PROFESSOR: I want to talk a little bit about producing and realizing your visions, and give an example of some of the things that Chris was talking about. So we shot a video on how engines worked, and there is a part of the video where the two creators were talking about how a turbine engine works.

And I think I might have told this story before, about how we ended up finding like an actual Boeing engine. But there are a lot of ways that we could have filmed this scene. We could have animated it, we could have done a wide frame shot with animation overlay, like I showed you with George's [INAUDIBLE] videos. We could have done B-roll, so we could have just done like close up shots of the engine while you heard Luke explaining how it worked, with his voiceover. Or we could have done a live explanation, which is what we went with.

So this is how George shot Luke. We went with the traditional thirds framing. Again, this isn't necessarily a rule that you have to go by, it just worked really well for this scene. And we went with this because it also gave us the ability to do sort of an interesting point of view shot. The point of view isn't from the narrator, it's actually from the viewer. So I'll show you the clip in a second. But essentially, we did one long take where George moved his camera as Luke was explaining the parts of the engine. So we wanted it to feel like the camera was basically where a person would be if Luke was explaining how a turbine engine works to a person standing there.

LUKE: --won't work.

FEMALE IN VIDEO: What you really need is one engine that can produce enough horsepower to fly the plane. A turbine engine is capable of much more horse power than a piston engine because of the way it uses giant fans to compress the air.

LUKE: At the front of the turbine engine is an intake fan which spins and brings a huge amount of air into the front of the engine. As we move backwards through the engine, a series of compressor blades makes that air more and more compressed, until we get here. And here,

fuel is introduced and burned. And that hot, high pressure flow gets sent out the back of the engine. And that makes the thrust of the engine.

But at the same time, that flow passes through a series of four or five turbine blades, and those blades are connected directly to a shaft at the middle of the engine. That shaft runs all the way back to the front and spins the intake fan. That's what keeps the engine running.

PROFESSOR: So that shot worked because Luke was very comfortable explaining that in one long take. He actually ad libbed that whole thing. And I can see that it's a lot of information at once, so maybe it would have been better to do an animation. We certainly could've done it a lot of different ways. But what I like about that shot is that if you were just standing there, and Luke was explaining it to you, the camera would basically be your eyes, right? Like you would walk along with him, and you would look down at the engine when he pointed to it, you would look back up at him.

So that's the type of movement that Chris was talking about that you can introduce to your video. It would be really different if we had just set up a tripod and had Luke explain the whole thing, right? Like it would have been a very different experience.

GUEST SPEAKER: And it's not random movement, it's obviously very directed, which is the key to many of these kinds of things. It's not [INAUDIBLE]

PROFESSOR: Right. Like we wanted to really follow what the natural person would do if they were just standing there talking to Luke. I want to talk about the lighting real quick. So we were in an airplane hangar, and it was like one in the morning, so it was super dark outside. I mean, we mostly relied on the overhead lights. I don't actually know if we lit this with anything else. Because it's super bright in there. So you don't need super fancy equipment to achieve the videos that you guys are going to do.

So to talk a little bit more about producing, when you think of directing I feel like that's what most people think of when making a video. And directing is a lot about thinking in the present. So you're coaching the host, you're coaching the talent, telling them what to do right there in that moment. You're thinking about what the framing looks like in that moment. Producing is a lot about thinking about the future, anticipating what's coming next, the mistakes that you're going to make.

So on a practical level it's a lot of check boxes, basically. You're thinking about where am I

going to film, what are my backups going to be, where am I going to record voice over? My experience filming at MIT is that it is incredibly difficult to find a quiet place on campus to record clean voiceover. And if you're having trouble finding a spot, come talk to me at any time. I can help you with that.

AUDIENCE: What do you mean that? Why do you mean that?

PROFESSOR: So take this classroom for example, most of the spaces on campus have this hum overhead. And most of you guys will be relying on the lavalier mic, so it's not as bad. But there's just a lot of background noise that is on campus. So if you're just recording plain voice over that you want to use in your video, it would be more ideal if you could get something that's quieter than this room, for example.

So you're thinking in checklists, and some of the boxes are a little more inane, like did we shoot all of the scenes? Which sounds stupid, but I actually missed that on my own video. I forgot to film one of the scenes. And then, did we get clean audio?

So a tip that I would recommend for you guys is, even after you film all of your scenes, I would sit down and just record voiceover of your entire script in a separate audio file. Because you never know, looking back on the footage, there may be sections where the audio isn't very clean. So you may have to rely on your clean voiceover for that section. And maybe use B-roll to fill in. If that makes sense to people. Does anyone have questions so far? Yes.

AUDIENCE: Like you are filming, and then you have a voice--

PROFESSOR: Yeah.

AUDIENCE: --then you want to use a voiceover separately. Then wouldn't the pacing off?

PROFESSOR: Yeah. So for example we shot a video, and part of it-- I'll talk more about it during the editing lecture next week, but if you can find a clean place to transition between the live footage and your voiceover, that's like the best way to do that if you find that some of your footage just has really bad live audio. For every place that you shoot, I recommend that you get room tone, which is basically the natural sound of the room.

So for example, if you were going to shoot in this room, you would shoot the scene, and then you would take your mic and just record 30 seconds where everyone's quiet. And it's just going to record the background noise of the room. And you do that because if there is a case

where you're relying on voiceover that you shot later, or you're cutting bits and pieces from the footage that you shot in this room, you're going to have this gap or a hiccup where the hum doesn't exist, and it's going to sound really awkward in the video. So you layer the room tone underneath when you're editing so that you don't have those hiccups between the cuts that you make.

GUEST SPEAKER: It's kind of a decision that you have to make, too, based on the room. So like with Jeff, we actually did the voiceover in the room. Because it had a hum, so we could have done a better job of the voiceover. But what we decided was that it would be more jarring if there was a major audio quality difference between the voice over and the on camera, you know, had we done it in a studio or in a better space later.

So, you know, it was clean enough, we accepted it. And that's why we had him do everything on the spot in the same place, so that it wouldn't have that drop in and out.

PROFESSOR: Yeah. Does that make sense to people? Like if we took the footage, like this footage where I'm talking here, and then we cut to something where I continue to talk about this class, but I was doing it over a voiceover, and we had some B-roll of you guys working. The first scene, you would hear the hum, and you'd hear me talking. But in the second scene, you would just hear like very clean dead space while I'm talking. And you would see you guys working.

And it would sound and look really weird. It would feel really weird to watch.

GUEST SPEAKER: So we just did another video not unlike the [INAUDIBLE] video, except that the person is in Kendall Square talking. All the on camera stuff was in Kendall Square. And that's really noisy, so we decided in that case to do the opposite. We didn't have him record everything in Kendall Square, because then we would be dealing with problems throughout. But what we did is we recorded the equivalent of room tone. We just got audio of Kendall Square, and then we were able to sort of slowly fade it out after the person was on camera, so that it was more imperceptible. And then slowly fade it back in before an on camera arrived-- you know, comes back.

AUDIENCE: There's no way you can filter it out? Just kind of--

GUEST SPEAKER: Well you can filter audio. What I always tell people is don't. Especially like, if you're not going to spend thousands of dollars doing it, don't think you can do a lot. There are a lot of consumer tools that are available. They generally really degrade the voice. Everyone ends up sounding

like I'm Stephen Hawking.

PROFESSOR: Because the frequencies in the room tone--

GUEST SPEAKER: Very similar, yeah.

PROFESSOR: --some of the frequencies in the voice.

GUEST SPEAKER: So very, very high end, very time consuming tools are out there to do it. But they're out of reach.

PROFESSOR: Music can help hide that a little bit, and I'm going to show you guys examples of that next week. But in general like it literally takes 30 seconds for you to record the room tone. So that's--

GUEST SPEAKER: Yeah, it's definitely worth it.

PROFESSOR: --It's worth it. So in general, as a producer you're doing a lot of anticipatory thinking, which is to help you ultimately realize your big vision for your video. So you're doing all of these checklists, you're thinking ahead of time. Even in pre-production, which is where we are right now, where you're scripting. As a producer you're going to be thinking about the big picture the entire time.

So producing is really looking at the big picture. You're looking at how the microscopic decisions like, where you're going to shoot for instance, or where are you going to record the room tone, how that all fits into your macroscopic plan. So as Chris said, it's really important to scout locations. And when you go scout locations, the two big things to look at are what's the lighting like at that place, and what's the sound like?

And when you're looking at lighting, not only look at the natural light that's available in the room, if it's indoors for example, but how the sunlight affects the room. So when we were pre-producing this OpenCourseWare class, we came and scouted this classroom. And we noticed that there are all these big windows, and it was an afternoon class.

And I knew that the lighting in this room would be really different at 1 o'clock than it would be at 4 o'clock. So we decided that it actually wouldn't be too big of a deal, because people watching the video wouldn't be like, oh my gosh it's dark in that classroom now, that doesn't make any sense. Because obviously we know it's a three hour class.

GUEST SPEAKER: You'll notice Billy's on that side of the room, not on this side of the room.

PROFESSOR: Yeah.

GUEST SPEAKER: That's because if Elizabeth was teaching in that corner, we'd have a problem with the windows.

PROFESSOR: And we thought about if we should just lower the shades the entire time so we have uniform lighting. So those are the kind of questions that you'll ask yourself during pre-production. And sound, again, take room tone. The biggest sound issues if you're outdoors, the wind makes a big difference. Most of you guys are going to just rely on your lavaliers, and they have the little cap. And that does a generally good job, but just take note of it when you go scout.

My personal tip is look for outlets. That's always been like the biggest thing for us is, especially if it's an outdoor location, scouting ahead of time and seeing how many outlets there are helps you anticipate how many extension cords you need to bring. Which sounds like a silly thing, but actually makes a huge difference.

So for example we shot this video with Jamie in the Stata Center on computer switches. And we were with the Digi-Comp. Or the Digi-Cart? Digi-Comp. Which we couldn't move, so we had to shoot in this location. And it was in Stata so we knew it would be really noisy. So we shot at like 6:00 in the morning on Sunday, when no one would be around.

But the thing that we didn't anticipate, because I didn't scout that location, which is bad, is that there's a skylight right above the Digi-Comp-- I always forget what it's called. So noon hit, and we had to stop filming because there was sunlight directly overhead that completely changed the shadows on the prop, and on Jamie. So we basically lost two hours of shooting time because we were waiting for the sun to pass overhead.

So that's why you should scout your locations ahead of time. A quick note on locations, also look at backgrounds. And with backgrounds you should really be deliberate. And go big or go home. So for example, this is a background that I think a lot of people default to when they don't really have anything else to shoot, because they just sit-in their office and they're like, I need to record something really fast, I'll just sit here.

Sitting in front of a window that has blinds on it is maybe the worst possible background that you could use. And again, this is a matter of personal taste, but I cringe when I see this for two reasons. One, it's really back-lit, which is what Chris was talking about earlier. So you'll have

so much outdoor light that it makes your subjects look really dark. And having all the blinds in the background, I think having all those lines is really distracting as well.

This is what happened when George tried to change the exposure setting on the camera to light for me. So I'm lit well, but now the background is completely blown out. So in general, avoid filming right in front of a window where there is direct sunlight coming in. And please don't film in front of blinds.

If anyone is interested in filming in front of a green screen, it's possible, and I'm happy to help you. I think you should be very deliberate with that decision. Sometimes it works really well. This is an example.

FEMALE IN VIDEO: So in order to turn red, neurons from the squid's brain sends signals to these muscles, which pull open all of his chromatophores at the same time.

PROFESSOR: So-- oh, this was the wrong clip. Sorry guys. But there is one example where she says, take note, when I walk next to the squid, he turns red. And so you actually see her walking on screen, and then the squid turns red. And so we used a green screen to film this because we like the actual visual of seeing some sort of object stimulating the squid to turn colors.

So that's an example of a green screen working well, I think in my opinion. If you want to do something like that, I'm happy to help you. But again, you don't have to do it.

So more production tips. Days before, make sure you scout your locations. A word about props. So props don't have to be expensive. And I'm not just talking about props on screen. I'm also talking about the tools that you can use to film. So we're giving you a tripod, and that's basically your only production prop. But as Chris was saying, like you can use desk lamps with paper over them. Let me show you this shot.

FEMALE IN VIDEO: Let me show you how.

PROFESSOR: So those are all dolly shots basically, of us establishing the location of this video, which is in D lab, which is where Jack works. And they're all very smooth pans of looking around at the locations. And we shot that with a cart, like a hand cart that I just sat in, and George pushed me around. So you could buy a super expensive dolly, or you can just borrow a cart from our department, and sit-in it, and have someone push you around.

The dolly is always nicer, but we don't have the budget for that.

GUEST SPEAKER: Great job with steady camerawork by the way. It can be an issue if you're sitting on a cart, if you start getting a lot of this, it takes away from the niceness of the shot. But in this case it was great.

PROFESSOR: We took a tripod and spread the legs out all the way, so that it was like really, really firm in the cart. And then I held it just to add more stability. So it's possible this is another one.

FEMALE IN VIDEO: To figure out how the entire metabolome works, we can use it to engineer plants to create new bio-materials, medicines, and clean energy. We might even discover that plants have the secret to living forever. We just need to unlock their chemical mysteries.

PROFESSOR: So that's actually one of my favorite shots from *Science Out Loud,* ever. And that was all George's idea, so I have to give him credit. But I like it because it's a reveal, like Chris was talking about. It's the way we ended the video. We start off on the plants, focused on it, and you reveal Anastasia at the end. And that's actually-- to get that smooth movement is actually really hard. You might be able to do it with these tripods because the cameras aren't really heavy. And you could probably get enough friction on them to get it to work.

But what we did was, George was using a camera like that one. So he took the tripod, flipped the top head of it upside down, and then he took a boom pole, which is basically this long pole, and put a weight on one end of it, and put the camera on the other, and just slowly let the camera come up from the weight. So I'm all about MacGyvering props if you need to. There are creative ways to get around things and achieve nice effects with cheaper equipment.

The other thing about days before is that you should make a shot list, which is something that I would like you guys to submit. I think originally I had specified you to do that tonight. But it's not necessary to do it and post it until next week. So I'll update you with another email. But a shot list is basically what it says. It's a list of all the shots that you need. So it doesn't have to look a certain way. It's for your benefit only. So organize it however you think is best for you.

But this was my shot list for the reshoots that we did for the snots video. This is the first page of it. So I listed out all the locations that we were going to, what time approximately we were going to use it, so that I could get a good sense of what the lighting would look like in these locations. And then I listed out exactly what lines I needed to say, and what shots we needed to get at each location. And then at the bottom I specified the wardrobe.

So this is a super helpful organizational tool to use when you're planning things. When you are thinking about locations, definitely go big or go home. You can e-mail anyone and just tell them you're doing a project for a class at MIT, and you'd be surprised what you could get. We shot at a horse farm in Acton. We shot in an airplane. We shot at a skydiving zone. We shot at the butterfly exhibit at the Museum of Science.

Most of the labs here, especially since you're students, are going to be super open to having you. And again that's like your opportunity to create a window into a world that most people don't have access to. So definitely take advantage of that. If you have any issues getting into a location, just let me know.

The day before, check all your equipment. Check the batteries, that's the biggest thing. Bring spare batteries. If you need spare batteries let me know. Double check your locations. If you're meeting people, make sure that they know that you're coming. And check the weather.

And then day of. So to help keep you organized I recommend that you use camera reports or log sheets. And what that looks like, and again you can set this up however you think is most useful to you to use. These are the camera reports that we use for Science Out Loud. But basically it's to help us keep track of what video file is what. And when you're shooting like for six days straight, this is really important.

It may not be as vital to you, but it'll be really useful when you go into edit. But it's basically saying, this video file was scene two, take two. I thought it was OK. There were two good takes in there. The last one was the best. Make sense to everyone? Let me know if you have any questions. Yeah. That's pretty straightforward.

And I would also recommend looking at the dailies. So I guess dailies refers to all the footage that you take during a day. Like maybe during a movie production or a TV production. And the dailies for you guys would be like, at the end of the day look through all the video footage that you have on your camera and just take note of what you shot. Make sure that it's good.

What you don't want is to shoot your entire episode and realize that the camera settings had somehow muted you and so you didn't have any audio. So that's why looking at the dailies is important. Also back up and label all your files like right after you get back from a shoot.

So the biggest production piece of advice, or like heads up that I would give you guys is that it

takes a lot of time. Even if the locations are scouted and everything's sort of organized perfectly the day of, you're going to take-- you're going to do a lot of takes. Even if the person says the line perfectly, try a bunch of deliveries. So remember how George was saying like, say it really loud! Now say it like however you want, right? And you got a different style. Try a bunch of deliveries.

Try a different bunch of point of views with the camera. So maybe you shoot someone straight on, then you try something from the side. You try a different movement. And then like try different types of framing. And Chris's piece of advice, which was like, most people tend to not get enough footage than get too much, is really true. Shoot like you're going to use everything, and then when you edit, you're going to edit it like you're not going to keep anything.

But when you're shooting, you always want to have more to work with, because the worst feeling is when you're sitting, editing, and you're like, I wish I had shot x y z. It's the worst feeling. So it's going to take a lot of time, because you want to create as many options for you as you can. Any questions about that? No? OK. So I'll show you an example of this.

No, one more thing. A note about clothing, because sometimes this comes up. So in general you don't want to have really fine print. So I always try to avoid stripes. This is probably like the closest or the widest difference in your stripes as I would recommend getting. Generally like solid colors work the best on screen. And then the material, bring a couple different sets of shirts with you, because sometimes like the silkier material brushes up against the mic a little bit more, and you hear that actually on the audio.

I will show you some raw footage from the snots video. This is super embarrassing for me, so. But I think it's good. And maybe will just sort of set the tone that this is a safe space where you can feel like you can just be yourself. But this was for B-roll at the beginning of the video that was literally going to last-- it's going to last one second in the final product. I literally mean I think it's going to be a one second clip. And this is the amount of footage we shot for it.

FEMALE IN VIDEO: --little weight is so funny.

MALE IN VIDEO: OK, thank you. And go. Put it down and get the little weight. Both hands. Do the thing where you like, you're bringing it up with your right hand, and then you're sort of like spotting it with your left a little bit. OK. No, no just two fingers on the other hand. On your hand, on your hand, the back of your hand. Like

FEMALE IN VIDEO: This?

MALE IN VIDEO: Higher. Turn the weight more. Yeah. Just go like this. Put-- yes, and then like, as if you're helping it up.

MALE IN VIDEO 2: [INAUDIBLE] just like, supporting it.

MALE IN VIDEO: Yeah, like that, but don't take your face out of frame. Slower. Struggle a little bit more. All right, good.

PROFESSOR: So the point of making you guys endure that is that the final clip is going to be just, right? Literally a second. This is at least two minutes worth of footage. This was like the third take. So this is what I mean by get as much as possible. Try as many different things as you can. Because we could have used the first one where I just like lifted the weight, but the last one was really the best take out of all of them.

And it wasn't-- we didn't achieve that. Or we achieved that because George made me do it for like 10 minutes. But don't tell him I said that. So these are all the day of things. Now for the day after, take a step back for now. It's going to be hard to go in and edit your stuff like right after you finish shooting it. You want to give yourself a little bit of time to sort of clear your perspective. And I'll talk more about this during the editing lecture.

But even when you do the camera reports and you're logging sort of what the best takes are the day of, you might watch it a couple days later. And I recommend re-logging everything and going through footage again later. And you might find that the thing that you liked during the day of, maybe you liked it because you were starting to get tired, and it's going to look a little bit different later. So that's why I just recommend the day after, just taking a step back.

Let's see. Oh. With the whole multiple takes thing, I forgot to mention this before, but I thought of it when you were doing your lecture. I would also recommend doing takes from varying degrees of separation from your subject. So say your host says, I'm going to say this line, and you shoot it from where Chris is standing. Even if the host like nails the line perfectly, tell them to do it again and shoot it from maybe from where Yulia's standing. And tell them to do it again, and shoot it from like right here.

It's just good to have those varying degrees of separation. It'll be easier to do the zooming and

everything in post. But again, having those options to work with. You're not going to know which one you're going to use necessarily in the moment that you're filming. So that's why it's good to have a couple options.

GUEST SPEAKER: The term is-- the technical term, not that it matters, is called, coverage. So basically, you cover yourself. I don't really know how I'm going to edit this together, so I'm going to give myself as many choices as possible in the edit room. Because even the best directors don't know exactly what they want. I mean there's Alfred Hitchcock supposedly only filmed exactly what he wanted. And his editors went insane because they could only do one way.

But pretty much everyone else who's ever worked at any level in film and video does coverage.

PROFESSOR: Does anyone have questions? The rest of class, we're going to let you go actually film a scene from your script. And maybe this is a good time to take a break, but Chris and I will stick around if you have questions about producing your specific scene, or actually using any of the equipment, we'll be around to help you with that stuff.

AUDIENCE: Can I make one other suggestion, or just reinforce one thing about producing. This comes up over and over again, and it was a very hard lesson for me to learn initially. And that's being realistic about your schedule. You know there's a tendency to want to pack a ton of stuff in and to be very ambitious. And what happens is that you have to give enough time for setting things up, breaking things down, moving from this lab to that lab, or this location of that location, eating something, figuring something out.

So if you go like, well, OK. This is a 10 minute scene, this will take me 20 minutes to edit. And then we'll be over at Stata, and we'll shoot that two minute scene in five minutes. You know, very, very quickly get behind schedule, and then the panic sets in. It's far better to have a schedule that's realistic, where you really think about, not just what it's going to take to shoot, but what it's going to take to set up, breakdown, figure stuff out, and move. And then execute the schedule in a realistic way so you're not panicking, you're not freaking out, you're not calling people and saying, I know I said I would be at your lab at 3:00 but I can't get there till 5:00, can you stick around? You know, whatever it may be.

So just be very realistic.

PROFESSOR: For the Science Out Loud episodes, we allot at least 12 hours per five minute episode in terms

of filming time with the students. Now that's a huge number, mostly because the thing that's most time consuming for us is setting up the lights, which is something that you're not going to have to worry about. The lighting actually-- I mean, it's by far the most time consuming thing.

But it gives you an idea of-- that's a really great point I'm glad that you made it-- that it's more than just the amount of time it takes for you to say a line. Hopefully you won't have that panic, because the way this class is structured, it's very front heavy. We've had a lot of lectures so far but after the editing lecture, that's actually the very last one. And the rest of the class period will mostly be for you to work on stuff during class time.

So don't worry too much about that. We tried to anticipate that for you guys. But just to let you know. I forgot had a couple examples for you for some of the stuff that Chris was mentioning. And I'll play them real quick.

MALE IN VIDEO: What is the most awesome place in the world? Seems like that would be pretty much the most subjective question ever. But this week, scientists used a set of objective criteria to come up with a list of the world's most biologically important places. There might be--

PROFESSOR: So that's an example of having zooms, but not actually showing you zooming with the camera, right? And I think they do it for a couple reasons. He probably-- he might have messed up his line in between, and so that was a way to sort of cut in between and not make the cuts like super awkward, by having a zoom in and a zoom out.

And it's sort of like a rhythmic visual pacing thing, too. It cuts in like after he says--

GUEST SPEAKER: It's kind of equivalent to, oh, different angle, pay attention. It's a different convention than television, but it comes from a very similar place. You know, if he was just standing there, delivering without edits, there'd be this-- there's this terror that you might turn away, and might not watch it.

PROFESSOR: To achieve that, though, if you wanted to do something like that, I would say, again, you could even film this with a tripod and film yourself. But I would shoot yourself-- that sounds weird-- I would take the camera and put it on tripod like that far away, deliver your whole sentence, and then move it forward and deliver the whole thing again. Because you don't know exactly where you're going to cut into that.

GUEST SPEAKER: And that's clearly what most people-- I mean, this is a very conventional thing you see on the web all the time. And that's how they film. You know, a bunch of takes of wide, a bunch of

takes of close, medium, whatever. Editing.

PROFESSOR: But the point is you're going to be saying the same line multiple times, even if you nail it. This is where a zoom might work.

[VIDEO PLAYING]

PROFESSOR: So I say, or is it. But we use the zoom there intentionally to make it funny. Which hopefully it'll read funny in the actual thing. So again, there aren't like hard and fast rules were you should never ever use a zoom, or you should never ever center the person, or you should never ever--

GUEST SPEAKER: It's interesting, I mean, you know, I was thinking about that whole centering thing after the other day, Monday. And a lot of times when people break those kind of traditional rules, is for comedic effect. And center frame stuff tends to read funny. And you see that in movies all the time. If you start paying attention to this. If you go to a comedy, things tend to be more center frame than if it's a drama.

And I think one of the reasons that vlogs are often center framed is that, even if they're not funny, that's the affect. It's like this is amusing, this is light, this is not scary. And that's why people center frame. And you know, you can, too. If you want to.

PROFESSOR: All right so, at this point I will let you guys free. Oh, sorry I have another thing to say. The film that you've seen today-- the scene that you film today won't be due until at least Tuesday. If you need more time to work on it, we can push it to Wednesday, too. And that's because I really want your focus to be on honing the script. Because Monday will be our table read, where everyone reads their script aloud to each other. And you're really going to get the most out of the table read when you come to it with as complete as a script as you can.

I'm not saying that what you have on Monday should be as close to final product as possible, but it's just really hard to give concrete feedback to something that isn't fully fleshed out. So do try to come on Monday with as complete of a script as you can, because Monday is going to be the most useful to you if you do.

So that being said, some people have already uploaded second drafts onto Tumblr. If you could upload stuff by tomorrow at noon, I can give you feedback on it so that you can incorporate that before Monday. And the best way to get feedback from me is to double post

to Tumblr, and then also write a Google doc, and just email it to me, and give me commenting permissions. That's how we actually edit all the scripts from Science Out Loud.

So I'll show you, real quick. Season two. Let's go to this one. Yeah, so this is eventually how we asked the students to format their scripts. You don't have to do that for Monday, but eventually you're going to want to do it. I think it makes organizing things a lot easier. So it's just like a four column format, where you specify what scene number it is, the location. So OS just means on screen. It means like you're not going to B-roll, you're just going to be delivering it live. Just a description of what the video looks like, and what the script is itself. And if you share it to me on Google Docs, it just makes it easier for me to comment for you.

And George also said that we will give script feedbacks this weekend too. So if you can e-mail us this stuff by Saturday at noon, we can give you lots of feedback before Monday.

AUDIENCE: I have another tip that I usually forget about because I'm not used to talking for long periods of time, and you guys will probably get tired at some point while filming. Bring a water bottle and probably snacks too, if you get hungry easily. Just because when your voice gets really dry and starts cracking, that might ruin a take that otherwise went really, really well. And it helps with the consistency of your voice. And you can edit together something that you did later with something that you did earlier if your voice sounds like consistently fresh throughout it.

Because I've had problems trying to edit audio where at the end of it, my voice is really, really raspy. And at the beginning it's still good.

PROFESSOR: Yeah, that's a great point. I'm glad you brought that up. So we try to cram everything in as much as we can, which is purely because of logistical issues, and because of our budget. But you're going to have the time this month to where you're not going to have to shoot your entire video in one day. So really try to spread it out over the course of several days. And that's built into the class time. But I will just say from personal experience, it is so incredibly difficult to film for more than five or six hours straight. You just get really, really exhausted by the end of it. OK.