

# Science and journalism (In the middle of)



*CNIC – Jesús Méndez – 2018*

# General view

- ◆ In the middle of, an alternative career and a short bio
- ◆ Scientific journalism:
  - A bridge with many good things (and some worse ones)
  - Who?
  - Scientist as a collaborator?
  - Scientists vs. journalists (a conversation)

# Scientific journalism: in the middle of the day



- ◆ 1- Education for Science
- ◆ 2- How to motivate the young scientific heart
- ◆ 3- Our social responsibility as scientists
- ◆ (4- Alternative careers)

# (There is ) Life after science

**sinc**  
La ciencia es noticia

PORTADA | CIENCIAS NATURALES | **TECNOLOGÍAS** | BIOMEDICINA Y SALUD | MATEMÁTICAS, FÍSICA Y QUÍMICA | HUMANIDADES | CIENCIAS SOCIALES  
NOTICIAS | REPORTAJES | ENTREVISTAS | MULTIMEDIA | AGENDA | ESPECIALES | OPINIÓN

POLÍTICA CIENTÍFICA: Política científica

## Los investigadores buscan alternativas a la academia en el sector privado La vida después de la ciencia



Me gusta 2504 Tweet

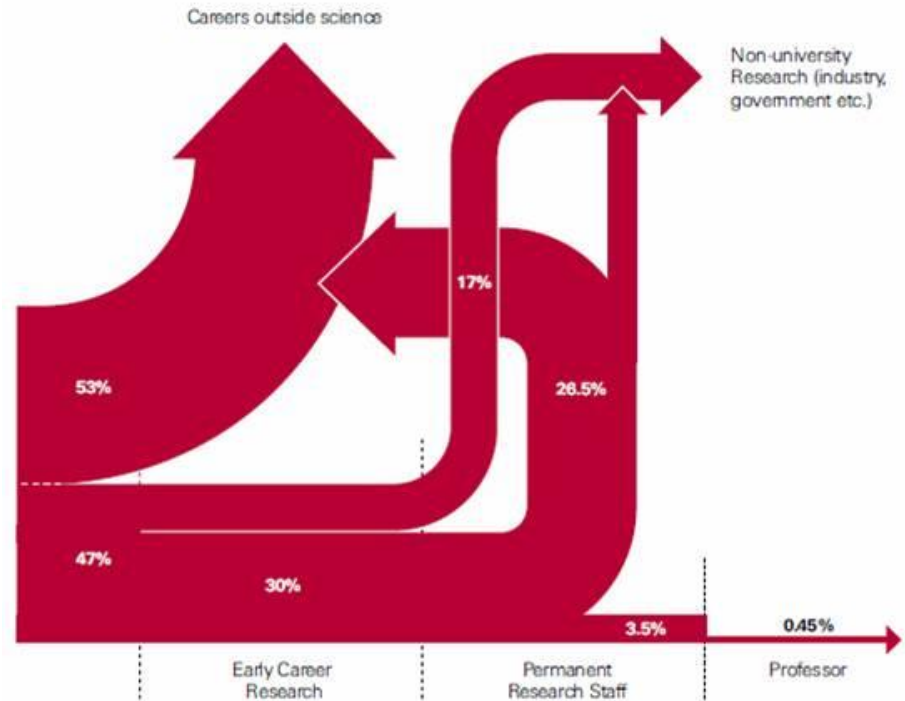
La mayoría de los estudiantes que comienzan un doctorado no terminarán contratados de forma estable como investigadores. Algunos de ellos no desean continuar una carrera científica, pero una buena parte se ven obligados a abandonarla, forzados por un cuello de botella que dificulta el acceso a un puesto. No solo hay un problema en la estructura, también en la formación, ya que apenas se educa o se informa sobre otras alternativas.

Jesús Méndez | Seguir a @jesusmendezzz | 15 agosto 2015 08:00



El número de investigadores posdoctorales ha aumentado considerablemente en las dos últimas décadas en todo el mundo. Solo en los Estados Unidos creció en un 150% entre el año 2000 y el 2012. / Fotolia

Figure 1.6 Careers in and outside science



# Short Bio



Máster en  
Comunicación  
Científica,  
Médica  
y Ambiental



dixit.  
*Comunicación científica*

EL CAZADOR DE CEREBROS



BCN SCIENCE CORNER  
Ciència, Ciutat, Territori

B-DEBATE

Materia III

SCIENTIFIC AMERICAN  
ESPAÑOL

EL ESPAÑOL

EL PAÍS



Público

TERCER MILENIO



Coordina: Pilar Perla



PEBC

# Short Bio

Solo hay un fármaco aprobado para su uso en melanoma  
**Por qué la inmunoterapia contra el cáncer es el avance científico del año**



EL PAÍS CENCIA EN ESPAÑOL

### Así opera el 'cirujano robot'

Este verano se han realizado tres trasplantes de riñón mediante cirugía robótica en España. Entramos en un quirófano para ser testigos de esta revolución quirúrgica

ALBA MENDOZA GONZÁLEZ · PHO SANGCLEMENTE

Boehringer 10 años (ago. 2017) 0

NEWSLETTERS  
Boehringer en Español

TE PUEDE INTERESAR  
El Real Madrid después a Lopetegui y Sotri es el entrenador "operacional"

04 MILENIO

### ONCOLOGÍA > VIAJE ALLUCINANTE AL FONDO DE UN TUMOR

¿Qué sucede en el interior de un tumor? ¿Cómo se relacionan sus células? ¿Cómo se comunican entre ellas? ¿Cómo se relacionan con el entorno? Estas son algunas de las preguntas que se hacen los investigadores en el campo de la oncología. En este artículo vamos a explorar algunas de las respuestas más recientes.

Más información sobre: [anestesia](#) [consciencia](#) [cirugía](#) [fármacos](#)



### El funcionamiento de la anestesia continúa siendo un misterio

El origen de la anestesia moderna tuvo lugar hace más de 150 años en un circo de Boston. Hoy, a pesar de emplearse millones de veces cada día, su mecanismo de acción permanece desconocido y las teorías generales que pretenden explicarlo han caído recientemente. Los expertos reclaman mayor investigación para mejorar el cuidado de los pacientes.

Más información sobre: [anestesia](#) [consciencia](#) [cirugía](#) [fármacos](#)

Jesús Méndez · [Seguir a @jesusmendez](#) | 06 julio 2015 09:32

# (A bridge) Science and journalism: a classic narrative

- ◆ Research, a classic narrative
  - **Approach** (introduction, context)
  - Tools (methods – writing)
  - **Development** (results)
  - **End or denouement** (discussion in a new context, doors more or less open)

J Mol Evol (2005) 60:174–182  
DOI: 10.1007/s00239-004-0048-3

**MOLECULAR  
EVOLUTION**  
© Springer Science+Business Media, Inc. 2005

## Intervening Sequences of Regularly Spaced Prokaryotic Repeats Derive from Foreign Genetic Elements

Francisco J.M. Mojica, César Díez-Villaseñor, Jesús García-Martínez, Elena Soria

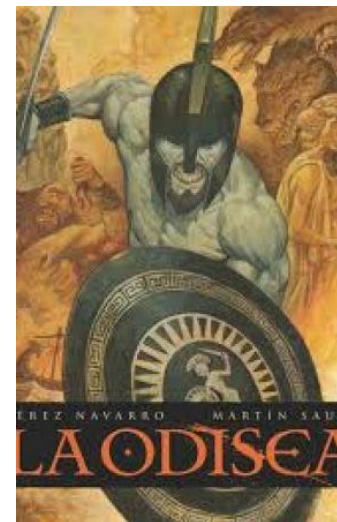
División de Microbiología, Departamento de Fisiología, Genética y Microbiología, Universidad de Alicante, Campus de San Vicente, E-03080, Spain

Received: 6 February 2004 / Accepted: 1 October 2004 / [Revising Editor: Dr. John Huelsenbeck]

**Abstract.** Prokaryotes contain short DNA repeats known as CRISPR, recognizable by the regular spacing existing between the recurring units. They represent the most widely distributed family of repeats among prokaryotic genomes, suggesting a biological function. The origin of the intervening sequences, at present unknown, could provide clues about their biological activities. Here we show that CRISPR spacers derive from preexisting sequences, either chromosomal or within transmissible genetic elements such as bacteriophages and conjugative plasmids. Remarkably, these extrachromosomal elements fail to infect the specific spacer-carrier strain, implying a relationship between CRISPR and immunity against targeted DNA. Bacteriophages and conjugative plasmids are involved in prokaryotic population control, evolution, and pathogenicity. All

### Introduction

Prokaryotic genomes contain a peculiar family of repeated DNA sequences. They consist of 24- to 40-nucleotide (nt) recurrent motifs regularly spaced by intervening sequences of sizes similar to that of the repeated unit. These repetitive elements were defined as short regularly spaced repeats (SRSR) (Mojica et al. 2000) and more recently named CRISPR (clustered regularly interspaced short palindromic repeats) (Jansen et al. 2002). CRISPR are widespread among the various phylogenetical and phylogenetic groups of prokaryotes including *Archaea* (both *Crenarchaeota* and *Euryarchaeota*) and lineages of Gram-negative and Gram-positive bacteria (Jansen et al. 2002; Mojica et al. 2000). Thus they represent the most widely distributed family of repeats among



# Good things

(about scientific and freelance journalism)

- **Curiosity**
  - Lots of topics (never-ending and possibilities of multiple approaches)
  - Lots of sources
- **Process** of composition, writing, verifying
- More immediate **reward**
- **A variety** of platforms and styles
- (Relative) Self-management of **time** vs. face-to-face work)

## Worse things

- **One millimeter** deep
- **Depends** on available options
- **Job insecurity**
- **Money, money...**
- **Time management** and autonomy  
(freelance)

# Science journalism

## ¿WHO?

"If I have to speak from my experience, in general it is more feasible to train a professional **with a scientific background** to be a scientific journalist “

*Diana Cazaux, Argentine scientific journalist*

“The problem lies in the fact that a significant part of Spanish journalists **lacks a minimum knowledge required** to rigorously address scientific information”

- “**Journalists accustomed vs. specialized**”

- "Many journalists think that the most specialized journalists understand news in terms of scientific progress, while 'general' journalists understand it in terms of its effects on people and the quality of life"

*Carlos Elías, chemist and journalist*

"**It does not matter who does it, what matters is if it's done well**"

# Science and journalism: the scientist as a collaborator

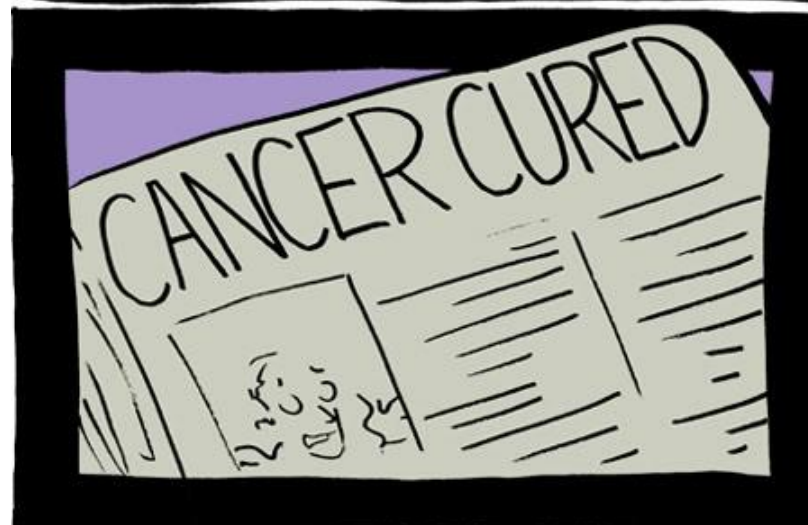
- **Should the scientist collaborate with the press?**
  - “Yes, because he works with public money and owes an explanation of his work to the society that finances it”  
*(No, but yes)*
- **Should the communication be taken into account in the scientist’s CV?**  
*(Yes, but no)*

# Science and journalism: the scientist as a collaborator

- ◆ **Advantages of collaboration** (as a source of one's own or someone else's work)
  - **Improves financing possibilities** (general and particular)
    - Role of RRI (Responsible Research and Innovation), with its advantages and disadvantages: "creates" or reveals a need
    - (Indirectly it's also beneficial for scientific journalism: concept of "critical mass")
  - Facilitates **collaborations**
  - It improves even the **writing** of the scientific article itself (even if the data are powerful, a good "narration" contributes to the publication)
  - **Reading scientific news** brings new ideas that you might not read in *papers* (the need of a third way?)

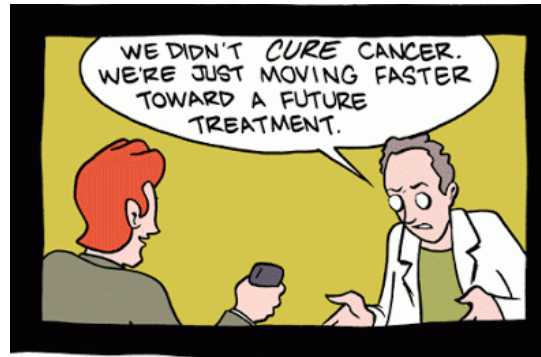
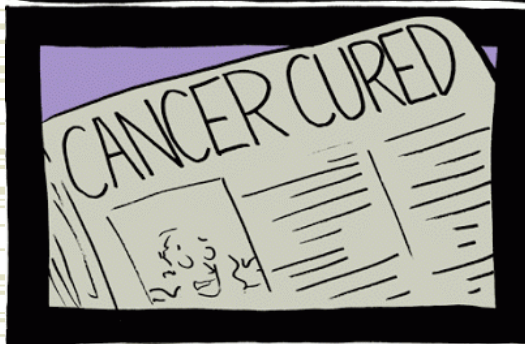
# Ok, but...

HOW SCIENCE REPORTING WORKS:



# And...

HOW SCIENCE REPORTING WORKS:



# Journalists vs. scientists

theguardian

politics sport football opinion culture business lifestyle fashion environment tech travel

≡ all sections

## Nine ways scientists demonstrate they don't understand journalism

If reporters wrote stories the way some scientists seem to want, few people would read science coverage



# Journalists vs. scientists

## ◆ The standard structure of news stories doesn't work for science

There's been some criticism of the "inverted pyramid" model of writing news but there's a reason we stick to it doggedly. It works.

## ◆ The internet doesn't have word limits. Why do you?

"On the web, real estate is endless and cheap" so why on earth do the press keep producing 300-700 word news stories and paring down scientists' quotes to a sentence or just a few choice words? Answers: **We don't want to bore the readers and we don't have enough resources:** If you double the length of every news story you publish, you effectively halve the number of stories you can cover – or worse, you halve the amount of time spent getting the story right in the first place...

# Journalists vs. scientists

- ◆ **Your headline is hyperbolic**

**The purpose of a headline is not to tell the story.** That's the purpose of the story.

- ◆ **Change my colourful quote at once!**

No. Quotes serve many functions in a news story but one important reason they're there is to inject some humanity into the piece. **Most scientists are human** and, thankfully, don't speak in the arid tone that characterises an academic paper.

- ◆ **The story didn't contain this or that 'essential' caveat**

**Was the caveat really essential to someone's understanding of the story?** Are you sure? In my experience, it's rare that it is. Research papers contain all the caveats that are essential for a complete understanding of the science. They are also seldom read. Even by scientists.

# Journalists vs. scientists

- ◆ **How could you quote that person who disagrees with me? He's wrong!**

If the criticisms seem valid and are not easily rebutted, then journalists **have a duty to represent them.**

- ◆ **The story contained an error or errors**

It is worth remembering that while **a paper represents months or years of work to the scientist** concerned, the reporter or editor responsible is likely to have dealt with a dozen or more similar gems in the same week.

# Scientists vs. journalists

## Nine ways journalists demonstrate they don't understand science

© January 17, 2012 by Andrew David Thaler

Ah the Guardian, that venerable bastion of Truth and Light\*. Today they posted a handy reference guide for scientists trying to work with journalist, attempting to explain why science news is covered in certain ways and trying to ease the process by pointing out **“Nine ways scientists demonstrate they don't understand journalism”**. The knife, of course,

# Scientists vs. journalists

- ◆ **The standard structure of news stories doesn't work for science**

I really don't understand this one. There are other styles, and many science bloggers experiment (because that's what we do) with other narrative structures.

- ◆ **The internet doesn't have word limits. Why do you?**

We write abstracts. They're frequently less than 300 words. They hit the salient points. No problem. Sometimes we're amazed by how little information you fit into 300 words.

# Scientists vs. journalists

- ◆ **Your headline is hyperbolic**

Your headline is trivial, tedious, or wrong.

- ◆ **Change my colourful quote at once!**

You changed my colorful quote before printing! Yes, you did. And you changed it in a such a way as to mean the exact opposite of what I said. Don't do that.

- ◆ **The story didn't contain this or that 'essential' caveat**

The story is wrong.

# Scientists vs. journalists

- ◆ **How could you quote that person who disagrees with me? He's wrong!**

How could you quote that fringe nutjob with no credibility as if his work was equivalent to the overwhelming consensus?

- ◆ **The story contained an error or errors**

The story is still wrong.

# Let's talk and work

- ◆ Of course, the real problem in all these “how to talk to scientist/how to talk to journalist” discussions is that **both parties are talking over each other**. There are terrible science journalists out there and there are good ones. **There are asshole scientists that don't think journalists can find the right end of a pencil and there are scientists that value press coverage and want to work with journalists to create a compelling and accurate story. Lumping either group into “how to talk to X” is just lazy stereotyping.**

But thinking about it can be helpful if we want to work together and do a good job.

And I'm sure we want.



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# Thank you

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