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NEWS & OPINION

Chief medical editor's corner of the world
Do you have something to teach? Try making a film

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by Richard S. Hoffman, M.D.

Figure 1. Dr. Hoffman suggests using Adobe Premiere Elements to edit films on a PC
Source: Richard S. Hoffman, M.D.

Dr. Hoffman accepts the grand prize from William J. Fishkind, M.D., judges' panel chair, at the 2011 ASCRS Film Festival
Source: Convention Photo by Joe Orlando Inc./EyeWorld

One of the most highly anticipated events at the ASCRS Annual Meeting is the Film Festival awards ceremony. This rivals Hollywood's Academy Awards for suspense and pageantry as judges adorned in formal black tie attire present the excited winners with their statuette onstage. Besides the fun and entertainment value, the ceremony celebrates the tremendous teaching value of a carefully edited and narrated video—a medium that is

Producing a film for the ASCRS Film Festival is a labor of love. The first time I submitted a film was in 2008 ("Scleral Fixation Without Conjunctival Dissection"), and it won first place in the New Techniques category. It was a great honor to accept the award on the Film Festival stage. Two years later I submitted my second film, presenting options for treating a partially subluxed one-piece IOL that was causing recurrent vitreous hemorrhages. It won first place in the In-House Production category. Winning an award at the Film Festival is a product of having a good case or topic, producing a high quality video, and a little bit of luck. When producing a video, I like to adhere to my three Es for success: educate, entertain, and exude elegance.

When deciding to begin a film, the producer needs to decide if he/she is going to submit a case study, a topic for review, a new technique, etc. The easiest film to produce is a simple surgical case, but even these films require sophisticated editing, thought, and good narration. For PC users, Adobe Premiere Elements is an inexpensive program (Figure 1) that allows for very sophisticated editing but is simple and intuitive to use. The most complex editing features can be learned in under a week. For Mac users, iMovie or Final Cut seem to be the programs most widely used. A good way to start the framework for a film is to structure it like one would if he/she was writing a paper on the topic. The third film I submitted, "MI" ("Minimally Invasive Glaucoma Mini Shunt Implantation Without Conjunctival Dissection"), was first written as a paper for publication, and it was very easy to design the film around the structure of the manuscript.

When I started "MI," I decided to divide the film into multiple sections: a brief intro, a description of the technique, a proof of concept in the wet lab, a demonstration of the technique in vivo, and a brief conclusion. When I create a film, I like to have a background image that is consistent throughout the video, similar to a background in a PowerPoint

particularly important for surgical education. Of course, producing a quality teaching film is a special skill all unto itself. As anyone who has ever entered the film competition can attest, this is a time intensive project that combines innovation, scientific discovery, creativity, and teaching.

Last year, from approximately 170 films submitted, the ASCRS Film Festival grand prize was awarded to Richard S. Hoffman, M.D. In his film titled "Minimally Invasive Glaucoma Mini Shunt Implantation Without Conjunctival Dissection," Rich demonstrated an

innovative new method for trabeculectomy. For this month's column, I asked Rich to discuss how he planned and produced his award-winning video. The details of his innovative

presentation. For this film, I created a fractal movie using a sophisticated program called Ultra Fractal. The fractal movie gave the sensation of moving down a tunnel but was "turned down" to a 20% opacity setting so that it was barely visible except when the section title dividers faded in, at which time the opacity setting was increased. The fractal movie was set in the background and all other videos and images were layered on top.

For the intro section, I showed an edited trabeculectomy with still images that faded in over the edges of the central film and then showed a routine EX-PRESS shunt (Alcon, Fort Worth, Texas) implantation. These were edited clips from my partners. The next phase of the film was "drawings" that I created in Adobe Photoshop. Each drawing probably took a week to create and was originally meant for the written manuscript. The drawings were created by taking various images of a human eye and cutting and pasting the conjunctiva, iris, and other features and layering them on top of each other within the Photoshop program. For anyone who has not used Photoshop, it can be thought of as layered pieces of clear glass, with each layer containing an image. By cutting and pasting surgical instruments or wound configurations, and casting shadows and light reflexes, very detailed and realistic images can be created. The problem with having drawings within the movie is that images do not move, and this is, after all, a movie. I got around this problem by using a technique popularized by Ken Burns in which he would narrate over old photographs while slowly panning in or out of the image to give a perception of movement. I also transitioned from one drawing to the next using a "page turn" feature, which gave the static drawings the sense of movement. When something specific in a drawing needed to be pointed out, a cutout of a photo of my hand would fade in to point out the precise location of interest.

When editing video clips, there is a lot of work that goes into creating a smooth, elegant-appearing clip. All extraneous waiting between maneuvers must be cut out, and the remaining components are pasted together. I like to increase the magnification of images so that the eye fills the entire screen. In addition, the centration of the image can be manipulated within the clip using "key bindings" so that the image is always centered on the screen. The pieces of remaining video are "pasted" together using cross fades so that the movement from one maneuver to another appears seamless. I also like to time-stretch each small clip to speed up the action and make me look faster and more competent than I actually am. Time-stretching allows a clip to be sped up or slowed down. Slowing it down can be useful to repeat a maneuver or misadventure in slow motion for effect. Slightly speeding up the clip avoids boredom. When speeding up a clip, I like to avoid compressing the time more than 25%. If the clip is sped up more than this, it starts to look unnatural and jittery. In "MI," there are over a dozen various video clips that are flying in and out of the fractal backdrop throughout the film. Each one was independently edited before being placed in the final video.

After finishing the visual portion of the film, the next step is to create the narration and soundtrack. For the soundtrack, I create an ambient music track that slowly builds in complexity throughout the film. The best soundtracks are classical music since they add a synesthetic effect to your surgical technique. When people are watching your highly edited video with Mozart or Bach in the background, their mind confuses the elegance of the fine classical music with your surgical video, and again, you look better than you really are. One mistake I see some producers

surgical method are then explained in Rich's monthly "Tools & techniques" column, which immediately follows this article. I hope you'll enjoy reading his "behind the scenes" commentary.

David F. Chang, M.D., *chief medical editor*

Watch these videos on your smartphone or iPad using your QR code reader. (Scanner available for free at your app store.)

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Or view Dr. Hoffman's award-winning videos at www.eyeworld.org/ replay.php.

make is having music in the background that overwhelms their video. In "MI," I tried to create an ambient track that was barely noticeable after the first minute. With each new section of the film, I added a new musical instrument or element to avoid boredom and build suspense, and at the end, I dropped out many of the elements, to signal that the film was concluding. The music software program that I use allows me to watch the video and add sound effects precisely. If you watch "MI," you will hear high-pitched sweeps as the video clips enter the screen from the side or from the back. You can also hear a stretching sound when the wound is "stretched" in the drawing section, and the sound of pages of the Journal of Cataract & Refractive Surgery turning during the page turn feature of the drawing section.

The final step is to narrate the film. When I am putting the video clips together, I have in my mind what I am going to say and how long each clip should last. For the actual narration, I write out a script and then record it several times. In this way, I can cut out mistakes and use portions of other "takes" so that I don't have to narrate the whole 8 minutes perfectly. The music program I use for narration allows me to remove pops and sibilance (that's the exaggerated S sound some people make when recording their voice), and I can add a little reverb and equalize frequencies to improve the quality of my voice. There is a free program that can be downloaded online called Audacity that has most of what the average user would need for audio recording and editing.

Creating and submitting a film to the ASCRS Film Festival can be very rewarding for both the producer and viewers who will hopefully learn from the film. I have found that although it can be a time-consuming project, it is incredibly fun to get lost in the creative process. I encourage any surgeons who feel they have something to teach to take the plunge and try submitting a film.

Editors' note: *Dr. Hoffman has no financial interests related to this article.*

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