



STANDING UP FOR SCIENCE IN PUBLIC DEBATES

在公共辩论中坚持科学

Julia Wilson, Director of operations

运营总监

Sense about Science

An independent campaigning charity

一个独立的慈善机构的活动



- Challenge: 对“科学”和“证据”在公共生活中的歪曲提出质疑
- Mobilise: 动员公众提出“证据”
- Encourage: 鼓励研究人员和决策者讨论“证据”
- Call: 呼吁公开并坦诚研究报告
- Prioritise: 优先考虑社会和科学的难题

Why we started 我们的开始

**New evidence 'shows MMR link to autism'
新证据显示MMR与自闭症有关**

Daily Mail, 9 Aug 2002

Public says no to pesticides

公众对杀虫剂的拒绝

Friends of the Earth, 19 June 2000

**Kisses may lead to cot death
亲吻可能会导致婴儿死亡**

The Times, 24 Oct 2000

**Trials of GM crops bring new fears of 'Frankenstein' food
转基因作物的试验带来了关于“弗兰肯斯坦”式的食物的新的恐惧**

Daily Mail, 30 December 2002


**Cleaning chemicals 'reach baby'
清洁用的化学品 '影响到了婴儿'**

BBC Online, 7 Sept 2005


**Fluoride water 'causes cancer'
含氟化物的水“致癌”**

The Guardian, 12 June 2005

Why we started 为什么我们要开始




Scientists were afraid to
speak out
科学家都害怕说出来





We work with over 6,000
scientists and experts
我们与6000多名科学家
和专家合作





And hundreds of public groups,
community organisations, scientific
institutions, journalists,
policymakers and medical charities
还有数百个公共团体，社区组织，
科学机构，记者，决策者和医疗
慈善机构

Our campaigns challenge the misrepresentation of evidence in public life and advocate open and honest discussion of research findings.

我们的活动的质疑在于公众生活中的虚假证据，倡导公开和对于研究结果的坦诚讨论。



Marriage TRIPLES your chances of surviving major heart surgery
婚姻让你幸存于较重大的心脏手术的机会了翻三倍

Daily Mail, 23 August 2011

So much for global warming as planet earth gets colder
全球变暖不是真实的，
地球变得越来越冷

Daily Express, 5 July 2011

Olive oil cuts risk of stroke by 41%
橄榄油减少了41%的中风风险

Daily Mail, 16 June 2011

Stem cell stroke trial "is safe"
干细胞中风试验
“是安全的”

BBC News, 31 August 2011

Could your saucepan bring on menopause?

你的平底锅会引起更年期吗？

据研究减肥药对肝脏有害

Cancer jab alert after girl dies
女孩在接种癌症疫苗后去世

BBC News, 29 September 2009

How we respond 我们如何回应



Group discussions 小组讨论

Why should experts engage with the media?

专家为什么要与媒体沟通？

What are the benefits to researchers?

对研究者的好处是什么？

Why does it matter to the public?

为什么这对大众是重要的？



Group discussions 小组讨论

What are the challenges for engaging with the media?

和媒体沟通的挑战是什么？

What can go wrong?

什么可能出错？

What would stop a researcher from speaking to the media?

什么会阻止研究者与媒体接触？



Voice of Young Science (VoYS)



Standing up for Science
media workshops for
early career researchers
为在职业的早期的研究人员
举办媒体讲习班：“在公共
辩论中坚持科学”



Tips for engaging with the media 与媒体沟通的技巧



- Timeliness really matters

及时性真的很重要

- Journalists have very quick deadlines.
记者的截止日期非常之快。
- If a journalist calls - respond quickly!
如果记者来电 - 迅速回答！

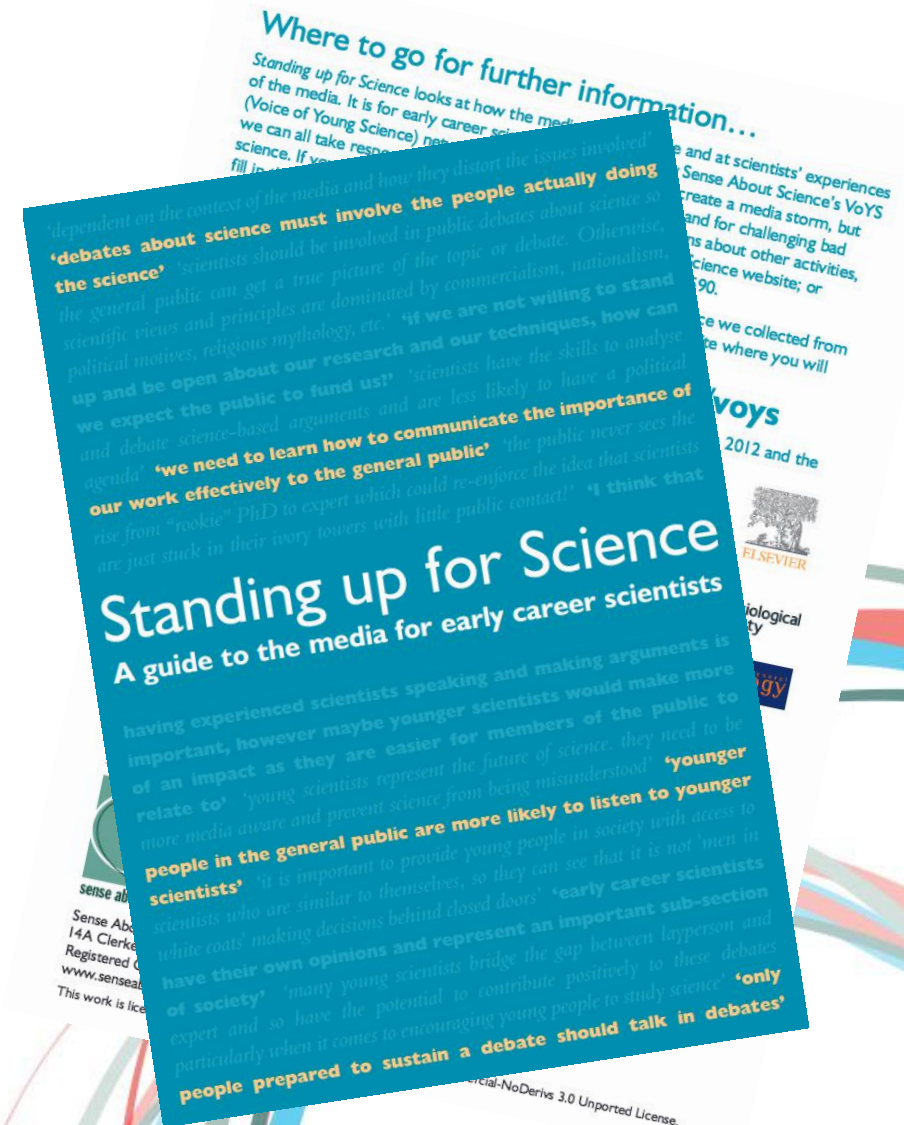
- The journalist doesn't write the headline

记者会不写标题

- Be proactive – get yourself known

积极主动 - 让自己被媒体认识

- Contact your press office
联系你的新闻办公室



Speaking to journalists: how to prepare

与记者沟通：需要准备什么

- Keep it brief and simple

主要信息要简洁

- Pick your three key points, write them down and stick to them

选出三个关键点，把它们写出来以及记得强调

- Don't be afraid to repeat yourself

不要害怕重复你自己



Be open about uncertainties and weaknesses



对不确定性和弱点的开放性沟通

- Don't be afraid to say 'I don't know'

不要害怕说 “不知道”

- Be honest about the uncertainty in your findings
 - don't overstate your results, explain what you still don't know.

坦诚你的研究结果中的不确定部分

——不要美化你的结论，可以解释你不清楚的部分

- Don't extrapolate beyond your findings or make speculative claims

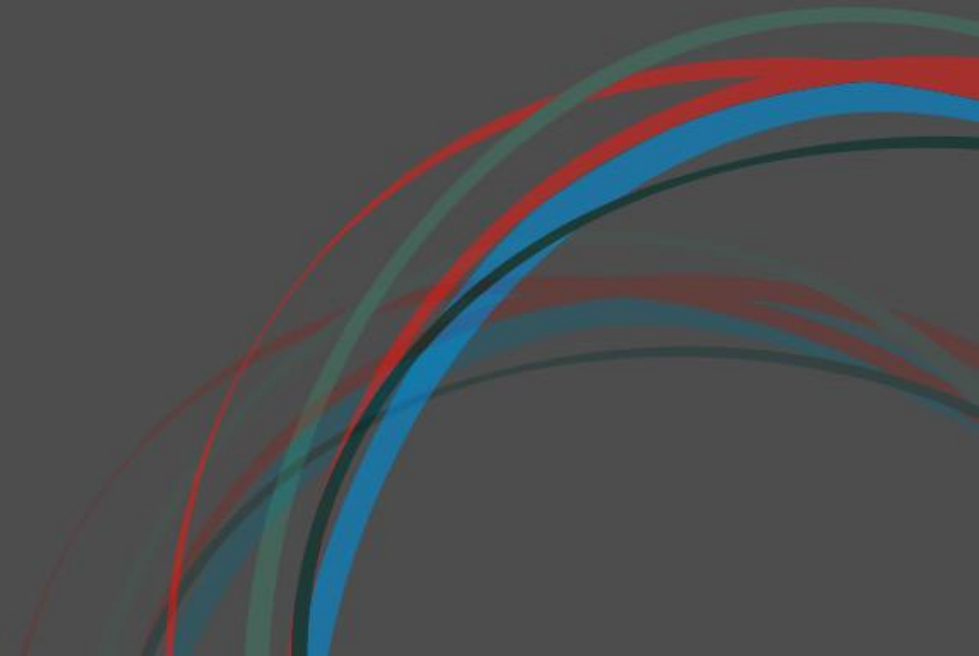
不要让推断超出你的研究结果或进行猜测

- Use real numbers – avoid talking about relative risks.

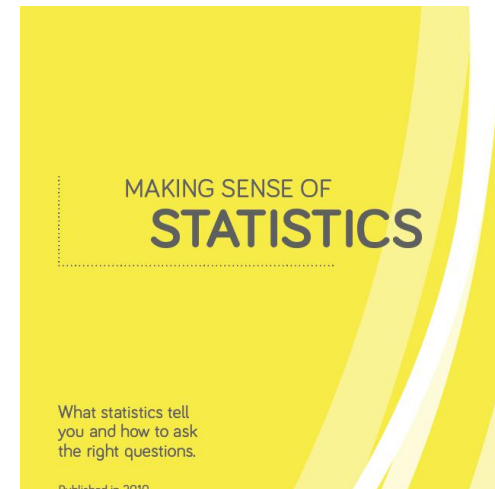
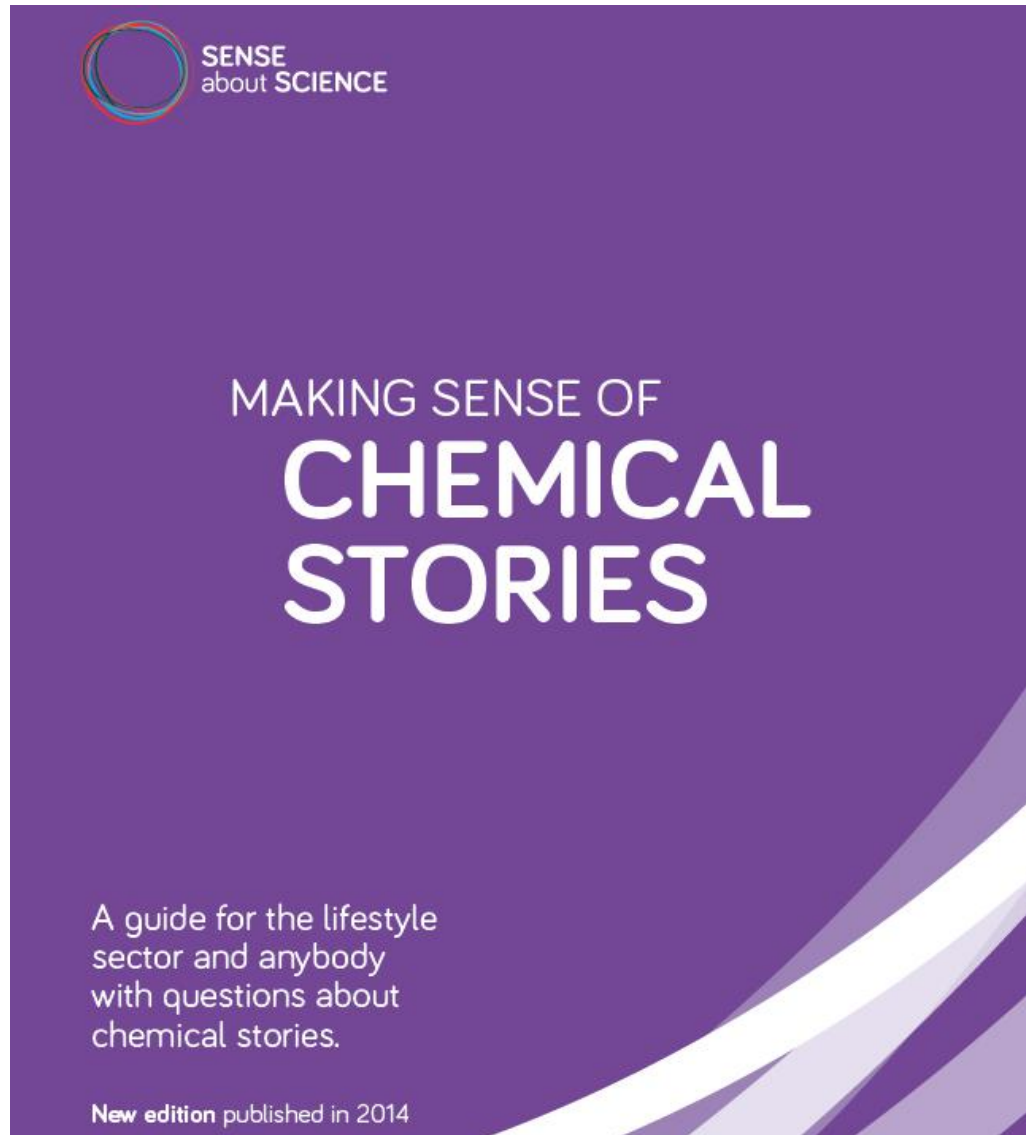
使用具体的数字 - 避免谈论相对风险。



Making Sense of.....



Making sense of.....





MAKING SENSE OF **ALLERGIES**

A guide to what allergies are
(and aren't) and the evidence
for causes and treatments.

Published in 2015

MAKING SENSE OF **FORENSIC GENETICS**

MAKING SENSE OF **GM**

What is the genetic
modification of plants and
why are scientists doing it?

Published in 2009

MAKING SENSE OF **RADIATION**

A guide to radiation
and its health effects



Apples

WATER
FRUCTOSE
GLUCOSE
SUCROSE
AMYLOSE



Love Hearts

SUCROSE
MALIC ACID
TARTARIC ACID
SODIUM BICARBONATE
STEARIC ACID
AMYLOSE
AMYLOPECTIN

What people ask about 人们会问什么问题？

Is it a scare story? 这是一个恐怖故事吗？（假的）

What tests have been done? 已经做了什么测试？

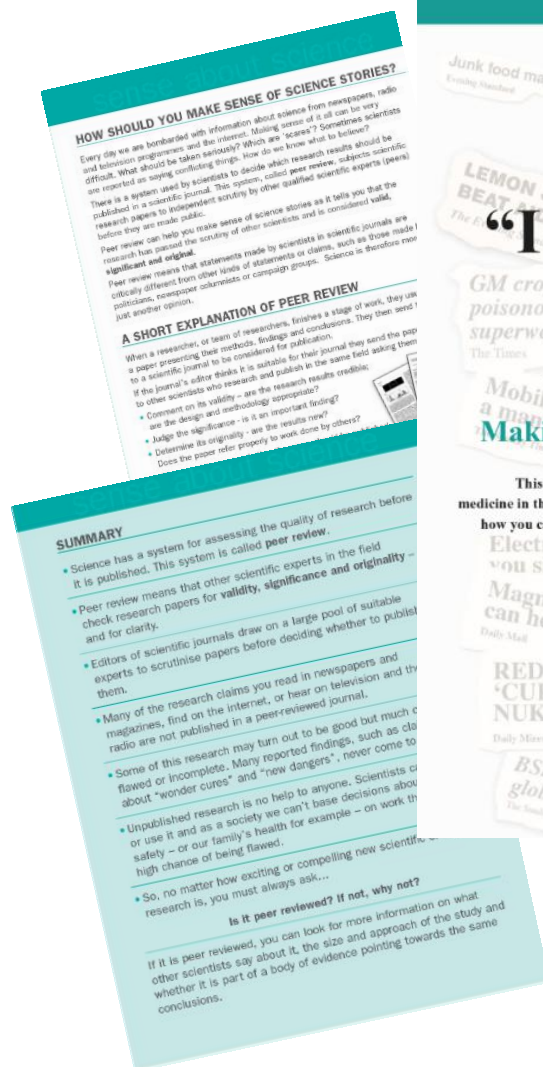
What do scientists actually know? 科学家究竟知道什么？

Is it a proper study? 这是一个适当的研究吗？

Is it majority opinion? 这是大多数人的观点？



A public guide to peer review 同行评审的公共指南



A public guide to peer review 同行评审的公共指南



Over **500,000** copies requested to date 到目前为止，拥有超过50万份的需求

- News Media 新闻媒体
- Press Officers 新闻官
- Conference Organisers 会议主办单位
- Higher Education 高等教育
- Teachers 教师
- Parliamentarians 议员
- Governments 政府
- NGOs 非政府组织
- Medical Charities 医疗慈善机构
- Health Service 医疗服务
- Companies 公司
- Policy Groups 政策组
- Community Organisations 社区组织
- TV programming 电视节目
- Discussion Forums 论坛
- Museums 博物馆
- Libraries 图书馆
- Celebrities 明星
- Publishers 出版商
- Lifestyle Sector 时尚娱乐机构
- Websites 网站

I've got nothing
to lose by
trying it

Stem cell injection trials raise hope of cure for MS

By Martin Beckford

A BRITISH hospital is the first to try a procedure that could help sclerosis victims.

Tens of thousands of patients with MS could benefit from the revolutionary treatment if the tests taking place at the Frenchay hospital, near Bristol, are successful.

The procedure involves patients being injected with stem cells taken from their own bone marrow.

It is a treatment that is currently ineffective and can have terrible side effects.

But researchers believe there is an alternative – a high-fat diet that dramatically reduces seizures.

The diet that can treat epilepsy

Emma Williams was told her son Matthew wouldn't make it to the age of 12 on account of his severe epilepsy, or if he did he would need to be placed in a care home.

He was only six when Emma heard this from the doctors treating him at Great Ormond Street Hospital (GOSH). But thanks to a specialised diet he is now a happy 14-year-old with a normal life expectancy.

Drug for Alzheimer's can bring the brain back to life

Roger Highfield
Science Editor

to develop a drug that we could give preventively from a certain stage."

Can goats' blood help eat MS? mother talking if it can

Dorothy, 69, believes improved energy



Weighing up claims about cures
and treatments for medical conditions

Group discussions 小组讨论

Looking at media articles from the UK

查看英国媒体的文章

Is the reporting accurate? 报告准确吗？

Does the headline match the story? 标题和故事相符吗？

What kind of study is it? 这是一种什么的研究？

Is it peer reviewed? 有同行评审吗？

Where is the research from? 研究从何而来？

Do you think this is good science reporting?
您觉得这是好的科学报道吗？



Questions we can ask 我们可以问的问题



- Does the headline match the story? 标题和故事相符吗？
- How big is the risk? 风险有多大？
- Are there comments from an expert who is not an author of the study? Pay attention to the last paragraphs

是否有来自不是此研究领域的专家的意见？（ 请注意最后的段落 ）

- What's the evidence? 证据是什么？
- Where is the research from? What type of study?

研究从何而来？这是什么类型的研究？

- Anecdotes? Conference? Peer review? Systematic review?

传闻？会议？同行评审？系统审查？

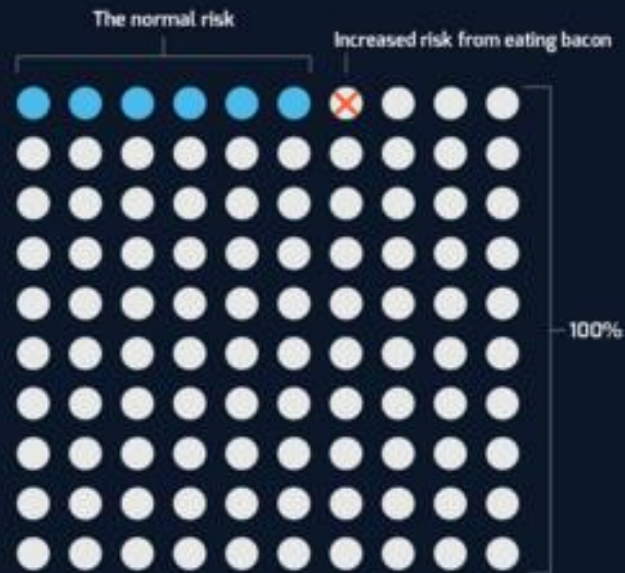
100% stroke risk increase from oversleeping

**STATINS INCREASE
DIABETES RISK BY 50%**

Bacon increases bowel cancer risk 20%

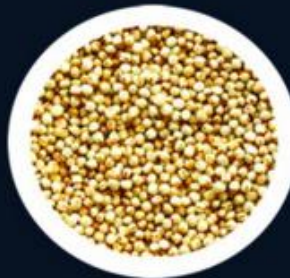
Why a big percentage increase in risk
isn't always so scary ...

For example, if the usual risk of getting bowel cancer is 6 in 100, a 20% increase in risk from eating bacon now makes that a 7 in 100 chance:



Always look for the real numbers.

Which one of these is a superfood?



None of the above.
They're all good for you, but superfood is just a marketing term,
not a scientific one.

ASK FOR
EVIDENCE



Supported by
wellcometrust

BDA

The Association
of UK Dietitians

AskforEvidence.org



Sense About Science @senseaboutsci · Apr 20

'Superfood' is a marketing term, not a scientific one #AskforEvidence @BrDieteticAssoc @wellcometrust



110



55



Other ways to get involved 其它的沟通的方式



- Practice! 实践!
- Local media 当地媒体
- Specialist press 专业出版社

- Blogging & writing 博客和写作
- Social media 社交媒体

- Learned societies - opportunities & support
精通社会 一机会与支持
- Public events 公共活动
- Speak at conferences 展会发言



Public audiences 公众中的观众



- Barristers 大律师
- Legal writers 法律撰写者
- Legal charities 合法的慈善机构
- Police officers 警察
- College of Policing 警察学院
- Potential jurors 潜在的陪审员
- Crime fiction writers 犯罪小说作家
- Journalists 记者
- Genealogist 系谱学者
- Voice of Young Science VoYS

A teal-colored rectangular graphic with a white diagonal stripe running from the bottom left towards the top right. The text 'MAKING SENSE OF' is in a smaller, white, sans-serif font, positioned above the words 'FORENSIC GENETICS' which are in a larger, bold, white, sans-serif font.

MAKING SENSE OF
**FORENSIC
GENETICS**

Scientists under threat 受到威胁的科学家



Elizabeth Loftus wins the
2016 John Maddox Prize



Don't destroy research
不要破坏研究



TAKE THE FLOUR BACK
27th May 2012

A mass action
against Genetically
Modified wheat



[Home](#)

[About](#)

[Take action](#)

[Press](#)

[Resources](#)



/ WATCH THE VIDEO



<https://www.youtube.com/watch?v=6SHJ-sBKV5U>

It is to science that we owe much of our health and prosperity. Research into the unknown is what drives humanity forward, and to destroy it is an attack against us all.

Steve Forden, PhD Researcher

Wanton destruction must never be able to trump evidence based research.

Louise Ward, Student - plasma physics

Without scientific research, we are at risk of allowing the anti-science movement to destroy scientific progress with their irrational fear of change and the things they've not bothered to understand.

Brian, Director

Beacu
dark a

Martin Harvey, ecologist

Mar

Every
crops

I'm concerned about potential dangers with GM, but the only way to find out the truth is through research - destroying research leaves us all in the dark.

Alisc

Science is vital

Oliver Keane, Student

The work done by GM crop scientists is a vital part of moving towards a more environmentally-friendly mode of agriculture, as well as helping mankind survive the effects of climate change.

Janis Rudzitis, Designer

It's just common sense.

Christopher Maslen, 3D Artist

Scientific research like this is what is going to bring humanity through the problems of the 21st century. Impeding this process because of ignorance should be prevented at all costs.

Martin Binfield, Self Employed

Scientific research has improved our lives immeasurably. Long may it continue.

Bob Blaskiewicz, College Professor

We need to be a little bit better than the people who burn witches.

Andrew Gosling, Student

People who think that destroying research is a good idea are the ones who are

Sergio Robies, Math and Science Teacher

Because it is the best way to find the truth about many matters that concern us in this world, one of them being how to feeding a growing population without

Kate Merritt,

Rothamsted is a hist
research, and it also

wonder in science to me and ultimately shaped my future decision to become a scientist myself. My mother worked at Rothamsted for 25 years, and it kindly opened its doors to me by way of a summer research experience placement, giving me my first taste of science which I will never forget. Rothamsted is a kind and timid research facility, untainted by commercial drives but instead showing a genuine

understanding of the world. The research that is done at Rothamsted is the

poorer that genetic modification is done safely and responsibly. If you are

it concerned that Rothamsted will pull a Monsanto, then fight the system that allows for such exploitation! Don't destroy the science that can

use benefit millions of people around the world! Destroying these crops is a backwards and profoundly ignorant thing to do."

and complex that humans have ever faced in their quarter-million year tenure on this planet. Even if the results of the Rothamsted are uncertain, one thing is: we will not solve the problems bearing down on us by abandoning science.

Tim Hubbatd, Sys Admin

Science is the only tool we have that can reliably make sense and create understanding of the universe. To paraphrase Carl Sagan: It is a candle against the darkness of our demon-haunted world.

Jenny Emmers, mum of three

I find it hard to follow what is likely to be useful for the future but I don't think I'll have any chance if people destroy the research that's supposed to tell us.

population can be fed with less wasted.

Ross McLaren, Scientist and Editor

As someone else has said, destroying scientific research is no different than burning books and taking humanity back to the dark ages and defending science is a subject that i'm sure many scientists and

Science has given Man the ability to understand or universe and vastly improve the human condition.

ent

of important
ing, and
ng enough

that it won't have been in vain.

Julio J Morera, Pool Cleaning Service

Let the science continue! This research aims to reduce the environmental impact of agriculture on a world with ever-increasing demands for food. Just because GMOs are not natural" doesn't mean they are automatically harmful! The potential benefits of GMOs are enormous, and if anything, we should all be working together to ensure that genetic modification is done safely and responsibly. If you are concerned that Rothamsted will pull a Monsanto, then fight the system that allows for such exploitation! Don't destroy the science that can benefit millions of people around the world! Destroying these crops is a backwards and profoundly ignorant thing to do."

Martin Jones, Software Product Manager

Without better ways of producing food, in the long run billions may starve. Opposition to GM technology is really misguided and borders on a serious danger to humankind.

Dave, IT Administrator

Why do this? Why violently denounce this part of scientific progress while embracing other parts, like antibiotics, nylon, rayon, the internal combustion engine, nutrition, airbags, superglue, toothpaste, computers, GPS, phones and hair gel, just to name a few.

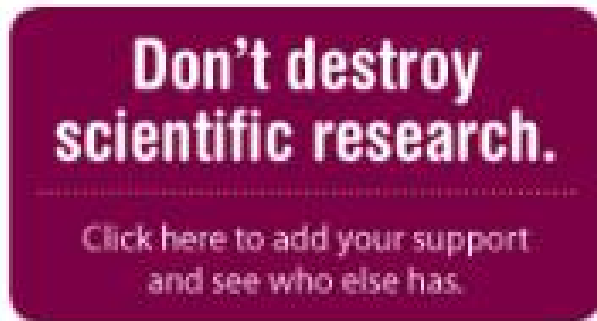
This is research into growing sustainable food in order to feed the world. Are these activists" kidding? Their ideals are more important than feeding the hungry? Sorry, but that's crap. This stuff is important. Leave it alone."

Kendall, Thompson

#dontdestroyresearch



Protesters plan to destroy Chemical Ecology group's scientific research at Rothamsted bit.ly/IFAmYX #defendscience



Stephen Fry @stephenfry 3 Ma
The latest assault on what remains of Castle Enlightenment: please support Sense About Science fry.am/Kf7tpS



Mark Henderson @markgfh
With Rothamsted GM trial threatened w vandalism I've posted the [#geekmanifesto](http://ow.ly/1MIKJa) section on GM crops ow.ly/1MIKJa #dontdestroyresearch



Please support plant scientists facing destruction of the research bit.ly/JdX6xA #defendscience



Tim Minchin @timminchin 18h
If anyone is attending May 27 protest, PLEASE do no damage. GM is not the enemy. Abuse of research is. @takeflourback is doing the latter.



Derren Brown @DerrenBrown
Good & worthwhile article RT @timminchin: @TomChivers has gone & done work so I can stop talking. blogs.telegraph.co.uk/news/tomchiver...

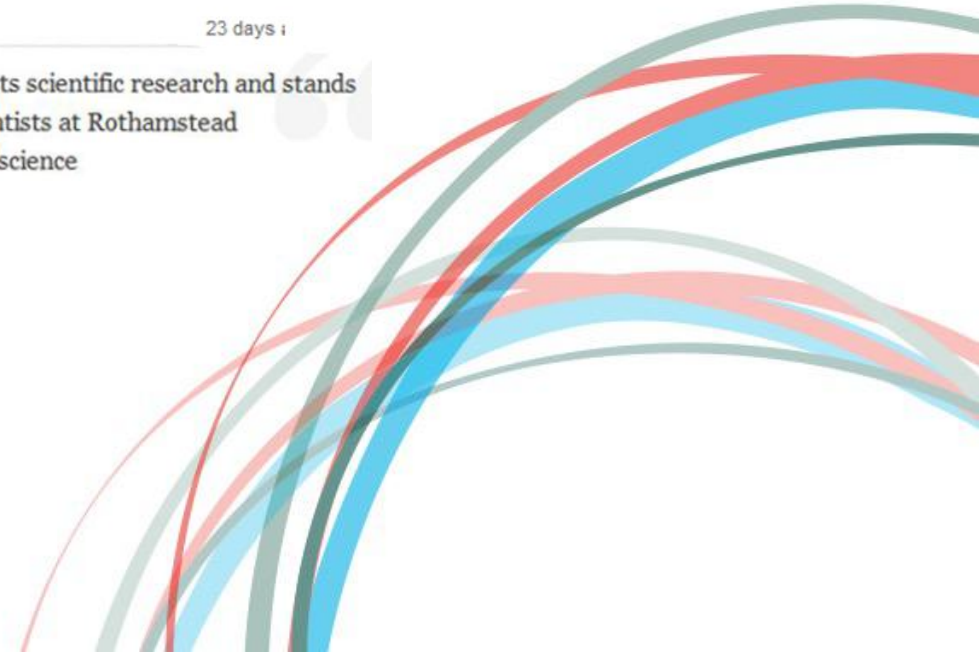


George Freeman @Freeman_George 21 May
The world needs more research into GM not less. Join 5000 others and sign @senseaboutsci petition #dontdestroyresearch: bit.ly/JPBbxM



Mark Lynas @mark_lynas 16 |
The #dontdestroyresearch petition is over 4,500 signatories - let's get it to 5,000 by the end of the week! senseaboutscience.org/petition.php

23 days |
Science Oxford supports scientific research and stands fully behind plant scientists at Rothamstead bit.ly/KqeldR #defendscience



Plant science Q&As 植物科学中的问答



Plant science panel

/ Potatoes: what are the threats and what can we do?

Last year farmers in the UK harvested almost 6 million tonnes of potatoes. But farmers and researchers are concerned that threats including diseases and climate change pose a serious risk in the future.



Credit Paul & Kelly Flickr: CC BY-NC 2.0

Got a plant science question? Tweet @senseaboutsci using #plantsci, or email us

Questions about GM wheat?

Ask Professor Christine
Raines in our Reddit AMA:
9th March.

#plantsci <http://bit.ly/2lUZx2g>





Think this
apple is
natural?

Live online Q&A
What does natural
actually mean?

Friday 27 February
1-2pm

Do we need another dash for gas or should we keep it in the ground?



FRACKING

A live online Q&A

Tuesday 12th May
1pm
#energy

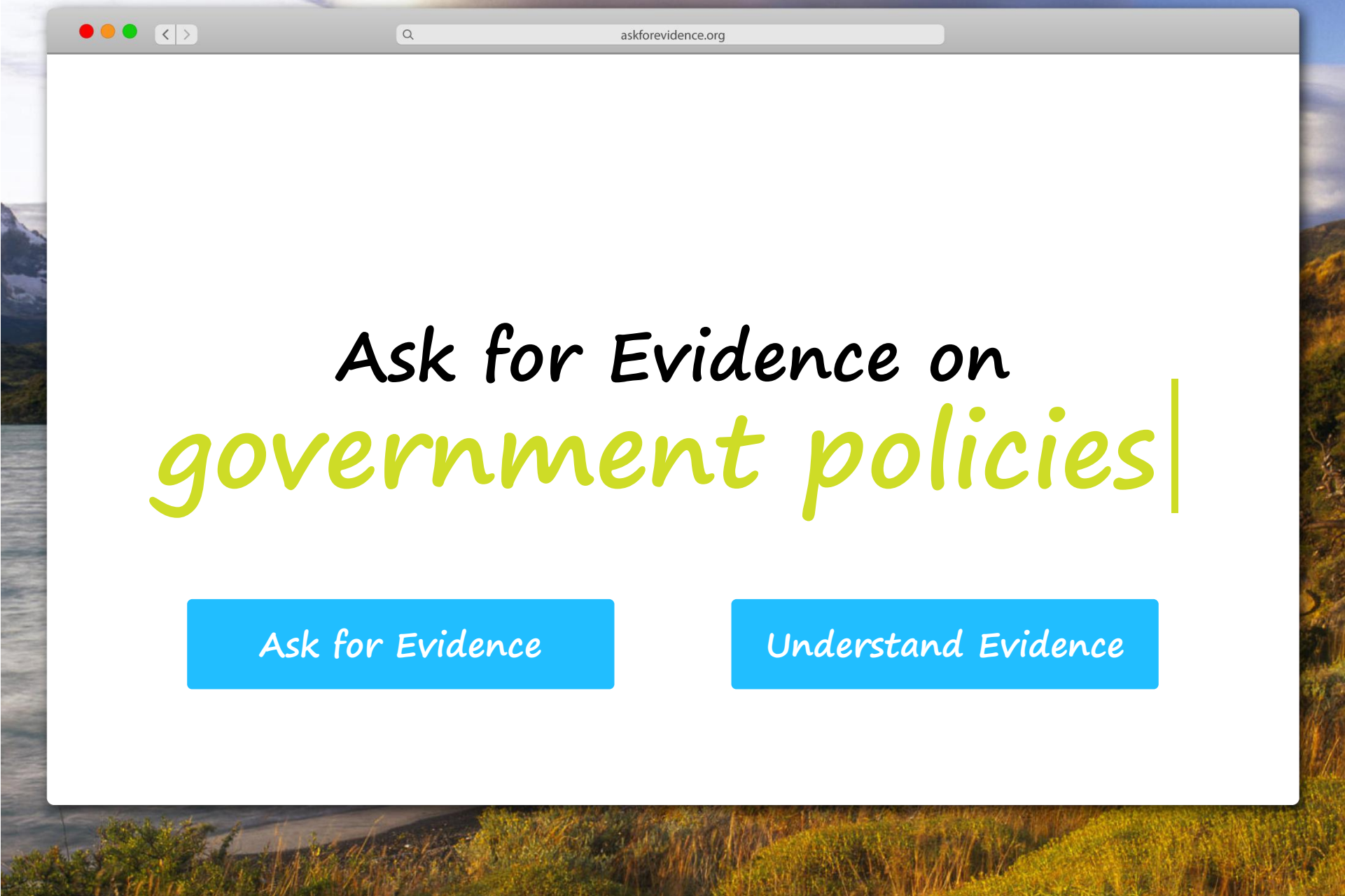
How we respond 我们如何回应



We encourage the public to challenge misleading claims
我们鼓励公众质疑误导性的断言

ASK FOR EVIDENCE





askforevidence.org

* What's the claim? ?

Do you have a picture of the claim?

No file selected.

Describe the image

* Where did you see or hear the claim? ?



Great! You've created a log

* Email address to send your request to

Your message

Dear Sir/ Madam,

I was interested to [see/ read in/ hear] the claim [you/ your organisation/ your company] made that test.

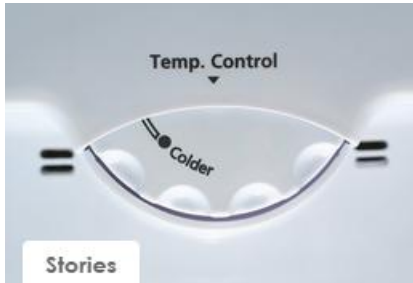
I would be grateful if you could send me the relevant scientific information that supports this claim.

Please note that I am asking this as part of the Ask for Evidence campaign and will share the response I get publicly.

Best wishes

A community taking on one claim at a time

一个社区一次提出一项主张



The cool down work out



Do grammar schools increase income inequality?



Will buying an iPad help your son to read?



Drinkable Suncream claim investigated by BDA



"Drowning in evidence"

Last week I went along to the Big UK Cycling Debate – the first time the three main parties had taken part in a debate on the future of cycling [...]



Scooter racing crack down



Network Rail keen to improve 'blue light' pilot study



Vision Express launch investigation after giving misleading advice

A community helping make sense of evidence

社区有助于澄清证据



Working out what's reliable evidence

Working out what's reliable evidence

Some basic insights and questions to ask about the quality and reliability of evidence.

1. Introduction

2. Anecdotes, testimonials and personal stories

3. Surveys, samples and opinion polls

4. Peer Review

< PREV

NEXT >

2. Anecdotes, testimonials and personal stories

Journalists often use anecdotes or personal stories to make their stories seem more relevant to people's lives or emphasise why a piece of scientific research matters. They are usually presented as case studies of individuals' experiences, often without any facts or figures.

In some cases, a personal story won't be based on any credible scientific research at all. For instance, someone may claim that a doctor cured them of cancer using magnets, even though no human study of "magnet therapy" has ever been done.



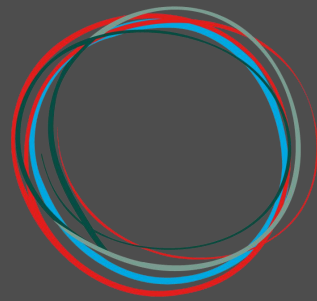


How can we make politicians, commentators, official bodies and companies accountable for the claims they make?

我们如何使政治家，评论员，官方机构和公司为他们主张负责？

If they want us to **vote** for them, **believe** them or **buy** their products, then we should **Ask for Evidence**.

如果他们希望我们为他们**投票**，**相信**他们或**购买**他们的产品，那么我们应当**要求获得证据**。



SENSE
about **SCIENCE**

Because evidence matters

www.senseaboutscience.org



g



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Julia Wilson

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