

Altmetrics & social media

Kathy Christian

STM Innovations seminar

DISCOVERY OF "ARSENIC-BUG" EXPANDS DEFINITION OF LIFE



4.1k



211



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Dec. 2, 2010: NASA-supported researchers have discovered the first known microorganism on Earth able to thrive and reproduce using the toxic chemical arsenic. The microorganism, which lives in California's Mono Lake, substitutes arsenic for phosphorus in the backbone of its DNA and other cellular components.

"The definition of life has just expanded," said Ed Weiler, NASA's associate administrator for the Science Mission Directorate at the agency's Headquarters in Washington. "As we pursue our efforts to seek signs of life in the solar system, we have to think more broadly, more diversely and consider life as we do not know it."

This finding of an alternative biochemistry makeup will alter biology textbooks and expand the scope of the search for life



RRResearch

Not your typical science blog, but an 'open science' research blog. Watch me fumbling my way towards understanding how and why bacteria take up DNA, and getting distracted by other cool questions.

Here's a detailed review of the new paper from NASA claiming to have isolated a bacterium that substitutes arsenic for phosphorus on its macromolecules and metabolites. (Wolfe-Simon *et al.* 2010, [A Bacterium That Can Grow by Using Arsenic Instead of Phosphorus.](#)) NASA's shameful analysis of the alleged bacteria in the Mars meteorite made me very suspicious of their microbiology, an attitude that's only strengthened by my reading of this paper. Basically, it doesn't present ANY convincing evidence that arsenic has been incorporated into DNA (or any other biological molecule).

Blogs and other social media have a growing impact on society and research.

What if they were considered research outputs too?

Altmetrics are
not just article-level metrics.

—

Not just citations!



Alternative metrics

Alternative products



Not just books and articles!

What do authors,
publishers and funders
want to assess?

Rigorous

Significant

Original

Quality...

Replicable

Technical advance

Social

Economic

On practice

... & Impact

Cultural

Reaches target audience

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9,370 people like R bloggers.

Quantifying uncertainty around R-squared for generalized linear mixed models

August 22, 2013
By Maxwell B. Joseph

[This article was first published on [Ecology in silico](#), and kindly contributed to R-bloggers.]

People love R^2S . As such, when Nakagawa and Schielzeth published an article in the journal *Methods in Ecology and Evolution* earlier this year, ecologists (amid increasing use of generalized linear mixed models (GLMMs)) rejoiced. Now there's an R function that automates R^2S calculations for GLMMs fit with the lme4 package.

R^2S is usually reported as a point estimate of the variance explained by a

TOP 3 POSTS FROM THE PAST 2 DAYS

- Linear regression from a contingency table
- Visualizing optimization process
- Rforecastio - Simple R Package To Access forecast.io Weather Data

Search & Hit Enter

TOP 9 ARTICLES OF THE WEEK

- Using Google maps API and R
- Fun With Just-In-Time Compiling: Julia, Python, R and pgR
- ggplot + powerpoint = wall + head ... solution?
- Monthly R jobs on r-bloggers
- Poll: R top language for data science three

Methods in Ecology and Evolution
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Methods in Ecology and Evolution

Research Article
A general and simple method for obtaining R^2 from generalized linear mixed-effects models

Shinichi Nakagawa^{1,2*} and Holger Schielzeth³

Article first published online: 3 DEC 2012
DOI: 10.1111/2041-210X.2012.02611.X
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ADVANCED MATERIALS

3D Printing of Free Standing Liquid Metal Microstructures

Colin Ladd¹, Ju-Hee So¹, John Muir² and Michael D. Dickey^{1*}

Article first published online: 4 JUL 2013
DOI: 10.1002/adma.201301400
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brant faircloth @brantfaircloth · Apr 8

What makes me happiest about our bird paper (plosone.org/article/metric...) is that largest % of readers are general public altmetric.com/details.php?ci...

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What needs to happen for these outputs to be considered “first class”?

How is the scholarly community doing it with datasets?

Blogs

3.4 Science Blogs in Research and Popularization of Science: Why, how and for whom?

by Antoine Blanchard¹

Science blogs as competing channels for the dissemination of science news

Vinciane Colson 

The roles, reasons and restrictions of science blogs

John S. Wilkins 

Blogs: Applications in Science Education

Brownstein, Erica; Klein, Robert

Journal of College Science Teaching, v35 n6 p18-22 May-Jun 2006

Monday, December 1, 2014

Here's my review of published #CRISPR off-target mutation data from mouse embryo injections.

Here is a literature review of CRISPR off-target (OT) mutation analysis in mouse oocytes.

This review only concerns published experiments using "native" Cas9 that cuts both DNA strands, and not nickase-Cas9 experiments. Although nickase-Cas9 is much less prone to OT mutation, editing is still generally less efficient than with native Cas9. Therefore it's important to consider the potential problem of off-target mutation rates with native Cas9 outweigh its utility. The below is pertinent to mouse zygotes. Other systems such as cell lines may have different characteristics.

Here's a few pertinent questions to address this review. First, how about

Compensatory evolution: a possible mechanism of population divergence

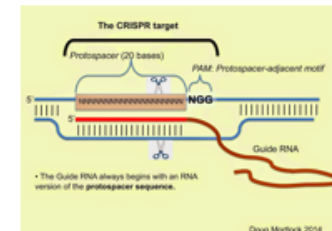
Posted on 1 December, 2014 by Melissa DeBlasse



Dr. Horrible. Photo courtesy of io9.com

After spending my graduate career using genetic data to reconstruct historical demographic events, one of the things that excite me the most about my postdoc work is the opportunity to use experimental methods to make evolution happen (insert mad scientist laugh here). Manipulative experiments on organisms with short generation times are a great way to study how populations and their genomes adapt in response to mutation, selection, and/or environmental change (for a review

The CRISPR target



Small Things Considered



« Five Questions About the Foraminifera | Main | The Fountain of Youth »

Why CRISPR Doesn't Work in *E. coli*

by Elio

We received this query:

» I enjoyed the article on your blog 'Six Questions About CRISPRs' by Merry Youle. I am an ex-lambdaologist, having quit phage lambda in the early 70s and moved to GM-plants. There is one thing about CRISPR that I do not understand: Why did lambdaologists not find CRISPR? They found phage resistance and lysogeny and restriction systems but not CRISPR. I suppose that they were happy that phage resistance was MalB and never looked any further, though. 27 lambda-resistant mutations were mapped by Thirion & Hofnung and they all mapped in malB/malT. I hope that you or Merry Youle can help me?

Best regards
John Davison»



John Davison, French Institute for Agricultural Research, Versailles

We turned to Udi Qimron, a microbial geneticist and expert on CRISPRs for help. He responded:

The Nine Circles of Scientific Hell

Neuroskeptic¹

In the spirit of Dante Alighieri's *Inferno*, this paper takes a humorous look at the fate that awaits scientists who sin against best practice.

The *Divine Comedy* of Dante Alighieri is a classic of world literature and was the first major work in the Italian language.

Fourth Circle: p Value Fishing

Those who tried every statistical test in the book until they got a p value less than .05 find themselves here, in an enormous lake of murky water. Sinners sit on boats and must fish for

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The Conversation

24 November 2014, 2.06pm GMT

Monster telescope needs mind-bending mathematics to uncover secrets of the universe

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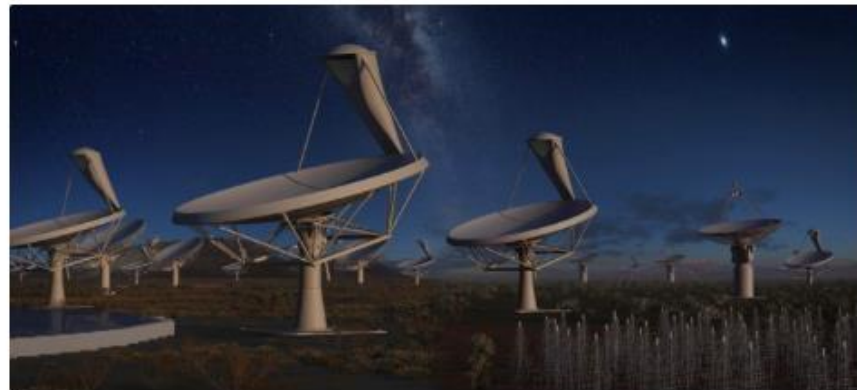


Jason McEwen

Assistant Professor (University Lecturer) at University College London

DISCLOSURE STATEMENT

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Artist's impression of the Square Kilometre Array at night. SKA Organisation

Telescopes have come a long way since the days when they

REPUBLIC THIS

Not just citations!



Alternative metrics

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Not just books and articles!

Thanks for listening!



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