

Instruction Guide for Producing an Animated Video

SUNY ONEONTA iGEM TEAM

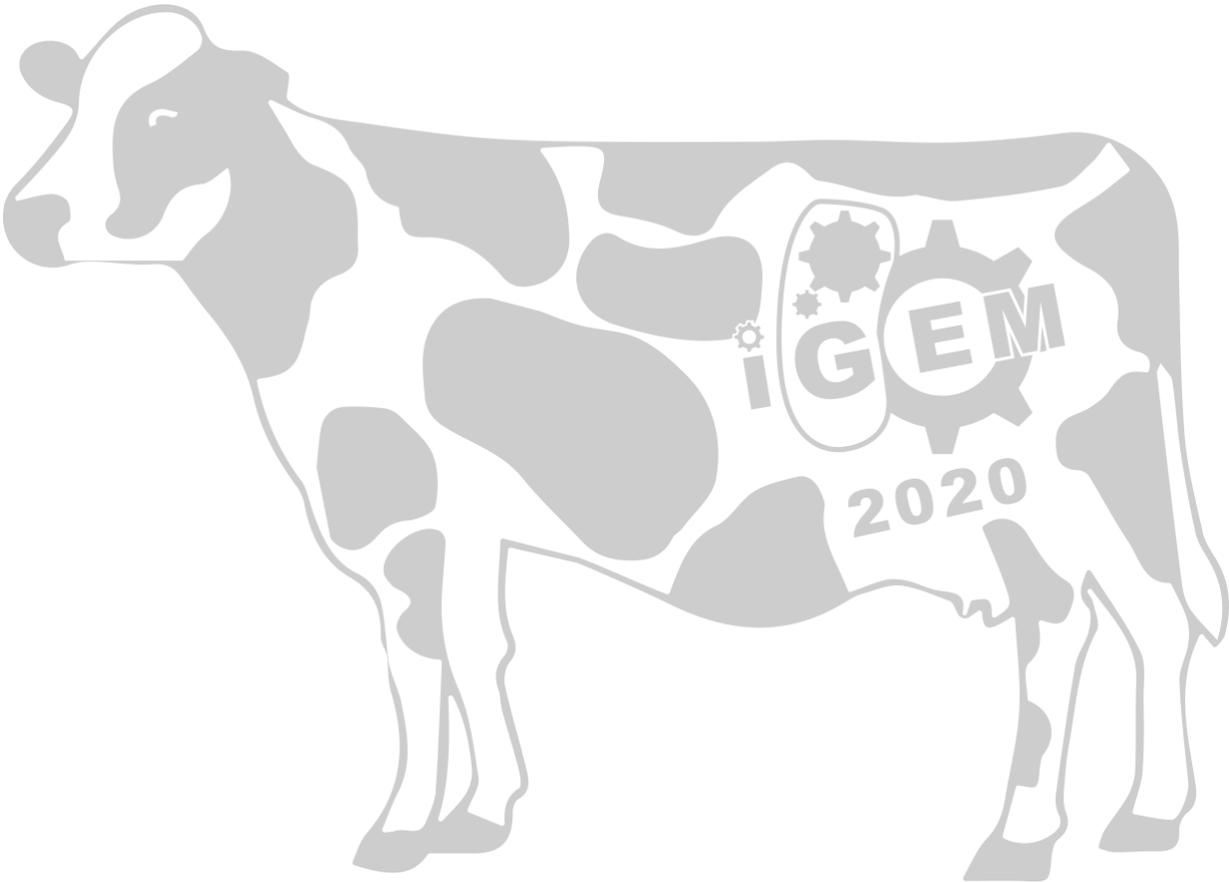
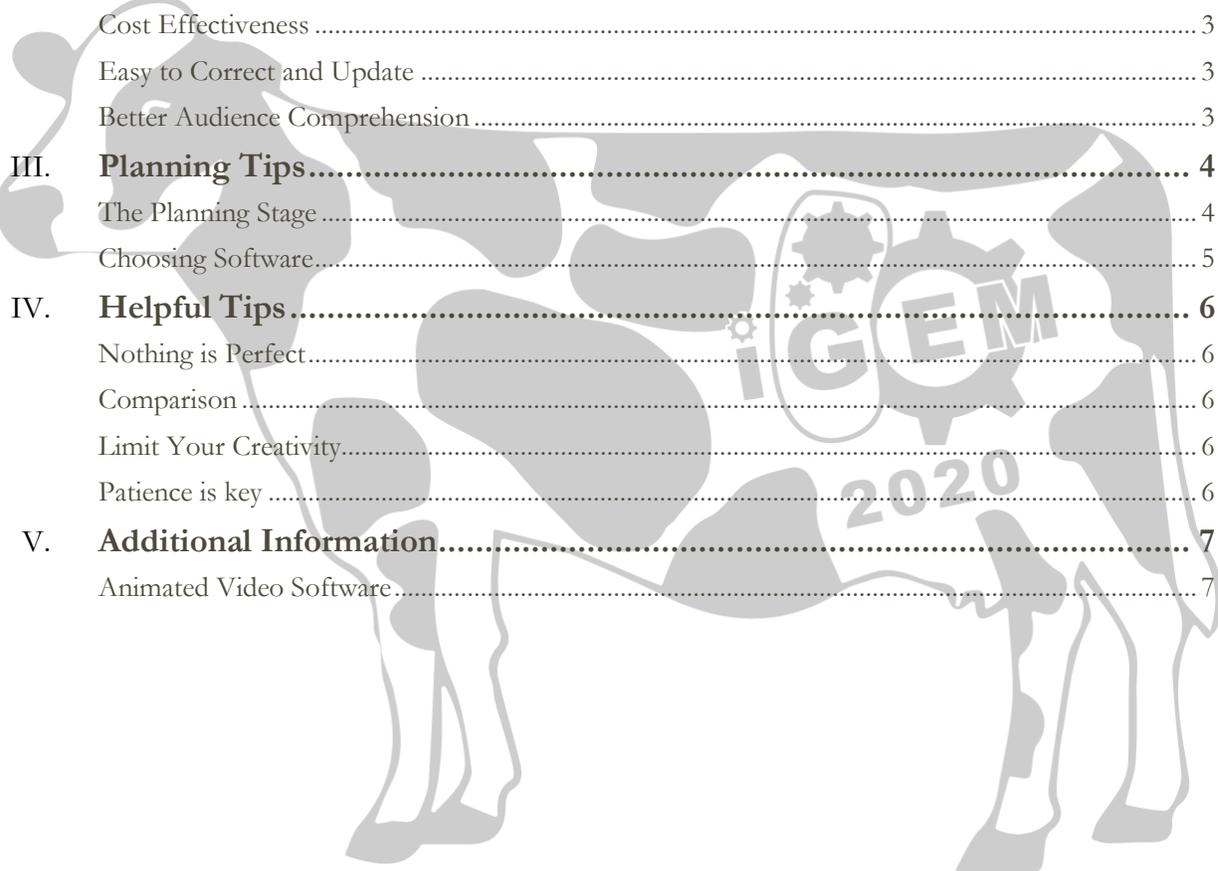
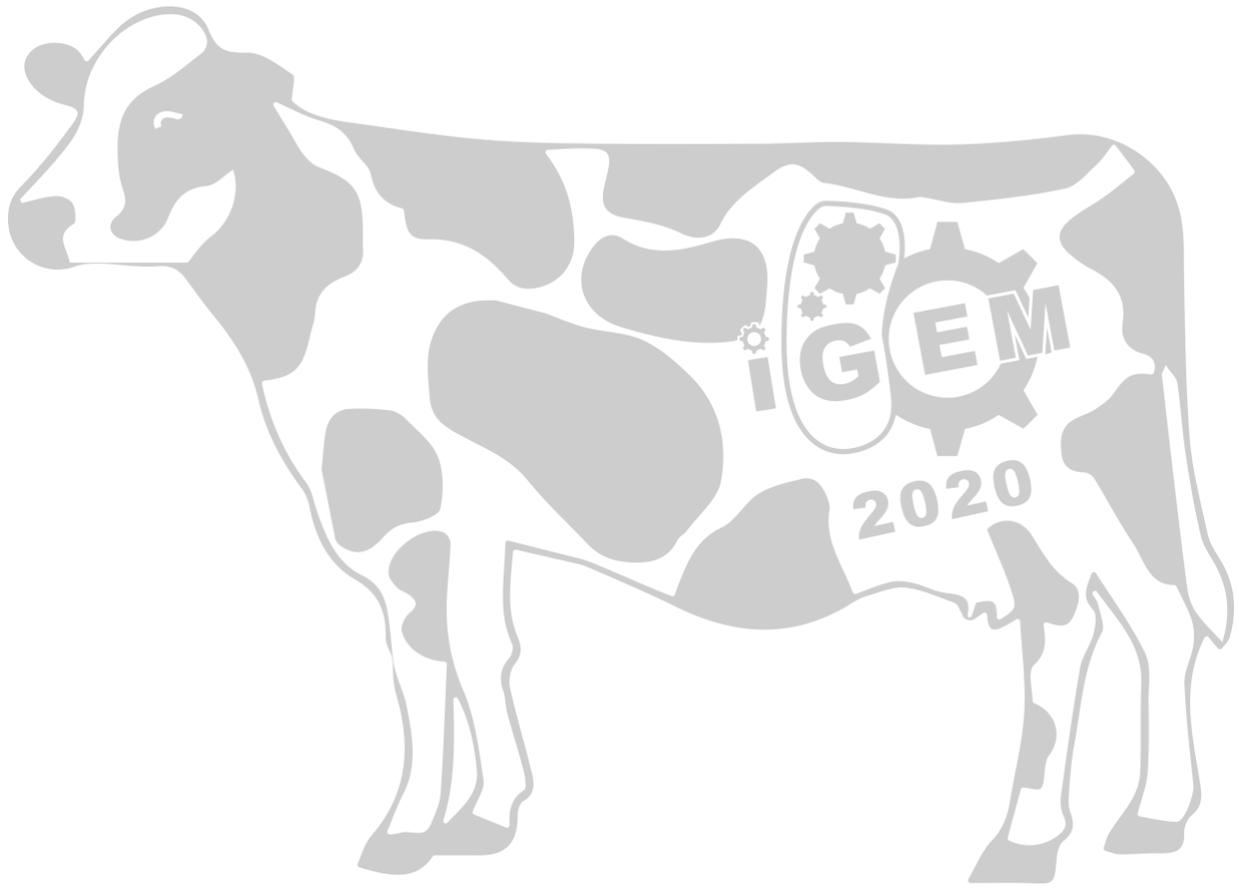


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Introduction

i The following document is designed to be the SUNY Oneonta iGEM team's contribution for the 2020 iGEM Competition.

Our team had a few individuals who self-taught and created an animated informational video using web-based animation software. The video is comprised of data and visuals that present our 2020 iGEM project.

This information guide is formatted to be easily comprehensible. It is designed to be a succinct guide so that a team can get started making an animated video as quickly as possible.

The main purpose of this guide is to inform those who may benefit from our experience. We have encountered various mistakes and errors that have allowed us to learn and better our understanding of the process of editing and completing an animated video.

We hope our animated video and information guide persuade other teams to learn a new skill and create their own videos, which may be used to promote their project or provide explanatory content for a team wiki.

SUNY Oneonta iGEM Team Animated Video

i Our video introduces the inspiration behind our team's project, "Confirming A2 Alleles using Luminescence in the Field (CA₂LF)."

In our video, we showcase issues that affect small dairy farms in our area and explain how we hope our project will help farmers enter a niche market, the production of A2 milk, so that small family farms can become more sustainable with help from synthetic biology.

Objectives

i The objectives of this manual are to:

- Provide information about the advantages of animated videos
- Share our personal experiences when creating animated videos
- Offer helpful tips and tricks based off of personal experience

Our Video

i Please feel free to watch our animated video in the link below.

Link: <https://youtu.be/01qDRgRzUeg>

Advantages



Why incorporate Animated Videos into your projects?

An animated video is the new modern business card. It must leave a lasting impression and motivate the viewer into wanting more information. Below are a few simply explained benefits of using animated videos.

Large Outreach



In the age of technology and the internet, it has never been easier to communicate without being limited by distance or time. Especially with the on-going pandemic face-to-face communication has reduced dramatically. This requires an alternative solution to reach audiences.

One could use social media to connect to viewers. One can upload an animated video to multiple platforms, for example YouTube, Instagram, Facebook, Twitter, and Pinterest. A single animated video can be not only be played, but shared, by multiple people, from different places, at the same time.

Moreover, the ability to give ratings and comments can provide the video maker with helpful feedback; they can then respond quickly via direct message to viewers, potential customers, or potential investors.

Viewer Engagement



As technology has sped up everyday activities and tasks, fast, easy and simple has become the new normal. Hence, human attention spans have decreased, especially with younger generations. Thus, it becomes important to keep the viewer engaged and focused.

One could easily record themselves speaking to a camera, but is the viewer engaged with these visuals? The use of animated videos can make the viewing experience more dynamic for viewers. One can use animated characters, symbols, and icons to deliver a message in a time efficient manner and simply represent abstract ideas. With animation, one is not limited by "reality."

One of the most difficult groups to keep engaged are younger audiences. These individuals have been raised and taught with the techniques and pace of modern technology. The video must be able to grab and retain the attention of the viewer. This is accomplished by quickly and simply displaying information or a message in an easy to comprehend fashion. The use of animated videos can effectively engage and inform audiences from any age group with fun, colorful, simplified images.

Cost Effectiveness

i The biggest challenge most iGEM video producers face is lack of funding or low budgets. The actors, location, or equipment may be difficult to obtain or very costly.

Animated videos do not require these resources. Many online animation programs offer low-cost monthly subscription services or “pay as you go” options (see the **Additional Information** section for more details). With the rise of technology integrated into our daily lives and ready access to information, it has never been easier and cheaper to create a unique animated video.

Easy to Correct and Update

i Mistakes may be identified far after a video has been created, or information may evolve and need to be updated. Live videos are quite difficult to correct or change. Many times, they require the exact setting and actor to reshoot the scene, which may be costly and time consuming.

An amazing benefit of using animated videos include easy editing. Since most videos can be easily made and changed on a computer or laptop it becomes very convenient to correct errors or alter content.

It is inevitable for videos to become outdated, especially live videos. It becomes very obvious to the viewer when a video is out of its time. Clues that lead to this conclusion include actors/actresses' fashion and apparel, vocabulary and lingo, and the occasional outside references.

Updating a video's content to keep up with the times is vital for audience engagement. Animated videos can easily be changed, so the message is not undermined by errors or outdated styles.

Better Audience Comprehension

i Research has shown that more than 50% of the brain's cortex is dedicated to processing visual information. Because many individuals viewed cartoons during their childhood, an animated video might be seen as more entertaining. In addition, this reference to childhood can evoke positive emotions, which may aid in comprehension of the material presented in the video. A large component of learning is motivation. Studies have shown that animated videos increase motivation for learning (Kim, S., Yoon, M., Whang, S., Tversky, B., & Morrison, J. (2007). The effect of animation on comprehension and interest. *Journal of Computer Assisted Learning*, 23(3), 260-270. doi:10.1111/j.1365-2729.2006.00219.x).

Planning Tips

i This section will consist of helpful tips and recommendations based on our experience for those who wish to create an animated video. Some of these tips derive from mistakes we made during the process of creating an animated video and it is our hope that sharing our experience will help others be more efficient when producing their first animation.

The Planning Stage

i **OUR MOST IMPORTANT TIP: HAVE A PLAN**
A first experience designing and planning an animated video can become very tedious and frustrating. The video must be quick and simple enough to properly deliver information. Planning content may be especially difficult for science-based videos due to the complexity of the concept you may be trying to explain. Many viewers will not have much or any background information that could be key to understanding the overall purpose of the video.

Step One: What is the purpose?

Your video must have a reason to exist. Was it created to inform, persuade, entertain, etc.? It is important to not lose focus at the beginning of an animation project by getting distracted with fun designs or creative ideas. Allow the viewers to understand the purpose without directly telling them.

A purpose must be simple. A good guideline is to be able to state your purpose in 1-3 sentences. For example, the purpose of the SUNY Oneonta promotional video is to inform and explain our iGEM Project. Our project aims to help local dairy farmers enter the niche market of A2 milk by providing a field-deployable detector for cows with the A2 beta casein allele.

Step Two: What order will your video be in?

An animated video must follow a sequence that allows a viewer easily comprehend your message. An unorganized video is easily detected and can confuse the viewer or undermine your purpose. For example, if you want to tell a story you might choose to organize content in chronological order. This allows the viewer to create a timeline based on the story being told.

In our animated project promotion video, we chose the following order:

Introduction > Purpose of Project > Background Information > What problem are we solving? > Our Solution > Why should the viewer care? > Closing Statement

Step Three: Scheduling and Assigning

Organization is key for success. Create a weekly calendar with goals at the end of every week. At the end of each week regroup and evaluate progress. The goals do not have to be completed fully or perfect by the end of the week!

Assign which member of your team or group will work on each goal or section. Have one or two team members complete their goal by the end of the week. Once the video is completed, regroup and evaluate the work. Show your video to team members who were not involved in its production. Fresh eyes may be able to point out errors or inaccuracies and can provide feedback on content organization.

Choosing Software



There are numerous programs and software that can be used to create animated videos. This section provides guidelines on how to choose a program that best fits your project. A short list of popular animation programs is provided in the **Additional Information** section.



ACCESSIBILITY:

Each program will run differently based on the type of computer you are using. Make sure the program is able to run properly on the device that will be used to make the video. If the company running the software does not specifically state which device they recommend for their software, contact them either by phone or email.

You will need to determine the user interface that works best for you. Options include the following:

- **Online Software:** These programs must be used only on web browsers such as Safari, Chrome, or Firefox. They will require you to have internet access whenever you work on your video, but offer the advantage of being able to function on any computer with a web browser. Check for compatibility with your preferred browser and whether it requires add-ons such as Java to be installed.
- **Downloadable Software:** These programs require downloading files and/or apps to a device in order to use. This will limit you to use only devices on which the program is installed. Programs may require certain object libraries to be installed on your computer in order to work properly.

STORAGE:

Some programs require the user to download their app or software in order to make a video. Be sure the device that will download the app or software has more than enough storage. The amount of storage the app or software is correlated with the amount of time and data being used.

Warning: If the memory required by a downloaded program is large, you may encounter a “storage full” situation that will slow down your device’s performance.

COST:

The cost of the software may also be a priority. Some companies charge different prices depending on the type of customer. Many will have a free option for shorter videos. See the **Additional Information** section for more details.

Important: Check if the company offers a student or academic discount. If the company does not specifically display alternative prices for students contact them. Try emailing or calling the company and explain that you are a current student working on an academic project.

RESOURCES AND CUSTOMER SERVICE:

Each company will have different resources and tools to help assist their customers. This may include YouTube videos, guides, or templates. Be sure to check for these available resources. These can help you understand the software and even prevent mistakes.

Helpful Tips

-  This section contains helpful tips and recommendations for those who wish to create an animated video. Some of these tips derive from mistakes our team made during the process of creating our first animated video.

Nothing is Perfect

-  Based on our experience, an important lesson is "NOTHING IS PERFECT." No amount of passion, time, or effort will create a "perfect" video. If you choose to change every minute detail of your video it will never be finished. Select team members for this task that have an eye for detail, but are not perfectionists.

Comparison

-  DO NOT COMPARE YOUR VIDEO TO A PROFESSIONALLY MADE VIDEO! Videos created by big companies are made by teams of experts who have years of training and experience. Do not devalue your video by comparing it to others. You will always find a more creative and cooler video. Do not create an imaginary "competition" to see whose video is best. You will end up sabotaging your own work.

Limit Your Creativity

-  As stated before, one amazing benefit of animated videos is creative freedom. You may want to add eye catching effects and beautiful designs to your video. Do not let creative freedom blind you from your overall goal. The main purpose of the video should not be overshadowed by animation. Ensure that communicating your message remains the most important focus of your efforts.

Patience is key

-  In order to have a successful outcome in creating an animated video one **must** have patience. It is common to feel frustrated and stuck during this process. It is ok to put the video aside for a little while and return to it later. A small amount of time away from your video can be very useful, not just for the video but for the human being.

