

To Find Out More, Press Play: Creating Accessible Statistics Videos

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Slide deck available at: mpwallace.github.io



- The brief
- The resources
- The tools
- The process
- The lessons



- Originally from the UK
- Primarily teach intro stats
- Editorial board member for Significance magazine
- Extensive media experience (online, radio, television)

Statistical Communication: What's the Norm?



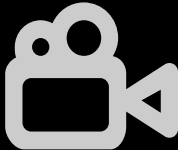
- Good for specialists
- Can publish outside discipline but still limited reach
- Broader audiences?



Teaching

SIGNIFICANCE 

General audience writing



Media



General audience videos



- Easily shared
- Multiple takes \implies higher quality!
- Engagement opportunities
- Pause/rewind/speed up/slow down
- Increased accessibility (captioning, descriptions, links)



STRATOS: STRengthening Analytical Thinking for Observational Studies

Who?

Large collaboration of experts in many different areas of biostatistical research.

Why?

Provide accessible and accurate guidance in the design and analysis of observational studies.

Who For?

Applied statisticians and other data analysts with varying levels of statistical education, experience and interests.

STRATOS comprises 9 Topic Groups:

1. Missing data
2. Selection of variables & functional forms
3. Initial data analysis
4. Measurement error & misclassification
5. Study design
6. Evaluating diagnostic tests & prediction models
7. Causal inference
8. Survival analysis
9. High-dimensional data

Goal: Each topic group to produce short (5 minute) videos to provide a general-audience introduction to their subject area.

My group:

4. Measurement error & misclassification

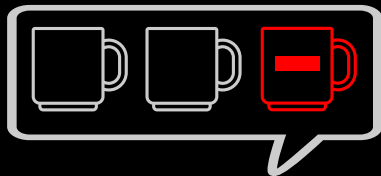
Question: How many cups of coffee did you drink last weekend?



Measurement Error Topic Group

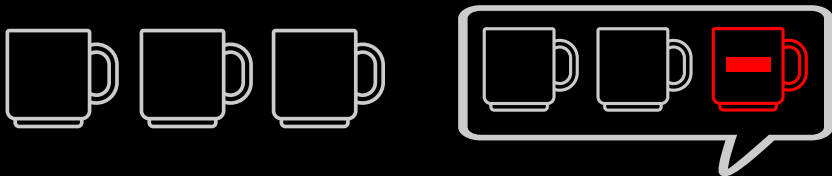


Suppose you'd had three cups of coffee - this is the 'truth' we hope to observe.



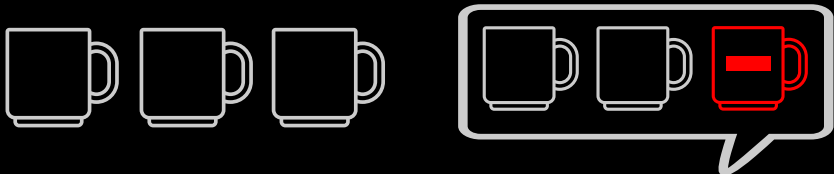
But maybe you forget one cup, and say you had 2.

Measurement Error Topic Group



A difference between what we observe and what we want to observe is called measurement error.

Measurement Error Topic Group

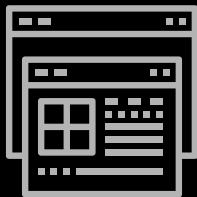


Goal: Create a video - or series of videos - that introduces the fundamentals of measurement error to a general audience.

Before You Begin: Resources



Money



Equipment

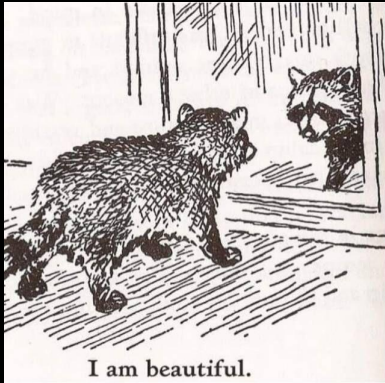


People



Time

Before You Begin: Resources



Remember: You are the main resource!

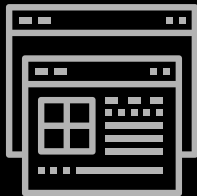
- Know - and value - your strengths!
- Software/technical expertise
- Presentation and communication expertise
- Know - and account for - your weaknesses!

Before You Begin: Resources



Money

- \$0 :)



Equipment

- Software
- Hardware



People



Time

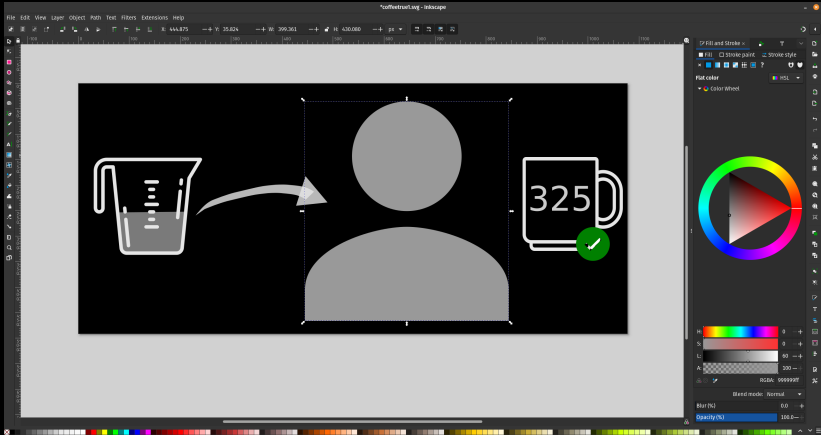
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\begin{frame}
\frametitle{Software: LaTeX}

\begin{center}
\includegraphics[width = 1\textwidth]{./Images/latexscreenshot.png}
\end{center}

\begin{itemize}
\item<1- |alert@1> LaTeX/Beamer: Build universal slide decks
\item<2- |alert@2> Good for math (if you need it!)
\end{itemize}

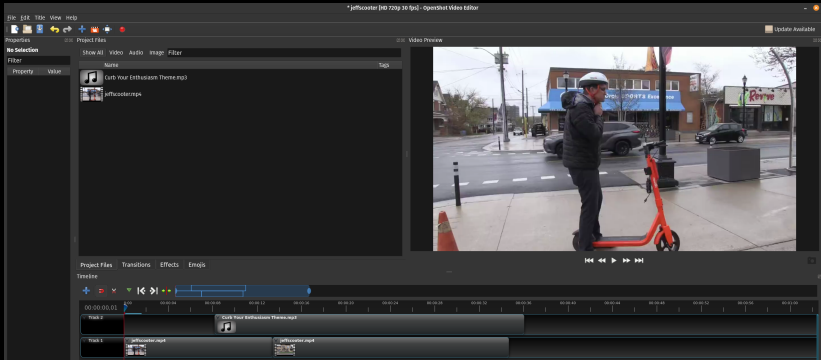
\end{frame}
```

- LaTeX/Beamer: Build universal slide decks
- Good for math (if you need it!)



- Inkscape image editor: free! Basics easy to pick up

Software: OpenShot



- OpenShot video editor: free! Basics easy to pick up



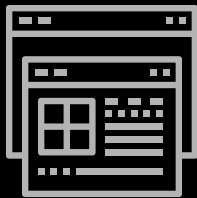
- Laptop: Slide/image editing
- iPad: Recording
- PC: Editing

Before You Begin: Resources



Money

- \$0 :)



Equipment

- LaTeX,
Inkscape,
OpenShot
- Tablet,
laptop, PC



People

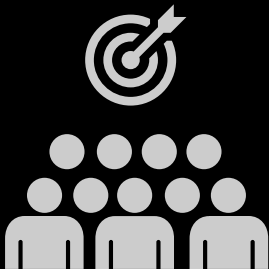
- Topic
group of
16 experts



Time

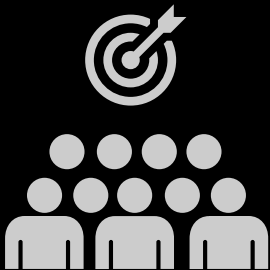
- ???

Before You Begin: Goals



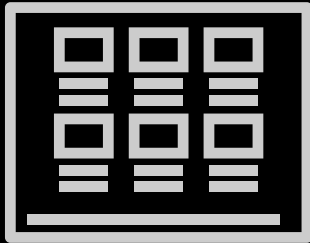
- Who's this for?
- What are the takeaways?
- Be realistic!

Before You Begin: Accessibility



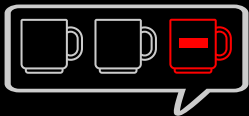
- Language
- Captions
- Visuals

Before You Begin: Structure



- Overarching 'plot'
- Storyboard/Beats
- Multiple videos?

Before You Begin: Structure



What

What is it?



Why

Why does it matter?



How

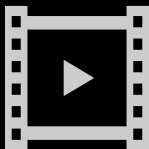
How is it handled?

Before You Begin: Format



Static slides

- Simplest
- Easy editing
- Engagement challenges



Animation

- More advanced technical skills
- More engaging



Live action

- Resource intensive
- Less universal

Important: Choose the format that best aligns your goals and resources. Don't bite off more than you can chew!

Before You Begin: Hosting



- Full control
- No moderation
- Limited reach



- More restrictive
- Potential moderation
- Bigger reach



- Form a 'skeleton' script that covers the key points.
- Maintain a narrative thread with consistent examples/themes.
- Get key points confirmed with collaborators before next steps.



Things to consider:

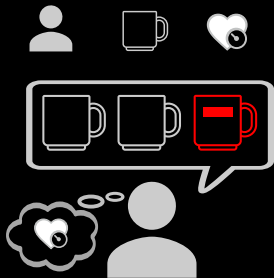
- Tone: conversational or formal?
- Specialized language
- Keep it concise



Scalable vector graphics (SVG): lossless scaling.



- Colour, complexity, consistency
- Image source: open source or licensed?
- Check broad visual ideas with team before next steps
- Don't underestimate the importance of this!



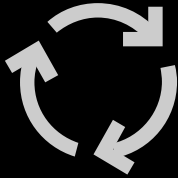
- Build a set of graphical assets
- Aim to be language agnostic
- More complex ideas may require careful graphical design: check these with team similar to checking complex parts of the writing

Feedback: Getting Good Input



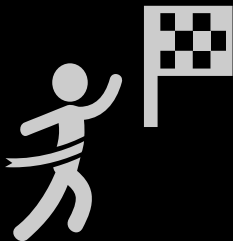
- Ask specific questions
- Be clear on what doesn't need feedback
- Set deadlines
- Resolve contradictions early

Feedback: Incorporating Comments



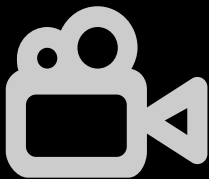
- Iterative process
- Keep track of major changes
- Consider version control, especially if part of a team (e.g. github)
- Some feedback may prove difficult to incorporate. Be decisive!

Wrapping Things Up: Finalizing the Content



- Don't apply polish (especially to graphics) until very late stage
- Don't start test recordings until very late stage (but do practice your script/timings out loud)
- Don't let perfect be the enemy of good!

Wrapping Things Up: Recording



- It doesn't have to be one take!
- Have high standards
- Be patient

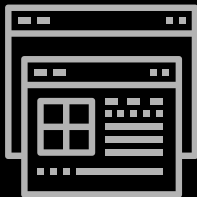
Wrapping Things Up: Publishing



- Be patient
- Be ready to edit/re-record
- Thumbnails, titles, keywords
- Publicize!



- No budget not an insurmountable obstacle
- But: Professional help should be seriously considered



- Can go far with a limited skillset
- Great opportunity for skill development

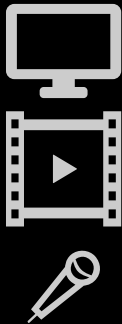


- Big group provides priceless expertise
- But: Careful management needed
- Can create bottlenecks



- Set project timeline at outset
- Track progress: if slower than expected look for reasons why and strategic opportunities

What I Learned: Format and Hosting



- Format choice is a critical step
- Animations worth considering
- Make hosting decisions early!

STRATOS Initiative: stratos-initiative.org

Open source SVG repository: svgrepo.com

Open source image editing: inkscape.org

Open source video editing: openshot.org



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