):* When I give you the signal, pull this fader bar down.

**Friend**

Uh, OK.

*Re-establishing shot of the studio cameras focused on Steve. Steve's background can be some studio equipment, not a blackboard. Steve will be standing next to a table on which will be drawings and exhibits which he will use during his talk. PL audio is still part of the audio track being recorded.*

**Student**

*(via PL):* Stand by camera 3 on slate; stand by to announce slate.

*(via PL):* Take 3.

*(via PL):* Read slate.

**Floor Manager**

*(Reads slate.)*

*Two-shot side view of Student and Friend looking at monitors.*

**Student**

Stand by black.

**Student**

Go to black.

*Student silently gives the signal to Friend. Friend works fader bar and program monitor goes to black. Shoot Student and Friend from the back, with monitors in the background, program monitor visible.*



*Re-establishing shot of studio cameras focused on Steve.*

**Student**

*(via PL): Ready camera 4 with your medium close up; ready mic; ready cue.*

*Floor Manager gives Steve the "stand-by" cue.*

**Student**

*(via PL): Take 4, mic, cue.*

*Floor Manager gives Steve the "you're on" cue.*

*Start of live-to-tape sequence, as directed by the TD. Studio cameras used for video in this sequence. We are looking at the middle camera (camera 4) now. We can use our existing camera numbering scheme. This shot is an MCU of Steve. Steve doesn't have to use this monologue; he can improvise whatever he usually says on this subject, just so long as we get a chance to include some illustrative control room activity.*

*Some of this audio, the Student/TD talking and Steve talking, will be simultaneous just like it would during a real shoot.*

**Student**

*(via PL): Camera 5, stand by with medium shot of Steve and easel.*

**Steve**

Hello, I'm Steve Goze, the faculty member in charge of the Broadcast Television Engineering Technology program here at Napa Valley College in Napa, California.

**Student**

*(via PL): Take 5.*

*MS of Steve, on left side of frame, and a drawing of a human eye, with the lens and retina specially indicated, on easel on right side of frame.*

**Steve**

The topic of this lecture is television's technical basis in human vision and perception. Television takes its technical cues from the response of the human eye to light intensity and color. Each of your eyes has a lens, used for focusing an image of what you are seeing, and a retina, upon which the image is focused.

*Steve flips to the next page of the flip chart, showing a detailed drawing of a retina, including rods and cones, and a drawing of three types of cones together with swaths of the corresponding colors.*

**Steve**

Within the retina are structures called rods and cones. Rods allow us to see details, but they only see levels of light, not colors, just like we would see when we look at old black-and-white movies. In contrast, cones detect color. There are three types of cones: S-cones, which are sensitive to blue light, M-cones, which are sensitive to green light, and L-cones, which are sensitive to red light.

**Student**

(via PL): Stand by camera 4.

**Steve**

The fact that the cones in your eyes can detect red, green, and blue light is why these colors are the three colors detected by television cameras and displayed in your television sets.

**Student**

(via PL): Take 4.

*MCU of Steve.*

**Steve**

Even though cameras detect red, green, and blue, they do this by using imaging devices that only see differences in light intensity, not colors. In that way, the imaging devices are like retinas with only rods and no cones. So, television cameras are, in a sense, completely color-blind.

**Student**

(via PL): Stand by 5.

**Steve**

That brings up the obvious question: how does a television camera see color when its 'retinas' only see black and white?

**Student**

(via PL): Take 5.

*MS of Steve, on left side of frame, and a drawing of a TV camera, including lens, beam splitter, and imaging devices, on easel on right side of frame.*

**Steve**

Well, television cameras differ from our eyes in how they detect color: they have not one but three 'retinas' or imaging devices, one for each of the three colors red, green, and blue. A set of prisms called a beam splitter is used to separate light coming through the camera lens into red, green, and blue components, and to

distribute each color component separately to the camera's imaging device assigned to that color.

**Student**

*(via PL):* Ready camera 3 on the extreme close up of the beam splitter that Steve will be holding.

**Steve**

So, when one of the imaging devices records an intensity level of light, it is actually recording the intensity level for the color of light that is being distributed to it. This allows cameras to 'see' color.

*Steve picks up beam splitter (off camera).*

**Student**

*(via PL):* Take 3.

*XCU of beam splitter held by Steve. This may be mounted on a board, with a flashlight shining into the input of the beam splitter, in which case you'd show the entire board.*

**Steve**

Here's an example of a beam splitter. Notice how when I shine a light through the beam splitter, red light comes out one side, blue light comes out through the opposite side, and green light travels straight through to the other end.

**Student**

*(via PL):* Stand by camera 4.

**Steve**

Each of the colors has been derived from the original light source, so that if the colors were to be added back together, the result would be the full-color image that entered the camera.

**Student**

*(via PL):* Take 4.

*MCU of Steve. Steve has put down the beam splitter.*

**Steve**

There are various imaging devices ...

**Student**

*(via PL):* Stand by 5.

*Steve picks up tube-type imaging device.*

**Steve**

... used in television cameras.

**Student**

(via PL): Take 5, ready 3 on the imaging devices.

*MS of Steve, on left side of frame, and a table of objects on right side of frame.*

**Steve**

Older cameras have tube-type imaging devices, like this one I'm holding.

*Pause to let audience look.*

**Student**

(via PL): Take 3.

**Steve**

This is called an image orthicon tube. These devices are pretty bulky, as you can see, and cameras using them are fairly large.

*Steve grabs a CCD and holds it next to the image orthicon tube.*

**Steve**

Modern cameras use much smaller imaging devices, like this, called a CCD, which means 'charge coupled device'.

**Student**

(via PL): Stand by 4.

**Steve**

Devices like this CCD allow camera manufacturers to build much smaller cameras.

**Student**

(via PL): Take 4.

*MCU of Steve.*

**Student**

(via PL): Ready key on credits, ready black.

*Simultaneously with:*

**Steve**

This concludes today's lecture on television theory.

**Student**

*(via PL):* Take black. Roll credits.

*Cut to black screen, followed by credits.*

*Cut to control room showing Student and Friend, and credits rolling by on program monitor.*

**Steve**

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*Credits complete (credits are pretty short – they aren't intended to be comprehensive here).*

**Student**

Cut.

*Re-establishing shot in studio, showing Steve facing studio cameras, and Floor Manager. Floor Manager gestures “cut” to Steve. Audio feed from studio microphones is still playing through studio monitors.*

**Steve**

That went pretty well. We'll review it later. Say, looks like we have a guest in the control room.

**Student**

*(yells):* Yeah, Steve, he's a friend of mine. I was going to bring him over to meet you after the take. Do you have some time now?

**Steve**

Sure.

*Two-shot in control room showing Student and Friend. Student looks at Friend.*

**Student**

Let's go talk with Steve.

**Friend**

Let's go.

*Student and Friend get up from their seats and start walking off the platform.*

## **Studio After the Shoot**

*Friend and Student enter the studio from the control room door. Both are walking toward Steve, who is still at the cameras in front of the lights. Camera will pan to follow them as they walk.*

**Friend**

Say, you did that pretty well for somebody that didn't seem very technical.

**Student**

Like I said, I started at the beginning. I learned a lot pretty quickly.

*Medium three-shot of Steve, Student, and Friend as Student and Friend enter the frame.*

**Student**

Steve, this is my friend, (*name TBD*). I invited him here today to help out with the production.

**Steve**

You're also giving him a good idea of what's involved in the program, I see. Do you have any other questions about the program?

*MCU of Friend.*

**Friend**

Once students complete the program, what sort of jobs can they get?

*MCU of Steve.*

**Steve**

Our graduates have a pretty high placement rate upon graduation, especially if they are willing to relocate. One graduate works on the Oprah show, others work for ESPN and other companies covering sports events, and still others work for television stations in San Francisco, Las Vegas, and other cities. Some years there are more job openings than there are graduates.

*MCU of Friend.*

**Friend**

What do these jobs pay?

*MCU of Steve.*

**Steve**

A student graduating in 2006 can start out at 32 thousand to 40 thousand dollars a year, although I've heard of recent graduates interviewing for jobs that pay as

much as 70 thousand. Once you have significant experience, you can make over 100 thousand dollars a year as a chief engineer.

*Medium three-shot of Steve, Student, Friend.*

**Steve**

We are going out right now to interview some of our past graduates in their work places. Do you have the rest of the day open?

**Friend**

*(obviously forgetting about having to look for a job that day):* Sure.

*Student looks satisfied, since this is the outcome of the plan he so carefully crafted.*

**Steve**

*(To Friend)* Good. You can help us with the video we're making about this program by helping us interview the graduates you'll be meeting today. Excuse me while I get things ready. *(walks out of frame)*

*This is another turning point.*

**Student**

Hey, I thought you had to look for a job today.

**Friend**

I did. How long does this program take to complete?

**Student**

Is two years too long for you?

**Friend**

It's just long enough to realize a dream.

*The two walk out of frame.*

## **TBD – Interviews with Program Graduates**

### **Closing Remarks**

*Steve summarizes the BTV program. Brian summarizes the TV acting program, or a permanent Drama Department faculty member summarizes the drama program.*

### **Credits**

*I'd like to do a visual credit for each person in the BTV program and each actor in the acting class that participated, as well as the text credits. I'd also like to credit the companies donating equipment to the program.*