Hints to write competitive proposals

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Webinar EURAXESS Brasil
23.06.2020

Some important clichês

Good writing requires

lots of reading

No secrete recipe

Some important clichês

- **Choose a good title:** The title invites a potential reader to pick up your paper/proposal and read it further.
  - You could **think of your title as the shortest possible summary of your paper**.The elevator story!

- **Work towards effortless reading**.
  - Remember that your work competes for reader's attention with an ocean of published material. A story that reads effortlessly improves your competitive position, but you also need to tell readers why they should spend their time reading *your* work, rather than somebody else's.

Some important clichês

- Know your readership: whom are you writing to?
- **Know** and **Address** the weakness of your proposal and offer contingency plans whenever appropriate.
- Try our best to make inter-independent AIMs.
- Ask colleagues to read and comment on your proposal;
- If you propose specific methods, collaborations, be sure to show/describe them (preliminary data, literature, collaboration letters…).

Some important clichês

- Don't be lazy

  …Read carefully the guidelines for the funding program you're applying to…

- Remember: most people are lazy (or busy)

  …Think, for example, on how people read e-mails…

Reviewers might have lots of proposals to go through:

Help them out by highlighting:

- What you want to do;
- Why it is important.
- Use schematics…

Write a compelling summary/abstract

- Few readers will invest the effort to read trough a paper unless **its importance is established explicitly right up front**.

Text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text **In this proposal we will address …**text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text text

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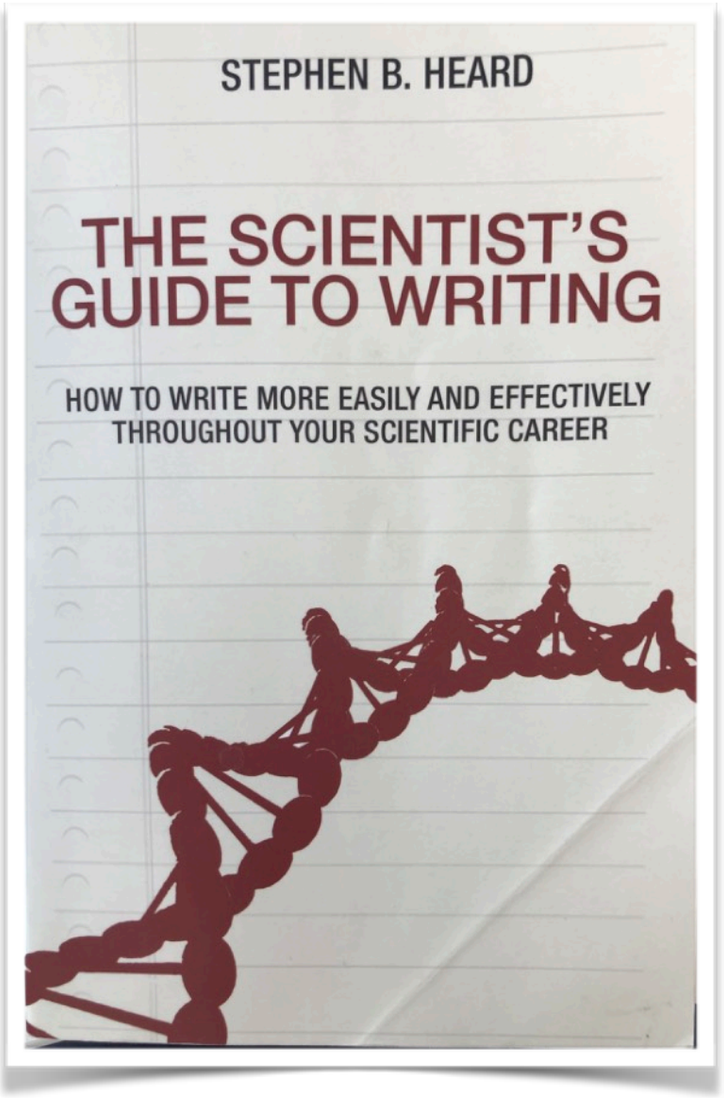
Effective Writing and Presentations



A **Story Summary** consist of answers to the following nine queries about your work and your story:

Introduction

1. **What is the central question?**
2. **Why is this question important?**
3. **What data are needed to answer this question?**

Methods

4. **What methods are used to get those data?**
5. **What analysis must be applied for the data to answer the central question?**

Results

6. **What data were obtained?**
7. **What were the results of the analyses?**

Discussion

8. **How did the analysis answered the central question?**
9. **What does this answer tell us about the broader field?**

nature

How to construct a *Nature* summary paragraph

Annotated example taken from *Nature* **435**, 114-118 (5 May 2005).

*One or two sentences providing a **basic introduction** to the field, comprehensible to a scientist in any discipline.*

*Two to three sentences of **more detailed background**, comprehensible to scientists in related disciplines.*

*One sentence clearly stating the **general problem** being addressed by this particular study.*

*One sentence summarising the main result (with the words "**here we show**" or their equivalent).*

*Two or three sentences explaining what the **main result** reveals in direct comparison to what was thought to be the case previously, or how the main result adds to previous knowledge.*

*One or two sentences to put the results into a more **general context**.*

*Two or three sentences to provide a **broader perspective**, readily comprehensible to a scientist in any discipline, may be included in the first paragraph if the editor considers that the accessibility of the paper is significantly enhanced by their inclusion. Under these circumstances, the length of the paragraph can be up to 300 words. (The above example is 190 words without the final section, and 250 words with it).*

During cell division, mitotic spindles are assembled by microtubule-based motor proteins[1,2]. The bipolar organization of spindles is essential for proper segregation of chromosomes, and requires plus-end-directed homotetrameric motor proteins of the widely conserved kinesin-5 (BimC) family[3]. Hypotheses for bipolar spindle formation include the 'push−pull mitotic muscle' model, in which kinesin-5 and opposing motor proteins act between overlapping microtubules[2,4,5]. However, the precise roles of kinesin-5 during this process are unknown. Here we show that the vertebrate kinesin-5 Eg5 drives the sliding of microtubules depending on their relative orientation. We found in controlled *in vitro* assays that Eg5 has the remarkable capability of simultaneously moving at ~20 nm s^{-1} towards the plus-ends of each of the two microtubules it crosslinks. For anti-parallel microtubules, this results in relative sliding at ~40 nm s^{-1}, comparable to spindle pole separation rates *in vivo*[6]. Furthermore, we found that Eg5 can tether microtubule plus-ends, suggesting an additional microtubule-binding mode for Eg5. Our results demonstrate how members of the kinesin-5 family are likely to function in mitosis, pushing apart interpolar microtubules as well as recruiting microtubules into bundles that are subsequently polarized by relative sliding. We anticipate our assay to be a starting point for more sophisticated *in vitro* models of mitotic spindles. For example, the individual and combined action of multiple mitotic motors could be tested, including minus-end-directed motors opposing Eg5 motility. Furthermore, Eg5 inhibition is a major target of anti-cancer drug development, and a well-defined and quantitative assay for motor function will be relevant for such developments.

- **Work towards effortless reading.**

Reading flow

Effect of PGE1 on cytokines production by macrophages

Background:

Prostaglandins are small lipid molecules that play a key roll as mediators on inflammation. Prostaglandin E1 (PGE1) also known, as Alprostadil has been associated with anti-inflammatory effects and attenuate cytokine production, however its function on inflammation is still controversial and has to be clarified. The aim of our study is to investigate the effect of PGE1 on inflammasome response in human macrophages.

Methods:

Human GM-CSF macrophages isolated from Buffy coat were treated with PGE1 at different concentrations (1.8µM or 0.6µM) either before LPS stimulation or after 3 hours priming. NLRP3 Inflammasome was activated by further stimulation with 10 µM Nigericin for 1.5 hours.
HTRF ® technology was used to asses the cytokines levels including Interleukin-1ß (IL-1ß) and tumor necrosis factor α (TNF α). Caspase 1 activity was measured with the Caspase-Glo® inflammasome assay. Cell viability was quantified with the Cell-Titer Blue Cell viability assay and the Lactate dehydrogenase (LDH) assay. The protein expression was measured by western Blot analysis.

Results:

Addition of PGE1 increased the production of IL-1b and IL-18 upon NLRP3 activation but decreased TNF alpha levels in macrophages. Interestingly when PGE1 was added after 3 hours of LPS stimulation the cytokines levels did not change markedly. Furthermore, PGE1-treated macrophages showed an increased Caspase 1 activity in the supernatants. The treatment with PGE1 showed at protein level an increase of cleaved caspase 1 in the LPS+Nigericin+PGE1 group than in the LPS+Nigerecin group. PGE1 did not seem to have any effect on cell viability.

Discussion:

Our data demonstrate that PGE1 boost inflammasome response resulting in an increase of caspase-1 activity and IL-1ß release. PGE1 does not only influence inflammasome-dependent cytokines, but also TNF α.
The results suggest that PGE1 have an impact on cytokine response of GM-CSF macrophages in the priming phase and not in the inflammasomme activation.

Keywords:

PGE1, GM-CSF Macrophages, Inflammasome, Cytokines, Priming

Use the title to draw attention to the problem/topic and main findings

The anti-inflammatory lipid mediator PGE1 boost inflammasome activation in human macrophages

One or two sentences providing a basic introduction to the field, comprehensive to a scientist in any discipline.

Two or more sentences of more detailed background. Comprehensive to scientists in related disciplines.

One sentence clearly stating the general problem being addressed by this particular study

Prostaglandins are small lipid inflammatory mediators produced at sites of tissue damage or infection. Prostaglandin E1 (PGE1), also known as Alprostadil, is a naturally occurring prostaglandin with widespread use as a medication.PGE1 is well-known for its anti-inflammatory effects, and it is on the World Health Organization's List of Essential Medicines, the most effective and safe medicines needed in a health system. In this study, we investigated the effects of PGE1 on the activation of the NLRP3 inflammasomes, a signaling platform required for the maturation of the highly inflammatory cytokines of the IL-1 family.

One sentence summarising the main results (with the words "Here we show", or their equivalent.

Two or three sentences explaining what the main results reveal in direct comparison to what was thought to be the case previously, or how the main results adds to previous knowledge.

In line with an anti-inflammatory effect of PGE1, we observed that the addition of recombinant human PGE1 (rhPGE1) to macrophages diminished their secretion of TNFalpha in response to LPS stimulation. However, rhPGE1 enhanced the caspase-1 activity and boosted the secretion of IL-1b and IL-18 in LPS-primed macrophages that were activated with Nigericin, an NLRP3 activator. The effects of PGE1 occurred during the priming phase of inflammasome-activation, as its addition after the LPS stimulation did not influence the cytokines levels of macrophages. Our findings reveal an unexpected proinflammatory feature of PGE1 which acts as a synergistic priming signal to license inflammasome activation in vitro. These findings call for considerations regarding the widespread use of PGE1 as a medication.

Help out your reader, by defining terms that you think they might now know so much about

Keywords:

PGE1, GM-CSF Macrophages, Inflammasome, Cytokines, Priming

Cell

Deep Learning Reveals Cancer Metastasis and Therapeutic Antibody Targeting in the Entire Body

SUMMARY

Reliable detection of disseminated tumor cells and of the biodistribution of tumor-targeting therapeutic antibodies within the entire body has long been needed to better understand and treat cancer metastasis. Here, we developed an integrated pipeline for automated quantification of cancer metastases and therapeutic antibody targeting, named DeepMACT. First, we enhanced the fluorescent signal of cancer cells more than 100-fold by applying the vDISCO method to image metastasis in transparent mice. Second, we developed deep learning algorithms for automated quantification of metastases with an accuracy matching human expert manual annotation. Deep learning-based quantification in 5 different metastatic cancer models including breast, lung, and pancreatic cancer with distinct organotropisms allowed us to systematically analyze features such as size, shape, spatial distribution, and the degree to which metastases are targeted by a therapeutic monoclonal antibody in entire mice. DeepMACT can thus considerably improve the discovery of effective antibody-based therapeutics at the preclinical stage.

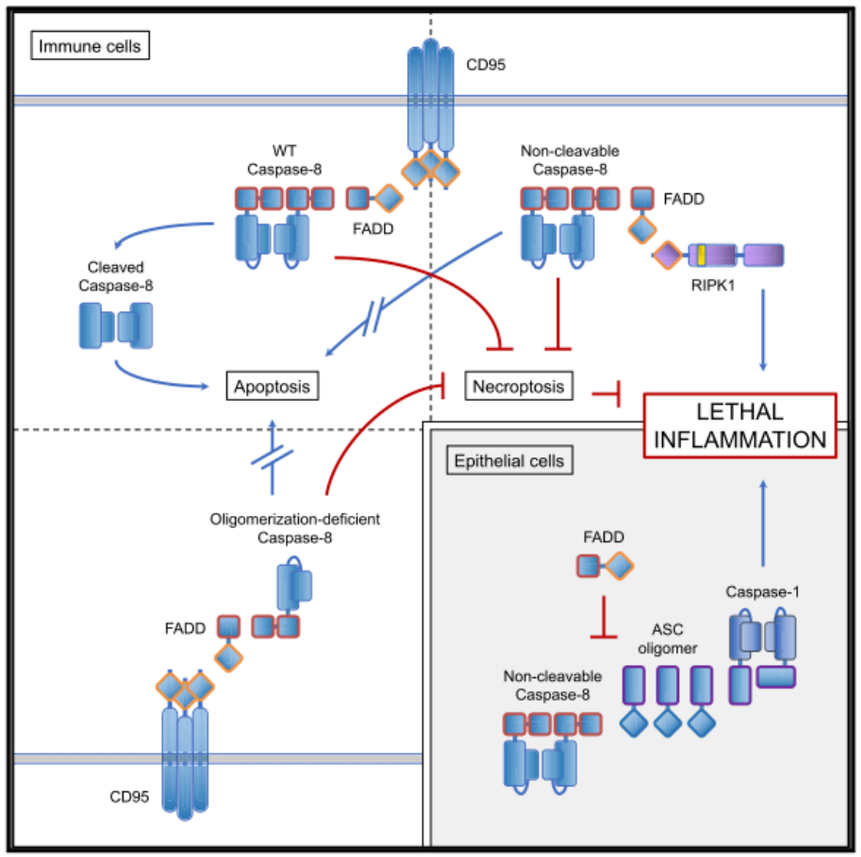
INTRODUCTION

The metastatic process is complex and affects diverse organs (Hanahan and Weinberg, 2011; Lambert et al., 2017; Massagué and Obenauf, 2016). As most cancer patients die of metastases at distant sites developing from disseminated tumor cells with primary or acquired resistance to therapy, a comprehensive and unbiased detection of disseminated tumor cells and tumor

Immunity

Caspase-8-Dependent Inflammatory Responses Are Controlled by Its Adaptor, FADD, and Necroptosis

Graphical Abstract



Authors

Bart Tummers, Luigi Mari, Clifford S. Guy, ..., Stephane Pelletier, J. Magarian Blander, Douglas R. Green

Correspondence

douglas.green@stjude.org

In Brief

Caspase-8 mediates apoptosis and blocks necroptosis. Additionally, Tummers et al. describe two ways in which caspase-8 triggers inflammatory signaling *in vivo*. Caspase-8 mediates CD95-induced inflammation in complex with its adaptor FADD. Furthermore, caspase-8 mediates inflammasome activation independently of FADD in epithelial cells. Both processes are blocked by auto-cleavage of the caspase.

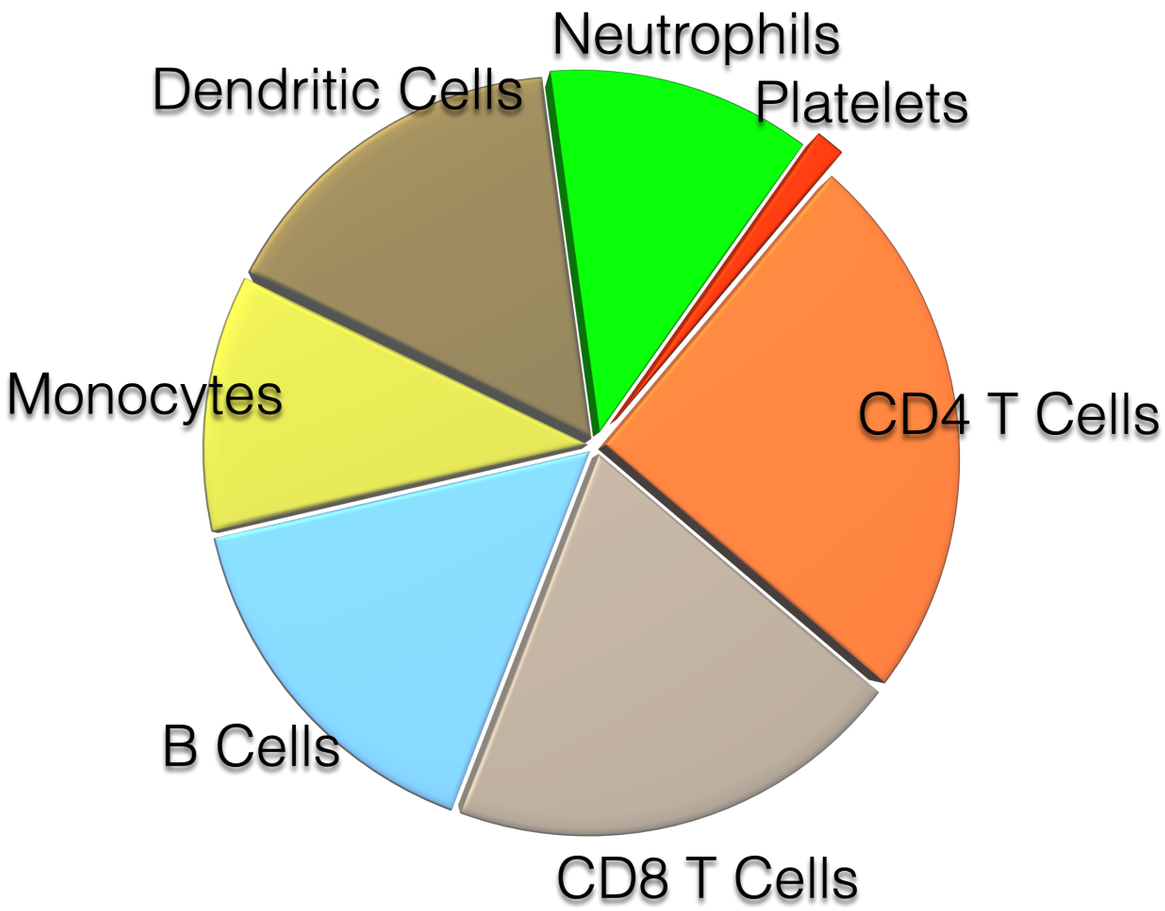
Highlights

- Non-cleavable caspase-8 (caspase-8 DA) causes inflammation, blocked by necroptosis
- Inflammation in *Casp8*$^{DA/DA}$*Mlkl*$^{-/-}$ mice is prevented by ablation of one allele of *Fadd*
- Full deletion of *Fadd* in *Casp8*$^{DA/DA}$*Mlkl*$^{-/-}$ mice causes *Casp1*-dependent lethality
- Non-cleavable caspase-8 induces ASC oligomerization in absence of FADD

When using schemes/figures

The immune functions of platelets are largely understudied

Total # of publications (immunity and cell type)



Frequencies in peripheral blood (x 10^6/mL)

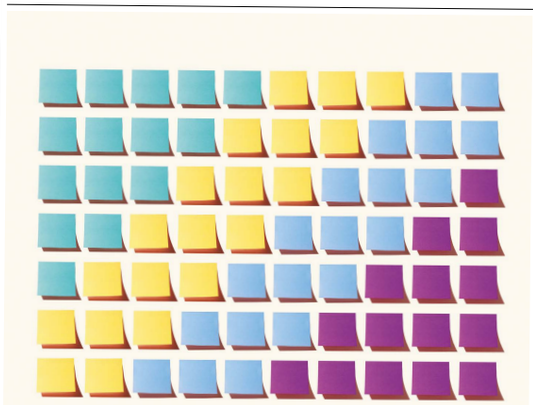
Preliminary data

- Grants are reviewed by scientists, and they like DATA;
- Good data, as close as possible to what you would publish;
- Do not overstate your data.

Work

Your story

Send your careers story to: naturecareerseditor@nature.com



GETTY

BOOSTING THE SIGNAL

Try these simple strategies to deliver better talks. **By Scott St. George and Michael White**

Giving a talk can open doors to new collaborations, increase your chances of funding success and make it more likely that other people will respond to your ideas. But scientific presentations are too often confusing, boring and overstuffed. Here are some suggestions, based on our experience as speakers, audience members and presentation trainers, that could make your next conference talk or seminar more enjoyable, engaging and effective.

Read the room. People who turn up to a departmental lecture have different levels of interest and expertise compared with colleagues who attend specialist conferences in your field. If you treat all audiences as if they're many people's [illegible] appraisal of your audience. What's the setting of your presentation and how many people are likely to attend? What do they already know about the topic? Do they hold any preconceptions about your research that you'll need to work against? The more you know about that particular group, the better your chances of crafting a presentation that will stay with them afterwards.

Be clear about your main message. Getting the subject of your work across is usually easy. Homing in on one central [illegible] making certain the [illegible] it after[illegible]

Deliver your takeaway at the start. Y[illegible] audience's attention will be greatest at t[illegible] beginning. Use your opening minute to st[illegible] the single key message of your talk. Avoid j[illegible] gon or technical details – those can come lat[illegible] if necessary – so that everyone can understar[illegible] what you're sharing and why it matters.

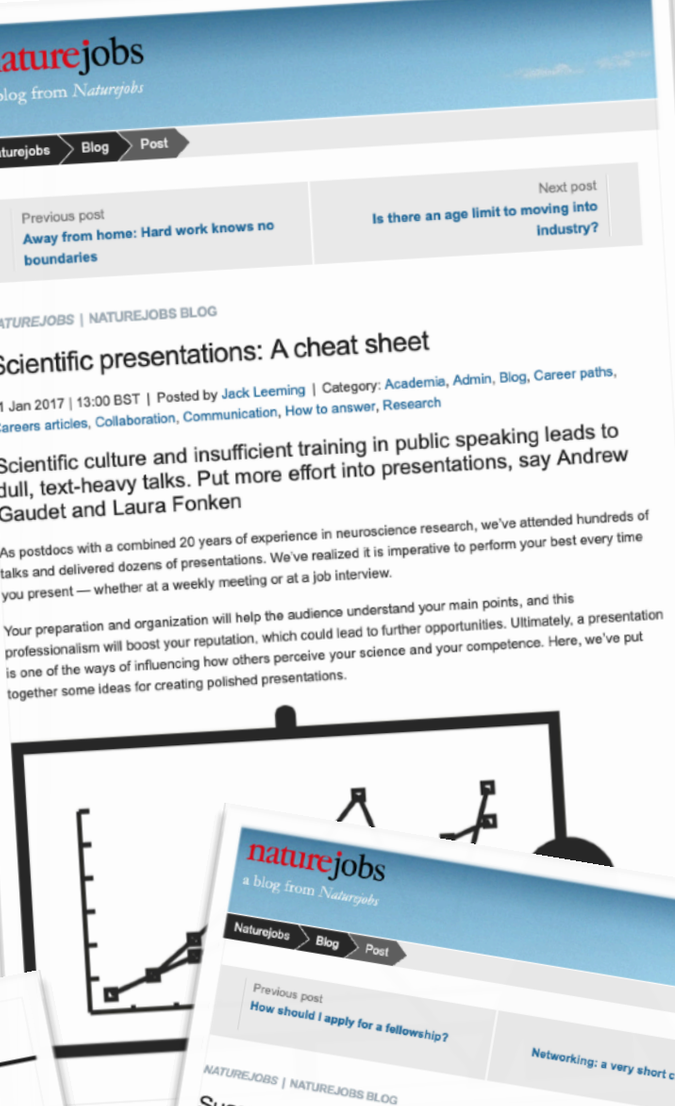
Make a plan. Don't be tempted to exhum[illegible] and reanimate an old PowerPoint deck[illegible] Doing so often leads to an overflowing pres[illegible] entation hampered by poor organization[illegible] too many extraneous slides and a confuse[illegible] or non-existent message.

Storyboard your presentation. Film[illegible] productions use storyboards – sets of illustrations arranged in sequence – to visualize the[illegible] plot before filming and to help decide which[illegible] actors, sets or effects are needed to bring it[illegible] to life. Likewise, you could plan your talk by[illegible] drawing rough sketches of possible visual aids[illegible] in a notebook, or on sticky notes that you can[illegible] quickly rearrange. Before you spend time producing slides, determine which visual aids are[illegible] absolutely essential to telling your story.

Be kind to your audience. Many scientific[illegible] conferences last an entire week, with attendees[illegible] sitting through dozens of talks each day. Mental fatigue is inevitable, and presenters should[illegible] do all they can to make content easy to engage[illegible] with and digest.

Allow your audience to listen, not read. The[illegible] average adult can read approximately twice[illegible] as fast as most people speak. So don't jam[illegible] slides full of words and then treat them as a[illegible] script for your talk; your audience will have[illegible] finished reading long before you can read[illegible] each slide aloud, and will become bored and[illegible] impatient while waiting for you to catch up.[illegible] Too often, audience members are forced to[illegible] choose between listening to the speaker and[illegible] reading the on-screen text. Instead, use text[illegible] sparingly. Highlight only those few keywords[illegible] that amplify, not repeat, what you're saying.

Use pictures to connect or[illegible] Photograph[illegible]



nature

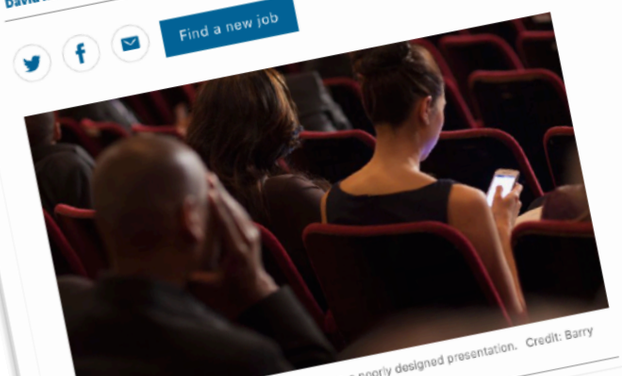
CAREER FEATURE · 23 AUGUST 2018

Prioritize the needs of the audience when giving a presentation

Speakers inadvertently prepare presentations for themselves rather than their audiences. A few mental exercises can help presenters to avoid this pitfall.

David Rubenson

Find a new job



become bored listening to a poorly designed presentation. Credit: Barry

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Scientific presentations: A cheat sheet

11 Jan 2017 | 13:00 BST | Posted by Jack Leeming | Category: Academia, Admin, Blog, Career paths, Careers articles, Collaboration, Communication, How to answer, Research

Scientific culture and insufficient training in public speaking leads to dull, text-heavy talks. Put more effort into presentations, say Andrew Gaudet and Laura Fonken

As postdocs with a combined 20 years of experience in neuroscience research, we've attended hundreds of talks and delivered dozens of presentations. We've realized it is imperative to perform your best every time you present — whether at a weekly meeting or at a job interview.

Your preparation and organization will help the audience understand your main points, and this professionalism will boost your reputation, which could lead to further opportunities. Ultimately, a presentation is one of the ways of influencing how others perceive your science and your competence. Here, we've put together some ideas for creating polished presentations.

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Next post: Networking: a very short cheat sheet

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Successful vs. effective research presentations

03 Feb 2017 | 13:00 BST | Posted by Jack Leeming | Category: Academia, Ask the expert, Blog, Career paths, Communication, Multimedia, Research, US

In a disturbing trend, biomedical researchers can achieve a degree of career success despite an inability to effectively communicate scientific information, say David Rubenson and Paul Salvaterra.

"I have only made this letter longer because I have not had the time to make it shorter."

– Blaise Pascal, The Provincial Letters, 1657

It goes without saying that every biomedical researcher wants to give effective presentations. Or does it? Is a presentation effective if it merely wows the audience with dense data, causes minimal objections, but fails to convey true scientific understanding? While such presentations may provide a degree of career success, they rarely inspire systematic or creative thinking. Scientists are wasting significant time listening to presentations that fail to effectively communicate information.

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CAREER COLUMN · 15 MAY 2019

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Ways to give an effective seminar about your research project

Grab your audience's attention by using slides as a roadmap and focusing on your role as a presenter, recommends Ananya Sen.

Ananya Sen

Working on your presentation skills takes patience, but will serve you well in the long[illegible]
Jaskot/Getty

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HOW TO GIVE A GREAT TALK

Expert presenters share advice on how to capture and hold the attention of a conference crowd.

BY NIC FLEMING

"It was horrific," says Eileen Courtney, "I was just a bundle of nerves. I wasn't able to eat for the whole of the previous day. That's when I realized I needed to get over my fear of public speaking."

Courtney is a third year PhD candidate studying interactions between metals and two-dimensional semiconducting materials at the University of Limerick, in the Republic of Ireland. Her moment of revelation came as she contemplated presenting her research at the Microscience Microscopy Congress in Manchester, United Kingdom, in July 2017. The gut-punch feeling of dread that the prospect of being on stage can trigger will be familiar to many early-career scientists. It could be induced by an invitation to an international conference, an academic group meeting or a public engagement event. Or it might be caused by an all-important presentation as part of an interview process.

"YOU HAVE TO THINK ABOUT THE LEAST KNOWLEDGEABLE PERSON IN YOUR AUDIENCE."

Although the audiences and goals of a talk may differ, the skills and techniques required to pull it off are similar. So what differentiates a good presentation from a bad one? How can you up your game in front of the lectern? And is being able to impress an audience really all that important?

The answer to that last question is an emphatic yes, says Susan McConnell, a neurobiologist at Stanford University, in California, who has been giving talks on giving talks for more than a decade. "The whole point of doing science is to be able to communicate it to others," says McConnell. "Whether it is to our close colleagues, other scientists with a general interest in our area or to non-scientists, clarity of communication is essential."

Not all researchers recognize the value of communication is essential." Not all researchers recognize the value of taking time out of the lab to tell colleagues about their work. "Some have this idea that

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Effective Writing and Presentations

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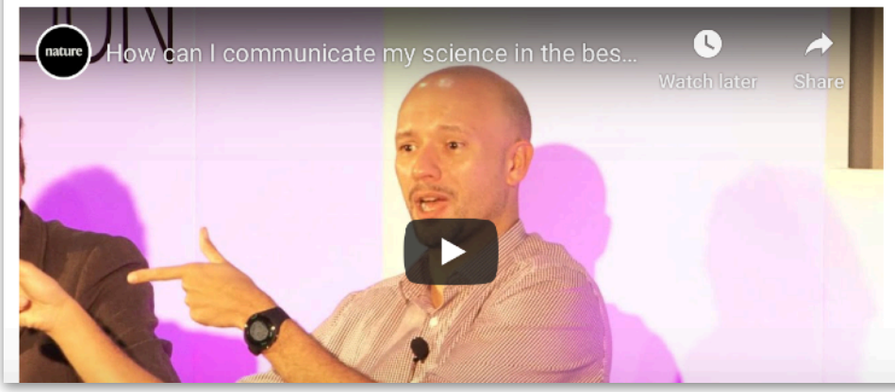
How to communicate your science in the best way

22 Dec 2014 | 06:00 BST | Posted by Julie Gould | Category: #NJCE14, Communication

Use two sentences to communicate the essence of your research and aim everything you say to 12-year-olds, say science communicators at the 2014 *Naturejobs* Career Expo in London.

The career paths in science communication panel at the 2014 London *Naturejobs* Career Expo was chaired by the *Naturejobs* editor, Julie Gould, who was joined by Greg Foot (Freelance), Jonathan Sanderson (StoryCog), Steven Palmer (Cancer Research UK) and Celeste Biever (Chief editor for online Nature news & comment).



About this blog

Naturejobs is the world's leading dedicated science jobs board. The *Naturejobs* blog aims to be the leading online resource for scientists in academia and industry who seek guidance in developing their careers. The blog delivers a mix of expert advice and personal stories to help readers review, set and achieve their career goals. We like to interact with our readers – we want to know what you want to know. Please share your thoughts in the comments section and get in touch if you have content suggestions. Pitches for guest posts are encouraged and should be emailed to the editor Jack Leeming at naturejobseditor [at] nature.com

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Very inspiring post. Onwards Isaac ... Read more
-- Dennis Kulvinder

Some important clichês

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Good writing requires

lots of reading

There is no secrete recipe.