



Canadian  
Association for  
Neuroscience

Satellite meeting on  
careers

25<sup>th</sup> May, 2014

Mark Patterson  
Executive Director, eLife

# SCENES FROM THE POSTDOCALYPSE




<http://www.motherjones.com/environment/2014/03/inquiring-minds-ethan-perlstein-postdocalypse>

"We're fond of saying that we should prepare people for alternative careers, without realizing that we're the alternative career."

Greg Petsko, Brandeis University  
Chaired a National Academy of Sciences  
committee on the postdoctoral experience

# Point of view: A fair deal for PhD students and postdocs



Henry R Bourne 

University of California at San Francisco, United States

**DOI:** <http://dx.doi.org/10.7554/eLife.01139>

**Published** October 1, 2013

## Rescuing US biomedical research from its systemic flaws


**Bruce Alberts<sup>a</sup>, Marc W. Kirschner<sup>b</sup>, Shirley Tilghman<sup>c,1</sup>, and Harold Varmus<sup>d</sup>**

<sup>a</sup>Department of Biophysics and Biochemistry, University of California, San Francisco, CA 94158; <sup>b</sup>Department of Systems Biology, Harvard Medical School, Boston, MA 02115; <sup>c</sup>Department of Molecular Biology, Princeton University, Princeton, NJ 08540; and <sup>d</sup>National Cancer Institute, Bethesda, MD 20892

<http://www.pnas.org/content/early/2014/04/09/1404402111.full.pdf+html>

# Nicole Husain – Educational Game Design

28  
JAN 2014

by MySciCareer Editor Job: Education, Media, Science Communication | Most recent science training: Post doc | 

1

“It was the first CV I ever sent out that included my scholarships and publications as well as my video gaming experience.”

Nicole Husain

myscicareer.com

**Name:** Nicole Husain

**Job:** Educational game designer

**Source:** The Node [original post from February 2011]

**Excerpt:**

For as long as I can remember, I've always loved science, particularly the way you could ask any question you wanted and then figure out how to determine the answer. When I was 10 that meant 'do walnut shells float' and when I was 25 that meant 'how does an epithelial lumen form between photoreceptor cells in a Drosophila retina.' I did my undergrad at the University of Toronto at Mississauga, hoping to get into the Forensic Science program with biology as my major. Along the way I had some amazing hands-on research opportunities that really opened

## Sort by job type

### Education

High school

University

### Government

### Industry

Biotech

Chemical Industry

Food sciences

### Law

### Medical

Clinical practice

Clinical research

### Policy

### Publishing

Editorial

Marketing/Outreach

Production

Technology

### Research

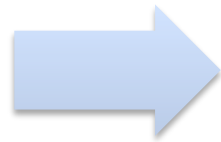
Academia – Other

Bioinformatics

# One career path

## Academia

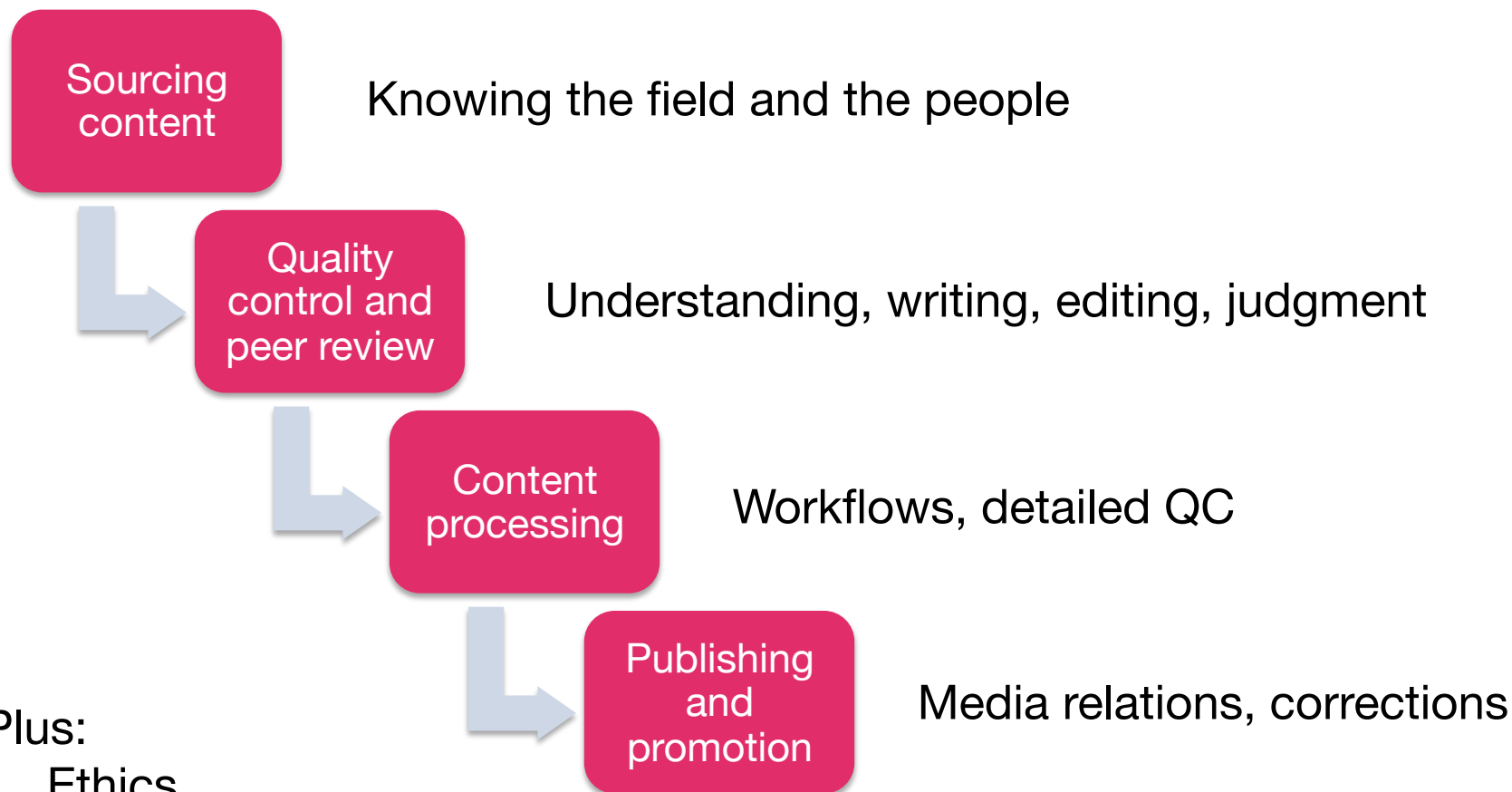
- PhD
- Post-docs
- Lectureship



## Publishing

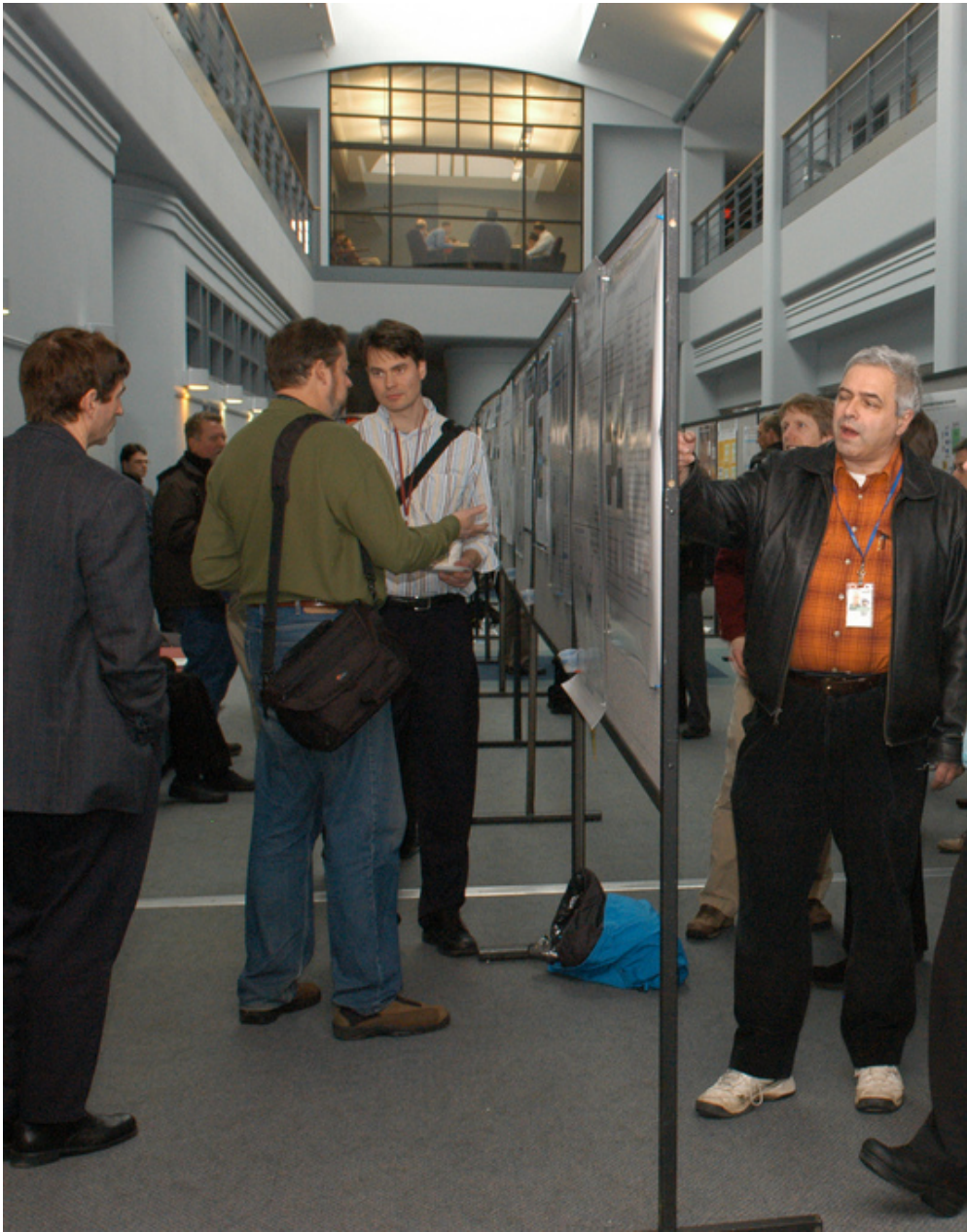
- Trends in Genetics
- Nature Reviews
- PLOS
- eLife

# Publishing in a nutshell



Plus:

- Ethics
- Publishing meetings
- Marketing







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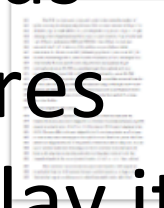
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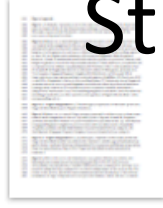
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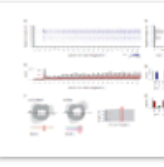
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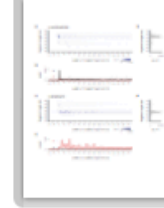
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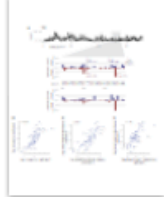
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Words  
Figures  
Display items  
Structure

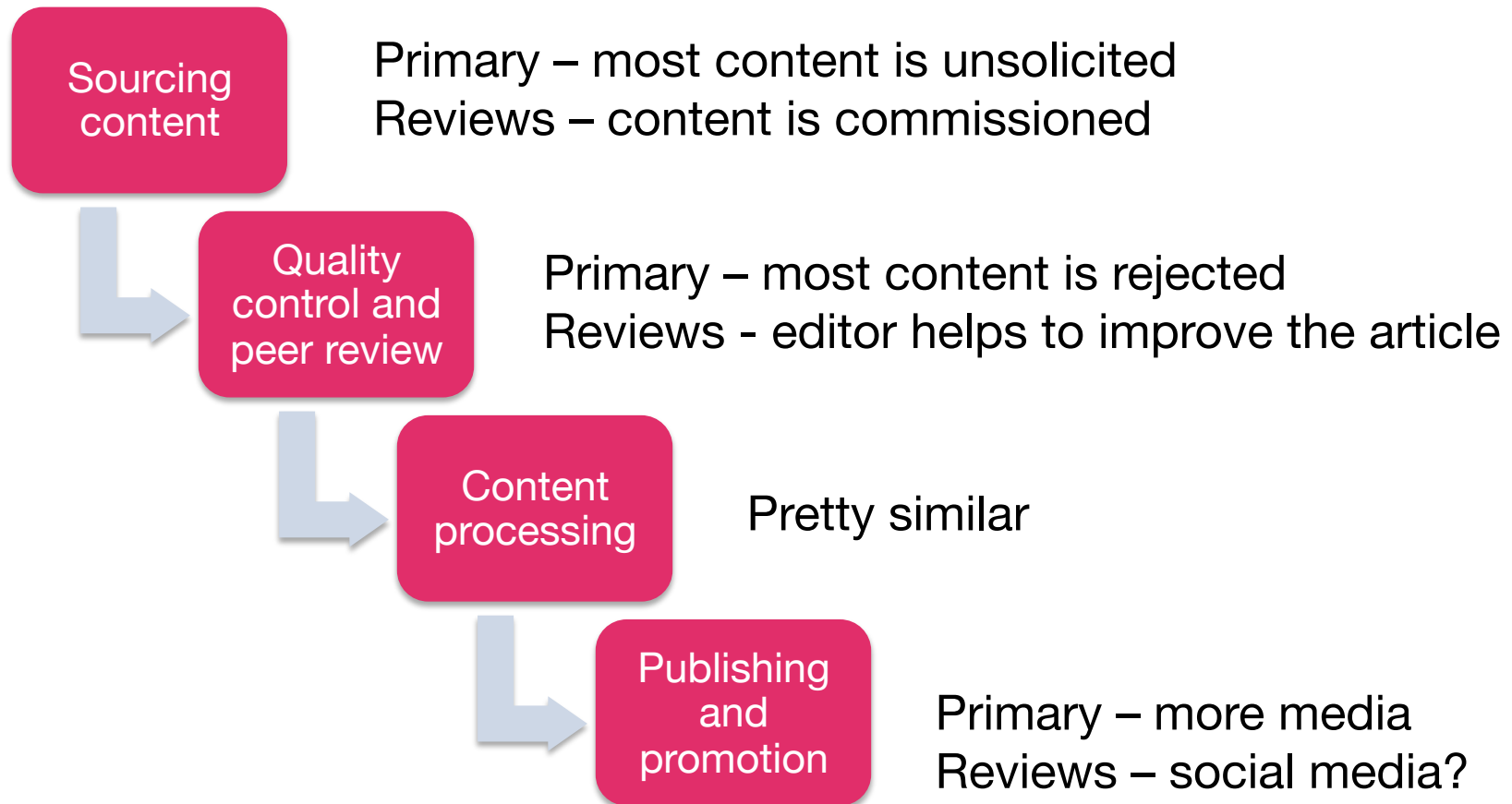
Primary  
research is a  
very different  
ball game



<https://flic.kr/p/7ubn8u>



# Reviews vs primary research



# Qualities, attributes

- Great communicator – written, oral, social media
- Thick-skinned, but empathic and diplomatic
- Enthusiastic about science and its communication
- Detail-oriented
- Organized, multi-tasker
- Love deadlines
- Good in teams

# What does publishing offer?

- Maintaining a broad view of science
- Supporting the progress of science
- Writing, editing, speaking



Department  
for Business  
Innovation & Skills

**wellcome**trust

Other roles and organizations that offer opportunities similar to publishing

**FlyBase**

**UniProt**  
*the universal protein resource*

Université   
de Montréal

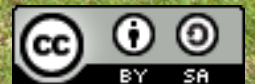


## A few tips

- Take advantage of opportunities
- Try things out
- Talk to people
- Find support groups
- Consider your options broadly
- In the meantime, do great science
- Interviewing
  - why you want the job
  - not why you're leaving the lab
  - make yourself stand out

The research  
communication  
landscape is  
changing

<https://flic.kr/p/gPHvd>





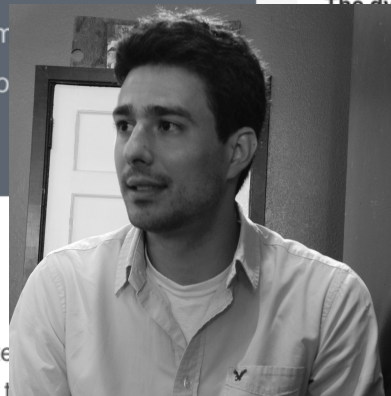


# A longitudinal study of *Caenorhabditis elegans* larvae reveals a novel locomotion switch, regulated by Gas signaling

Stanislav Nagy Charles Wright Nora Tramm  
Nicholas Labello Stanislav Burov David Biro

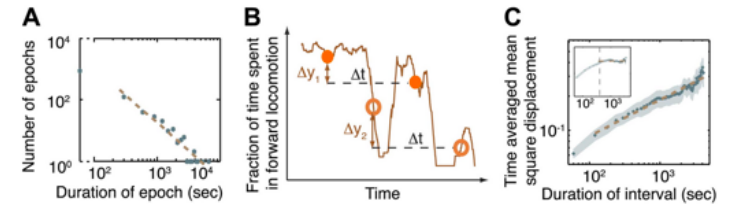
## Abstract

Despite their simplicity, longitudinal studies of invertebrates are rare. We thus sought to characterize behavioral transitions in *Caenorhabditis elegans*, from the mid fourth larval stage to the mid young adult stage. We found that, outside of lethargus, animals exhibited abrupt switching between two distinct behavioral states: active wakefulness and quiet wakefulness. The durations of epochs of active wakefulness exhibited non-Poisson statistics. Increased  $G_{as}$  signaling stabilized the active wakefulness state before, during and after lethargus. In contrast, decreased  $G_{as}$  signaling, decreased neuropeptide release, or decreased CREB activity destabilized active wakefulness outside of, but not during, lethargus. Taken together, our findings support a model in which protein kinase A



Ivan Grubisic

Figure 3.



The dynamics of the active wakefulness state during the three epochs prior to L4 lethargus in wild-type animals.

Figure 3 shows a log-log plot of the durations of epochs of active wakefulness (A), a sample trace of the fraction of forward locomotion with displacements  $\Delta y_1$  and  $\Delta y_2$  over time intervals  $\Delta t$  (B), and the time-averaged mean square displacement (TMSD) plotted on a log-log scale as a function of the interval,  $\Delta t$  (C). The TMSD was calculated for the subset of  $N = 20$  animals available 3 hr prior to the onset of L4leth (N = 20). The TMSD shows power-law growth with the exponent  $(1-\alpha) = 0.32 \pm 0.03$ , consistent with a value of  $\alpha \approx 0.7$ . Inset: for the purpose of illustration, the TMSD for a two-link chain with a comparable mean duration of epochs is shown to reach its saturation value at  $\Delta t \approx 400$  s (vertical dashed line).

DOI: <http://dx.doi.org/10.7554/eLife.00782.005>

Figure 4.

Thank you



Mark Patterson  
[m.patterson@elifesciences.org](mailto:m.patterson@elifesciences.org)