



# **Filmmaking: Science on screen**

**Climatica**

**[www.climatica.org.uk](http://www.climatica.org.uk)**

*Kathryn Adamson, Tim Lane, Richard Selwyn Jones*

# Contents

---

- 1 Why use films?**
  - What are the advantages of film?
  - What are the drawbacks?
  
- 2 Lights, camera, action**
  - Planning
    - What kind of film?
    - Who is my audience?
    - What's the story?
  
  - Producing
    - What equipment do I need?
    - Which techniques and effects should I use?
  
  - Promoting
    - How will I publish my video?
  
- 3 References and useful links**



# 1 Why use films?

---

## What are the advantages of film?

**A picture is worth a thousand words** - audiovisual tools provide a powerful and effective way of communicating your work with wider audiences.

**Unlike written publications, film can often be more accessible** - to audiences of different ages or languages, for example. Film can open up many opportunities to share your work more broadly.

**Films allow the audience to visualise and experience the scientific process**, in a way that isn't possible through written articles.

**There may also be scope to incorporate humour or emotion to your work.** This kind of 'human dimension' is often lost within scientific writing or diagrams, and audiovisual productions are an effective way to bring your work to life and inspire your audience.

**Geoscience films needn't cost the earth!** With the advent of camera phones and inexpensive, portable camera equipment, it is easier than ever to become a movie producer.

**Filming can be helpful for the scientist too – you have a permanent record of your project.** Filming your work as you progress through your research (while out in the field, or in the laboratory for example) means that you do not necessarily need to dedicate lots of time to producing the film.

## What are the drawbacks?

**Sometimes film is not the best method for your outreach work** – some parts of your project might not translate well into a visual demonstration.

**If the story is not well-considered, sometimes the message can be lost.**

**Some scientists are not comfortable with being in front of a camera.** If other people are involved in your film, ensure that they are at ease - you don't necessarily want to have a video of someone giving a lecture.

**Although the wide availability of equipment makes filmmaking accessible to all, this may come at a cost** – rudimentary equipment does not always yield the audiovisual quality that you require.

## 2 Lights, camera, action

---

### Planning

**As with all publications, a successful film requires planning. Before you grab the camera, consider:**

- Which part of your research do you want to communicate?
- Why is film the best way to do this?
- What kind of film format do you need? A documentary? An interview? An animation?
- Who is your audience? And at what level do you need to pitch your film?
- What is the story?
- How long is it going to be? And how long do you have to film it?
- Will other people be involved? Do they need to prepare anything?
- Is there a budget? – both in terms of time and money

**Always identify your message before you create your film** – then edit your footage accordingly.

**Try to target a specific audience.** That way, your video can be produced and publicised effectively.

**Try to match the budget to your aspirations of the film.** Not all films need a big budget – you can achieve great results by experimenting with filmmaking yourself free of charge, even if it might lack the finishing touches of a professional production team.

### Producing

**Whatever your experience with film**, whether it is an informal and fun video of your fieldwork, or a more professional production, **two key considerations are: equipment and filming technique**

#### Equipment

**Specialist equipment is not always a requirement.** Engaging and insightful movies can also be made using relatively inexpensive cameras and, where required, microphones.

**Some excellent films can be made very simply by using time-lapse photography** and developing these images into a movie using free software.

**If you do intend on investing in more expensive equipment, you may need to consider the most effective set-up for your needs.** Often, cameras with in-built microphones are not the best quality. Do you need a separate microphone? Do you need a boom? Try to use headphones so that you can continually check the sound quality.

#### Technique

**From the moment you start filming, you are editing!** It is as much about what is in shot, as what is not in shot. Use the viewfinder!

**Make your introduction count.** Imagine the attention span of your intended audience. You need to engage them in the first few seconds.

**Make your ending count.** As with a scientific paper, it is your closing shot that sticks in peoples' minds.

**Take a variety of shots.** You can stitch things together later, once you have returned from the field or laboratory, and edit your material according to your intended message.

**Use a variety of camera angles** for different settings, or to build different emotions. Can you incorporate upshots? Downshots? Unusual angles?

**Take plenty of footage.** In the digital age, your capacity to record knows no bounds (until your memory card becomes full).

**Try to keep the camera steady.** Avoid fast pans or zooms to ensure that your video looks professional and doesn't make your audience feel nauseous.

**If you are building a story, you might want to consider:**

- Is there a protagonist? Who are they?
- Do you need to develop empathy with the character?
- Can you incorporate suspense or surprise?
- How can you cause the audience to ask questions?

**A movie as an audio-visual experience – don't neglect the audio!** As with all good films, the audio of a science film can help to build the story and carry the intended emotion.

- Do you need music?
- Would background sounds help to develop the atmosphere of your film?
- There are often libraries of free music that you can use for your videos.

## Promoting

**So you have made your video. How will you get it to your audience?**

**How will it be viewed?** Consider the best way to disseminate your video to wider audiences. Would online platforms, such as YouTube or Vimeo, work best? Or DVDs that you can send to your target viewers?

**You might want to consider hosting a simple website** or blog/Twitter feed/Facebook page for your video.

**Are you intending to create a series of videos?** Perhaps you could launch a YouTube channel.

**Are there any similar videos to yours?** How can you make yours stand out?

**If it is online, rather than as a hard copy, it might be possible to evaluate and re-edit your video over time.**

### 3 References and useful links

---

**Adobe Press – 20 tips for shooting great video**

<http://www.adobe.com/press/articles/article.asp?p=1350893>

**American Geophysical Union**

<http://sharingscience.agu.org/resources/#media>

**Climatica**

[www.climatica.org.uk](http://www.climatica.org.uk)

**European Geosciences Union**

<http://www.egu.eu/outreach/>

<http://www.egu.eu/news/>

<http://geolog.egu.eu/category/science-comm/>

<http://geolog.egu.eu/2014/01/29/communicate-your-science-video-competition-at-egu-2014/>

<http://www.egu.eu/outreach/blogs/>

[www.egu.eu/young-scientists/resources/?filterby=5&limit=50](http://www.egu.eu/young-scientists/resources/?filterby=5&limit=50)

**National Geographic**

<http://video.nationalgeographic.com/video/dslr-hd-video-tips/basics-dslr-hd-video-tips>

**Science Media Centre**

<http://www.sciencemediacentre.org/>

**SciLogs**

[http://www.scilog.com/communication\\_breakdown/does-media-boost-citations/](http://www.scilog.com/communication_breakdown/does-media-boost-citations/)

**The Scientist Videographer**

<http://thescientistvideographer.com/wordpress/>

**University of Regina blog**

<http://www2.uregina.ca/yourblog/how-to-make-a-cool-science-video-in-three-easy-steps/>

**Untamed Science guide to filmmaking**

<http://www.untamedscience.com/how-to-filmmaking/>