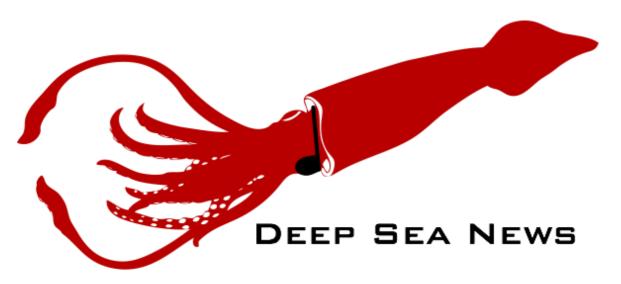


23 Lessons
From Outreach
Creating An
Empire

Craig R. McClain Louisiana Universities Marine Consortium





#deepsn



storyofsize.com



scienceofthesouth.com

You are free to:



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Blog, live-blog, or post video of;

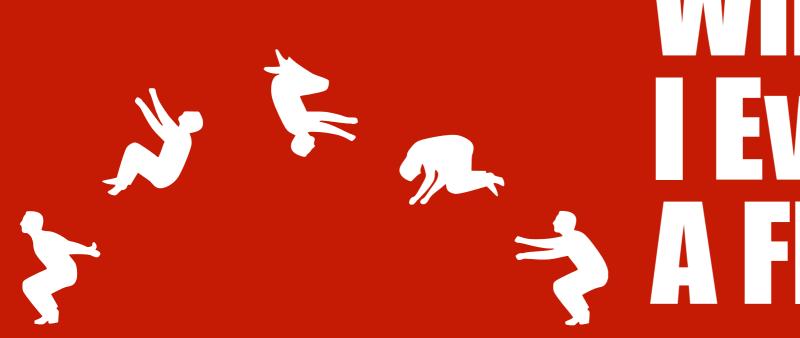
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You attribute the work to its author and respect the rights and licenses associated with its components.



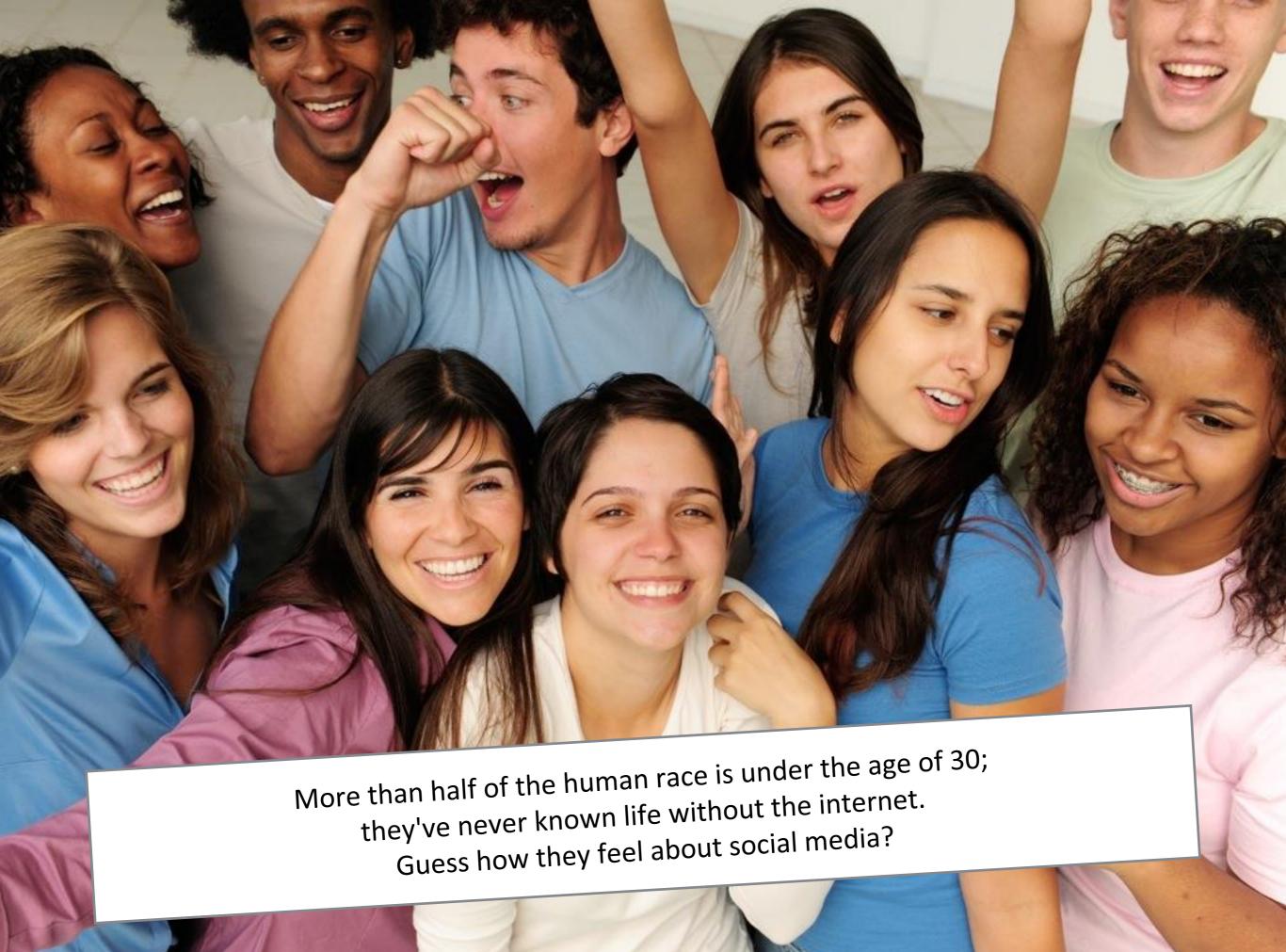
Craig R. McClain @DrCraigMc #scicomm





Why Should Leven Give A Flying Flip?

1. Stop Thinking Social Media Isn't Important



3 out of 4 Americans use social technology

-Forrester, The Growth of Social Technology Adoption, 2008







If Facebook were a country it would be the most populated in the world



Every minute:

Facebook users share nearly 2.5 million pieces of content.

Twitter users tweet nearly 300,000 times.

Instagram users post nearly 220,000 new photos.

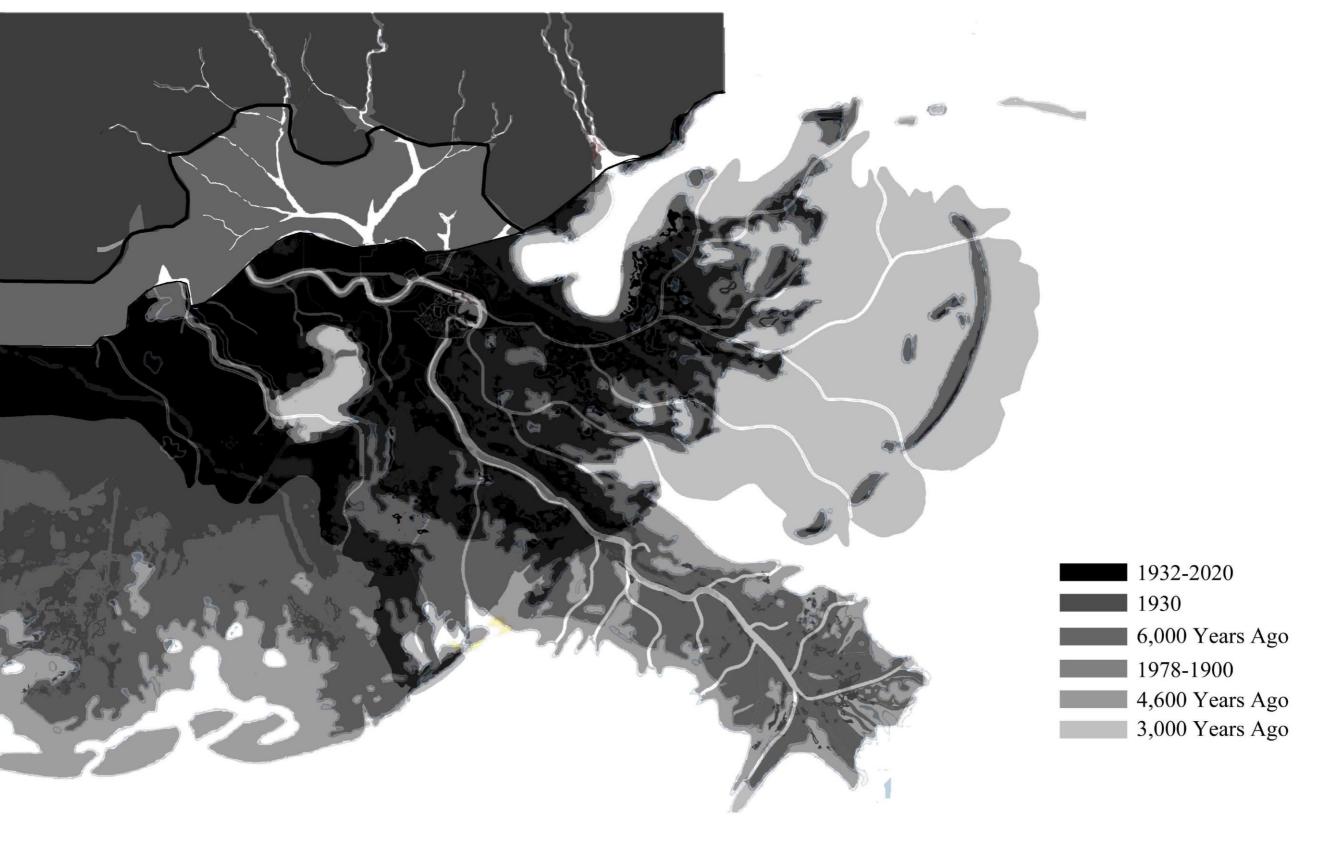
YouTube users upload 72 hours of new video content





1/3 of women aged 18-34 check Facebook when they first wake up

...even before going to the bathroom



2. Social media is changing the landscape of science

Los Angeles Times



Sports Now

Comments 6

SPORTS NEWS FROM LOS ANGELES AND BEYOND

Jose Canseco explains gravity via Twitter



baseball legend and noted non-paleontologist Jose Canseco recently

tweeted that Earth may have had a low gravity in the old days, and that could explain the big animals our planet used to boast.





I bow down to Brian Switek @laelaps only scientist to tackle Ancient Gravity geekosystem.com/how-dinosaurs-... I support his new theory. hug for u bri



1:06 PM - 28 Feb 13



tn Fvnlve

by Brian Switek

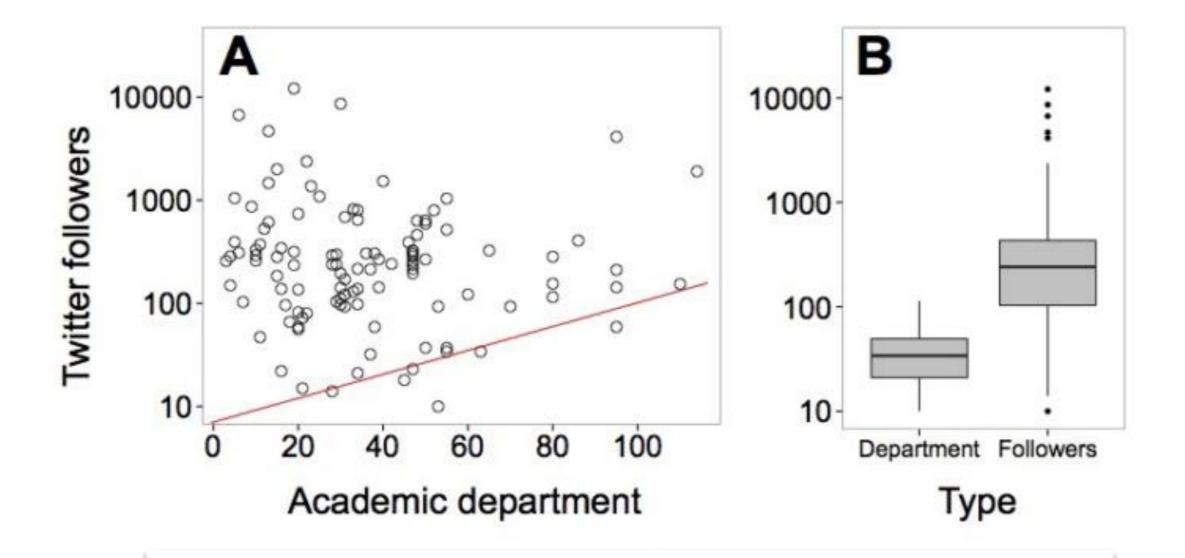
Why was Supersaurus so big? This impressive, 100-foot-plus sauropod was one of the largest creatures to ever walk the Earth - far larger than any terrestrial animal alive today. What could account for such superlative size? Baseball player Jose Canseco offered his own hypothesis on Twitter a few days ago.

After promising to share some of his thoughts on gravity, Canseco

ABOUT LAELAPS



and author of the critically acclaimed books Written in Stone (2010) and My Beloved Brontosaurus (2013). He has published in Slate, Nature, the Wall Street Journal, Smithsonian, Scientific American, and more. Laelaps is his writing laboratory,





IDEAS IN ECOLOGY AND EVOLUTION 6: 32-43, 2013

doi:10.4033/iee.2013.6.6.f

© 2013 The Author. © Ideas in Ecology and Evolution 2013 Received 19 April 2013; Accepted 26 June 2013

Future of Publishing

The role of Twitter in the life cycle of a scientific publication

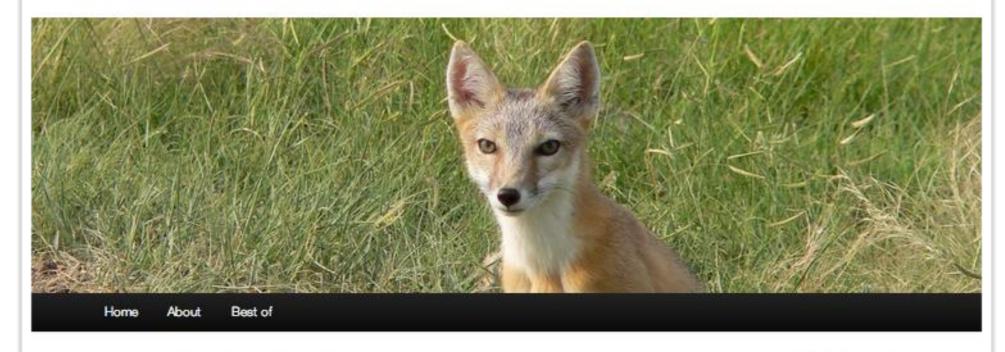
Emily S. Darling¹, David Shiffman, Isabelle M. Côté, and Joshua A. Drew

Blogs for Scientists by Scientists

Dynamic Ecology

Multa novit vulpes





Posted on January 13, 2014 by Jeremy Fox



What's the greatest ecology experiment in history?

A while back, Rich Lenski did a nice post summarizing and commenting on a classic evolutionary experiment: Luria and Delbrück 1943. This is the famous "fluctuation test" experiment showing that mutations in *E. coli* occur at random with respect to their fitness effects, rather than being caused by selection pressures. The experiment was based on simple but subtle reasoning, was very elegant, and the results were both clear and profound. It provided the basis for a massive body of research, including the cracking of the genetic code. It was also ahead of its time, in that evolutionary biologists at the time were mostly uninterested in microbes, so that the paper's immediate influence was much greater in

Twitter at Conferences



NRC Research Press @cdnsciencepub

Jan 22

Salamander jumping ability has a surprising twist: unique 'flat catapult' mechanism fw.to/iV8uwNN via @CBCTechSci @NAU #sicb2014

□ View summary

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Zen Faulkes @DoctorZen

Jan 17

Can't read sciencemag.org/content/343/61... on #SICB2014 symposium I did with @fuschmu: #paywall! I logged that with openaccessbutton.org @OA_Button

Expand

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Jonathan B. Losos @JLosos

Jan 17

The role of testosterone in producing sexual dimorphism #sicb2014 anoleannals.org/2014/01/17/sic...

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Zen Faulkes @DoctorZen

Jan 17

#SICB2014 parasite symposium @FuSchmu and I organized is in Science! bit.ly/1hy0k0V #hooray @ZombieAntGuy @CharissaB @AmSocParasit

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Zen Faulkes @DoctorZen

Jan 17

Singling out @fossilosophy for #FollowFriday, for I met them at #SICB2014 and they are most excellent!

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Robin Verble-Pearson @TTU_FireLab

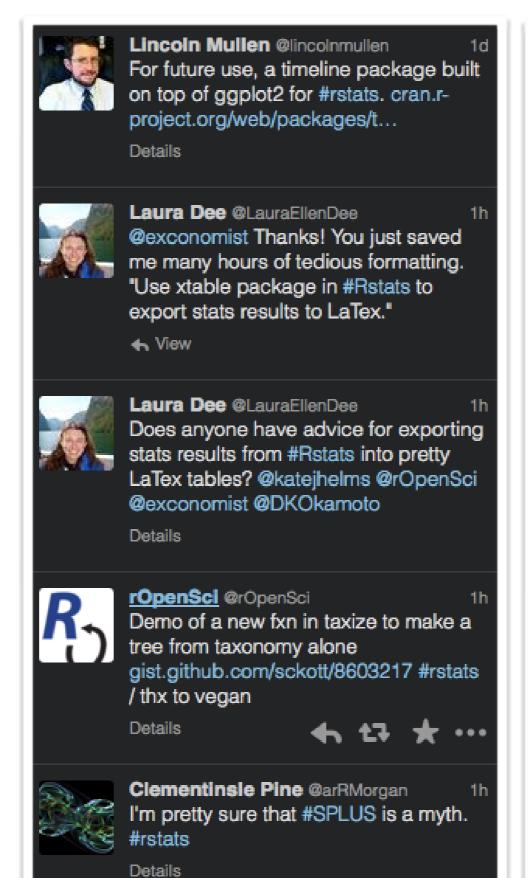
Jan 15

New blog post: fireecologylab.blogspot.com/2014/01/societ... #sicb2014

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Twitter as Source of Knowledge and Assistance





19m facet_wrap plot to be n different colors, grouped by some factor. Ideas?

Kylla Benes retweeted



Luca Borger @lucaborger Really, look at this stats/maths methods supplement (by Ben Bolker etal) - sets an entirely different level bit.ly/1kXxdsO #rstats

Details

James Owers retweeted



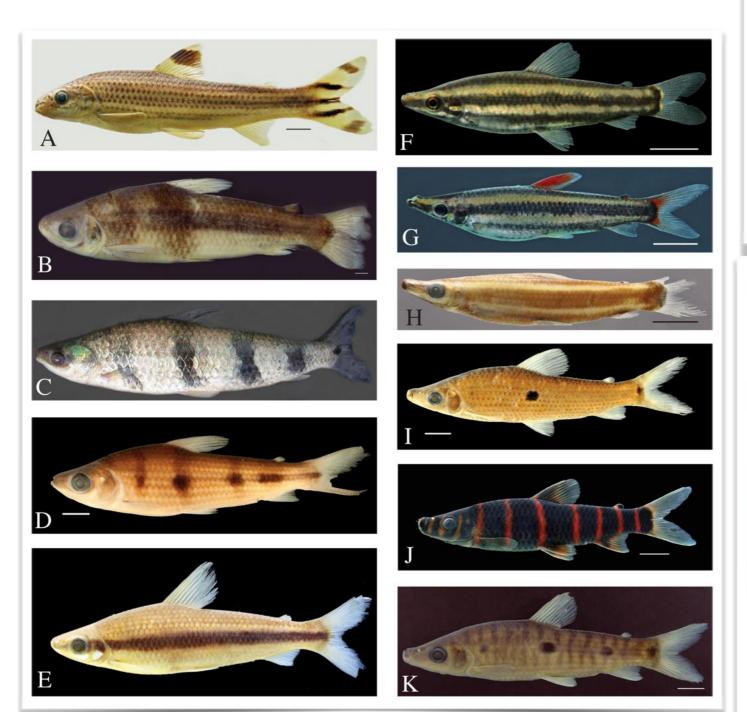
David Smith @revodavid Want to create and share R analyses with a drag-and-drop workflow? @alteryx/@RevolutionR online demo Weds: bit.ly/1eYstf3 #rstats

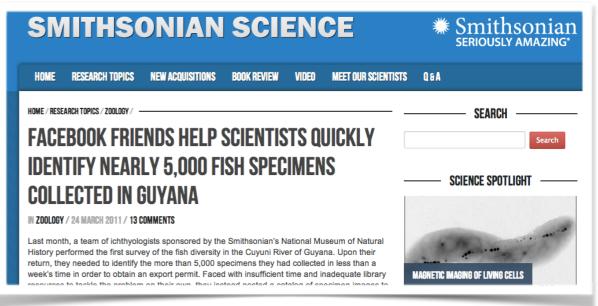
Details



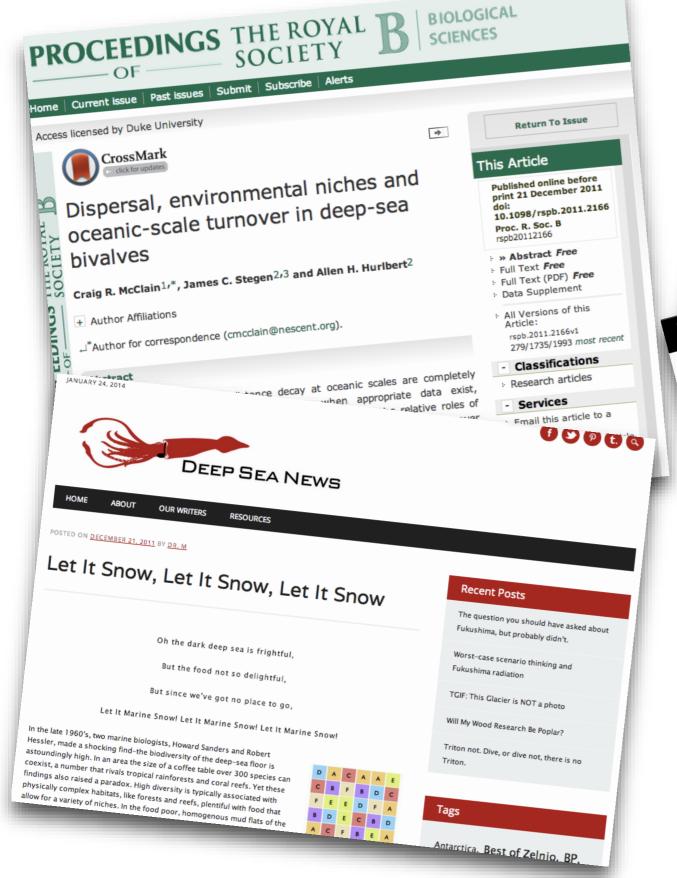


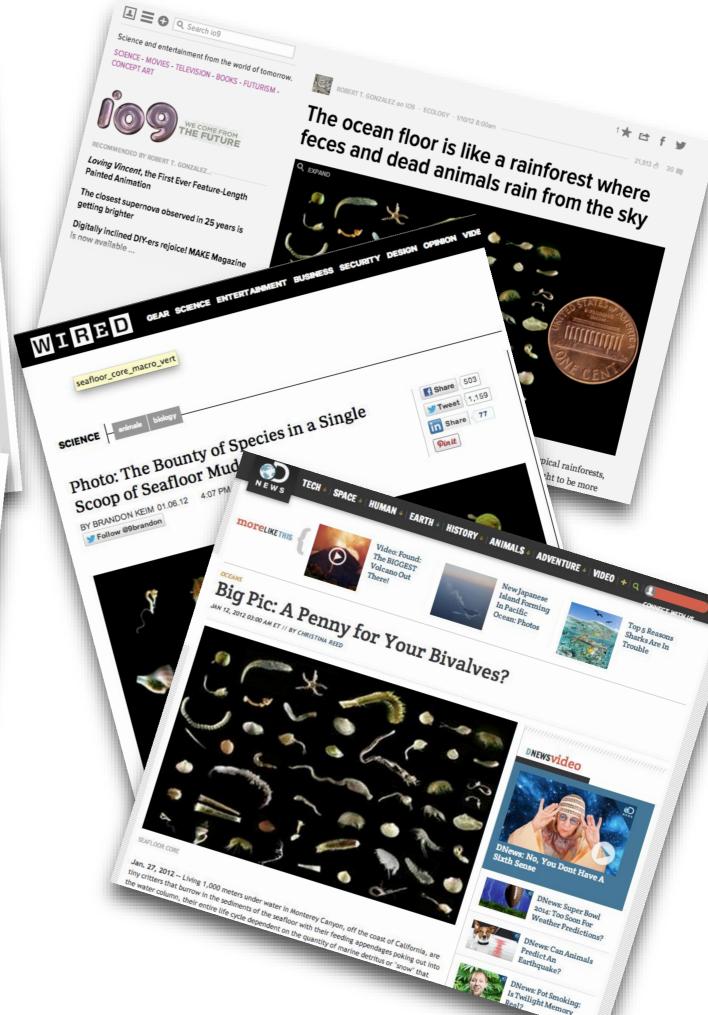
Crowdsourcing science

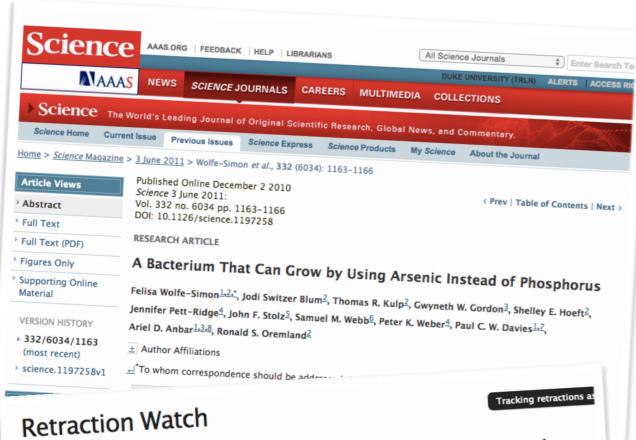












Despite refutation, Science arsenic life paper deserves retraction, scientist argues

with 39 comments

Yesterday, Science published two papers which undercut an earlier paper in the journal claiming to show evidence for an arsenic-based strain of bacteria. Guest poster <u>David Sanders</u>, a structural biologist at Purdue University who was involved in a Retraction Watch story in May, argues that the journal could have avoided publishing the rebuttals—a swift retraction of the original was (and still is) the better move.

Allow me to apologize from the start. This narrative is not a typical Retraction Watch post, because it contains a number of personal elements. However, it would be hard to separate my perspective from my experience.

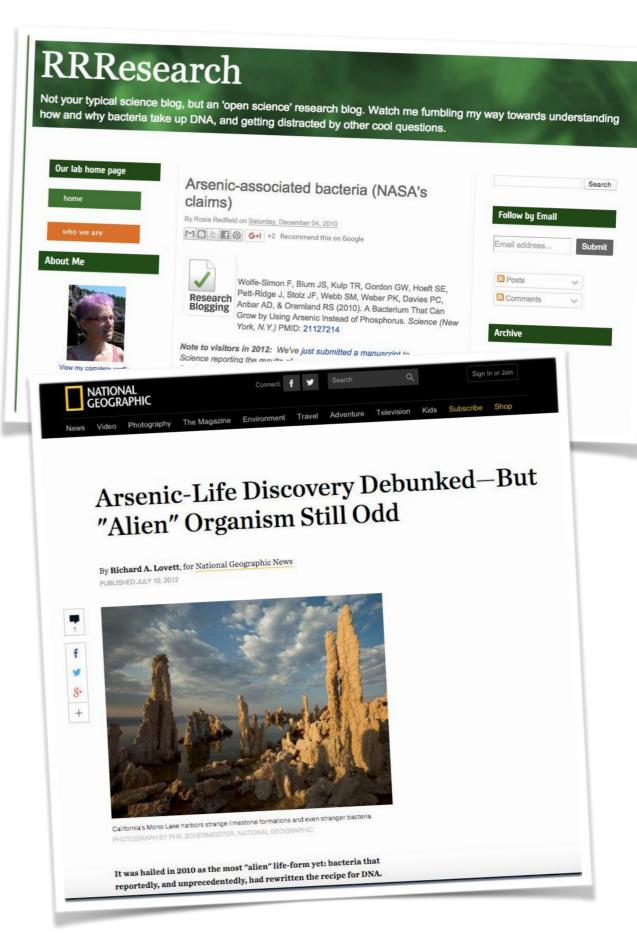
I will begin by asserting that, despite Rosie Redfield's many valuable contributions to refuting the Wolfe-Simon paper that have culminated with the <u>publication of data</u> she and <u>other investigators</u> have obtained, there was no need for Science to publish additional articles. The Wolfe-Simon paper never should have been published. The only responsible action on the part of Science would be to retract the original article.



On December 3, 2010, I was listening to Morning Edition on National Public Radio and heard a story about a bacterium that used arsenic instead of phosphorous phosphorus to live on and that the arsenic had replaced some of the phosphorous phosphorus in the organism's DNA. Having worked on enzymatic phosphoryl transfer for much of my career (in case you are interested, my collaborators and I discovered that the twocomponent regulatory system response regulators were phosphorylated on an aspartate residue), I knew that the instability of arsenate esters made the claimed results impossible. Biology may teach us about novel

Changing Scientific Debate

chemistry, but it doesn't violate the laws of chemistry.



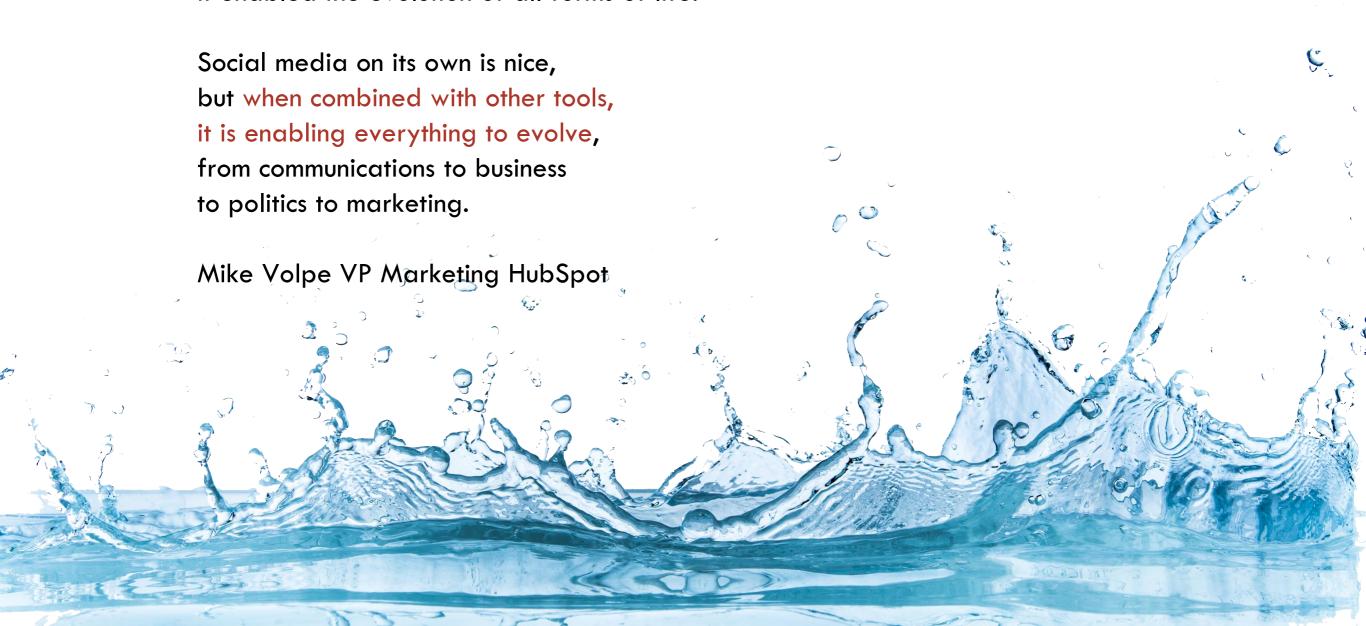
So Mat Do I Do Online?



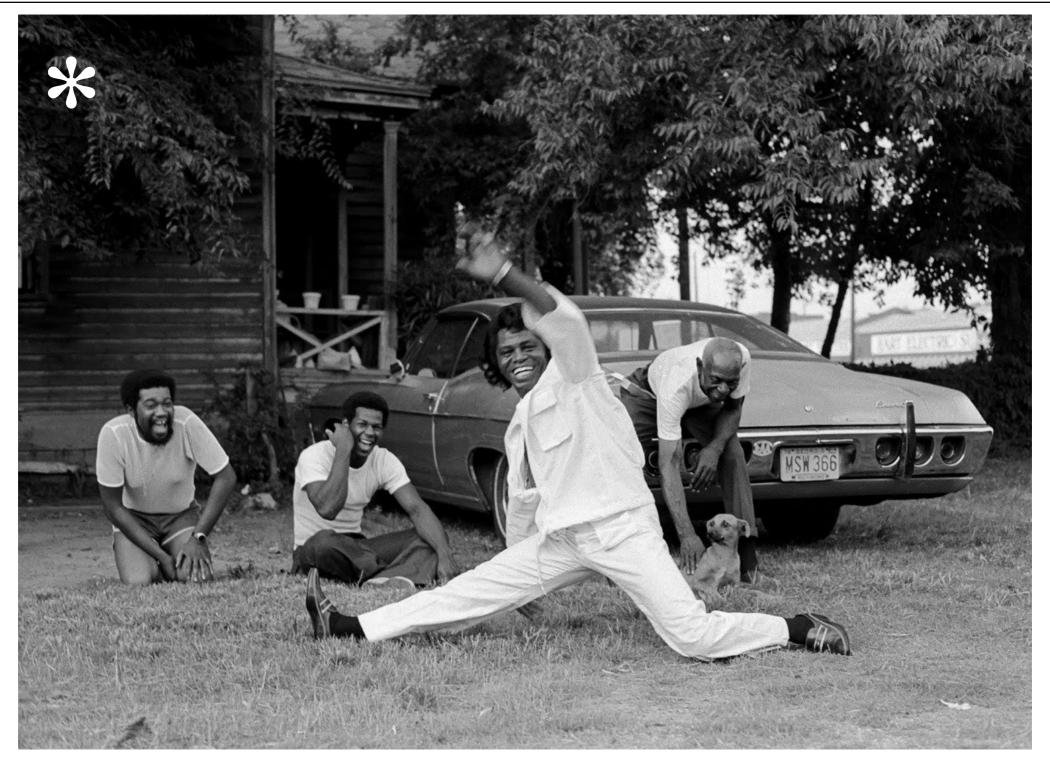
3. Remember Social Media Is Just A Tool

Social media is like water.

On its own, water does some cool things,
but when combined with other compounds
it enabled the evolution of all forms of life.



Inreach versus Outreach



*James Brown has nothing to do with this. I simply have always wanted to put a photo of James Brown dancing in a presentation.

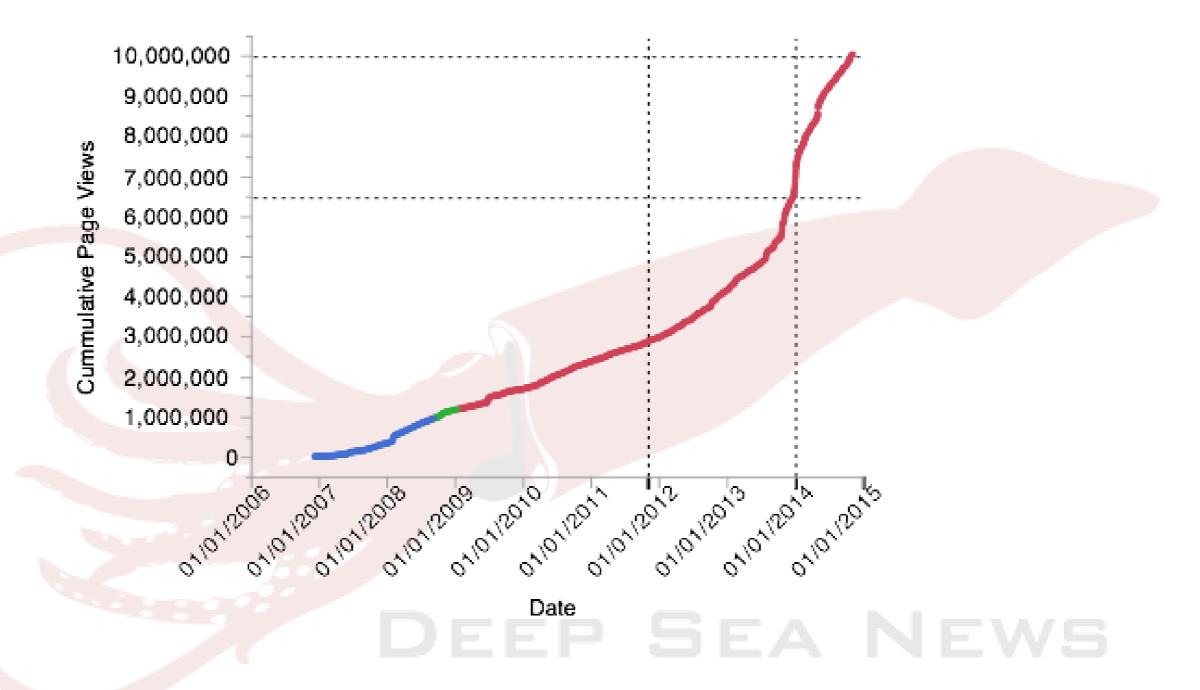
4. Be Strategic. Be Deliberate.





Scientists put considerable thought and time into developing research programs and projects. This is to ensure success and time is not wasted.

Why would you do any less with social media or outreach online?



This blog is salt of the earth, or in this case, salt of the sea. It casts back to the best traditions of popular science, sparking curiosity and bewonderment, explaining the phenomena in comprehensible language. It's all about communication between the expert and an interested reader, a transfer of knowledge and ideas, sharing the passion.

-Blog Critics Magazine

What is your online mission?

Eavesdropping: follow informative people to get information and learn

Dialogue: exchange, discuss, and debate information (Asking specific questions?)

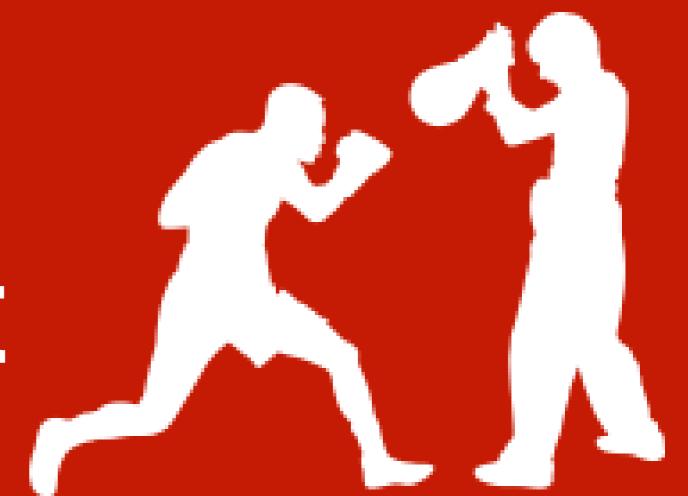
Broadcast: used by news organizations and businesses to inform audience about news or products/services, outreach Data collection: e.g fishermen using Twitter to monitor fish populations.

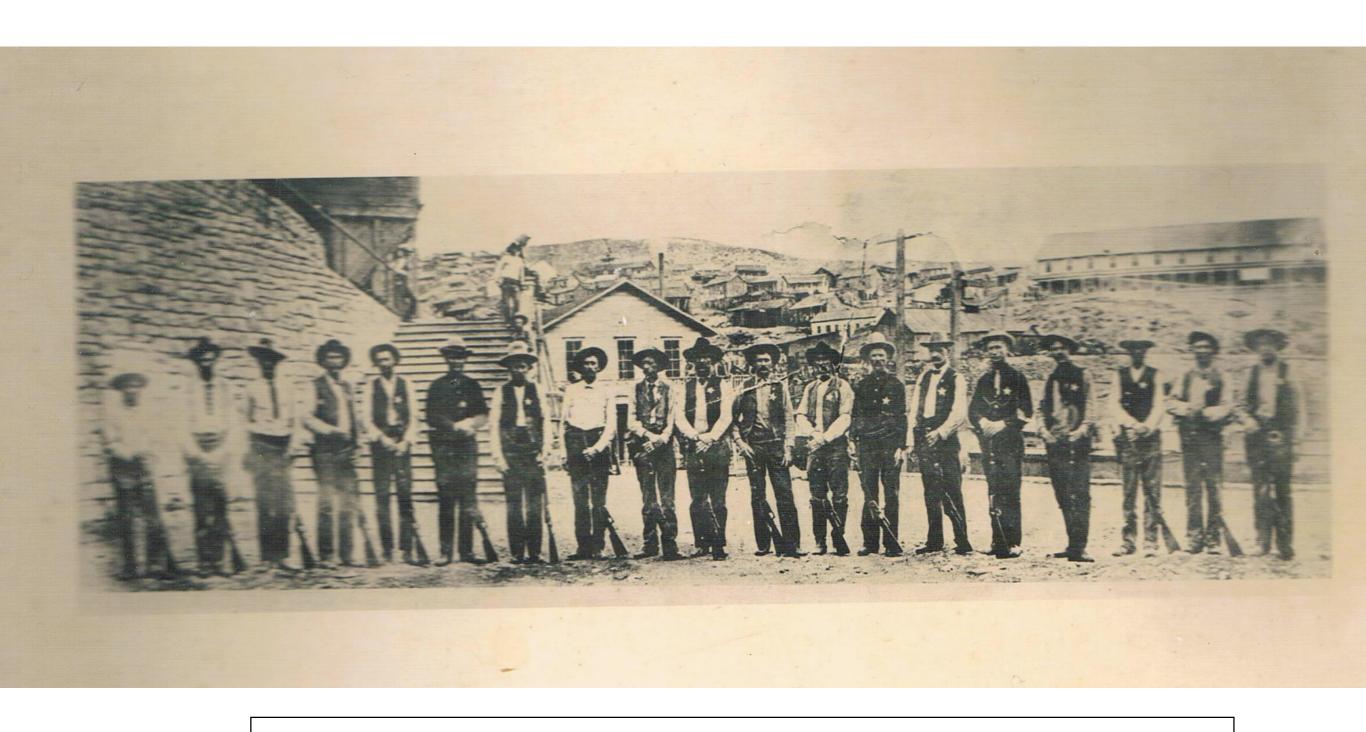
Impromptu journalism: e.g. landing on Hudson river, Mumbai attacks, Iran post-election protests

Mindcasting: following a single story or topic, with links, for a period of time

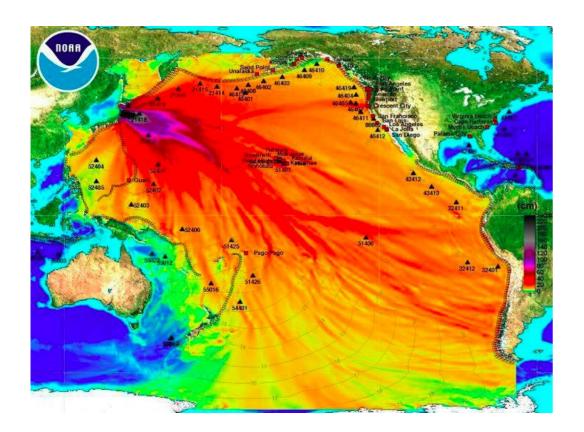


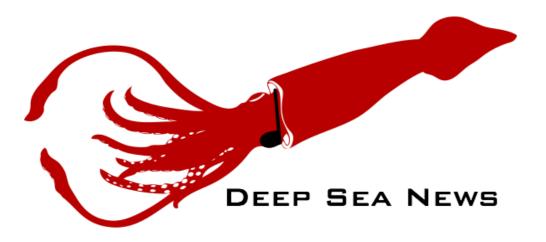
The Online Environment



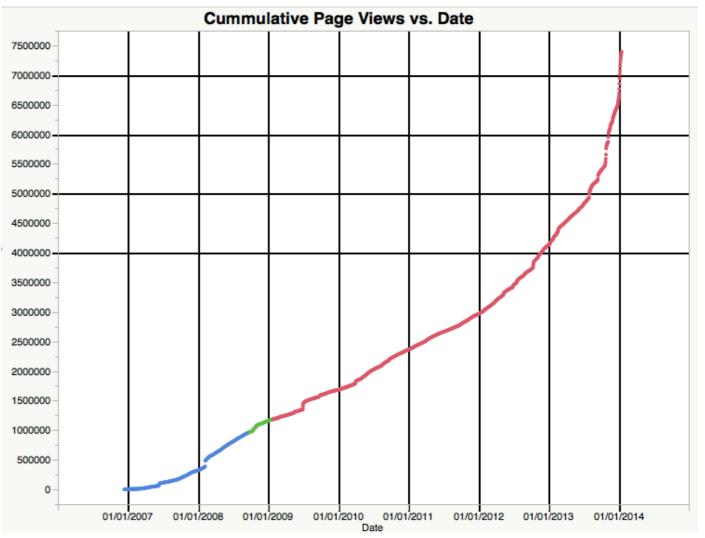


5. The Internet is the Wild Wild West









Is Engagement Always Positive?

"Your article are such crap and very unscientific. The 3 explanations in your blog, on echinoderms wasting away had no real basis. The claim the because it happened on the East Coast, also happening a decade ago, but you left out that there are plenty of leaks on the East too (Love Canal). Then to make a claim that no other life in the pacific has been showing odd symptoms is an opinion, please be more clear in your work, all you are doing is feeding into misinfo and likely are involved with Koch or some other pro industry. Like reading all the Forbes, op eds. Next you will be citing them about how radiation is just like a banana."

"I've been seeing your LYING disinformation news on Fukushima on MY Facebook page. My writers and I tell the truth about Fukushima radiation and we will not allow you to lie and therefore be guilty of crimes against humanity. You'll be exposed on my website as I'll have one of my writers investigate this disinfo source and then do a write up. My website gets over a million views/month and FB pagecurrently hosts over 231,000 subscribers. You can either tell the truth, and we won't tell the truth about your lies, or continue lying and read what I said would be done above."

"The JEWS did Fukushima Sabotage and False Flag with HAARP. The JEWS did 9-11 Sabotage and False Flag with HAARP. JAPAN TSUNAMI QUAKE CAUSED PURPOSELY WITH HAARP. Fukushima Sabotage was done with HAARP. The Stuxnet Computer Virus was made in Dimona Israel. HAARP, Fukushima, Sabotage, Benjamin Fulford, Stuxnet Computer Virus, Dimona Israel, Siemens Computers, False Flag," The Stuxnet computer worm is perhaps the most complicated piece of malicious software ever built; DESIGNED BY JEWS TO SABOTAGE NUCLEAR POWER STATIONS. When are they going to PROSECUTE the JEW OWNERS of HAARP?"

"This article is ridiculous. You are no better than all the fear mongers out there, only instead of actually being concerned about this environmental crisis, you're completely trying to deter everyone from the reality that fukushima is serious and something that needs to be watched closely, as it WILL have dire effects on the entire planet. If you honestly think that fukushima is nothing to be concerned about, you should just @#\$%^\$* kill yourself, you're doing this world absolutely no good."



HOME

ABOUT

OUR WRITERS

RESOURCES

POSTED ON FEBRUARY 20, 2014 BY RR HELM

The most beautiful animal you've never seen

When I first saw a sea sapphire I thought I was hallucinating. The day had been anything but normal, but this part will always stand out. I'd spent the afternoon on a small dingy off the coast of Durban, South Africa. It was muggy, and I'd been working for hours—throwing a small net out, and pulling in tiny hauls of plankton that I'd then collect in jars. As I looked through one jar, the boat rocking up and down, I saw for an instant a bright blue flash. Gone. Then again in a different place. An incredible shade of blue. Maybe I'd been in the sun too long? Maybe I was seeing things? It wasn't until I got back to the lab that I discovered the true beauty and mystery of these radiant flashes.

I'd like you to meet one of the most beautiful animals I've ever seen:



10

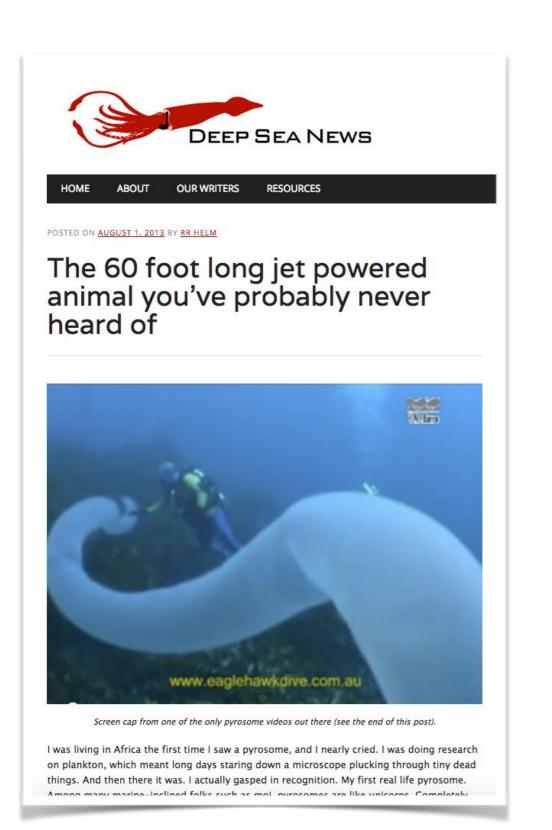
This stunning animal looks like a glitch in reality's programming

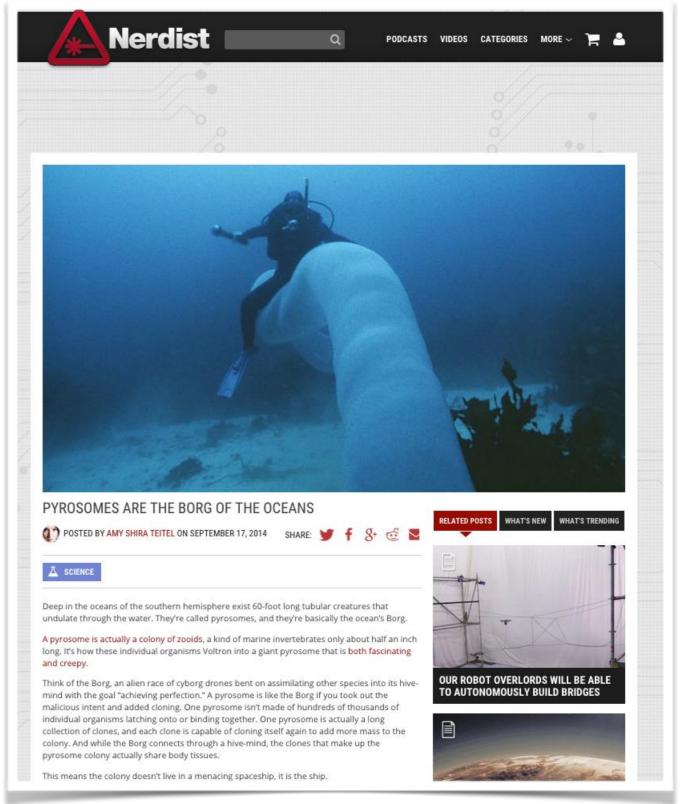
Deep Sea News' Rebecca Helm calls it "the most beautiful animal you've never seen." The tiny marine crustaceans have shimmering, crystalline skin that derives its iridescence from a single layer of microscopic, hexagonal plates that reflect only certain wavelengths of light. Helm — who's been been lucky enough to encounter one in its natural environment — has more details on the animal she calls a "sea sapphire":

In the case of blue sea sapphires, these crystal layers are separated by only about four ten thousandths of a millimeter; about the same distance as a wavelength of blue light. When blue light bounces off these crystal layers, it is perfectly preserved and reflected. But for other colors of light, these small differences in distance interfere, causing the colors to cancel out. So while white light is composed of all colors, only blue light is reflected back. This type of coloration is known as structural coloration, and though resembling a gem in hue, a sea sapphire's color has more in common with an oil sheen than a pigmented jewel. Combine this nifty trick with the sea sapphire's impressively transparent body, and you have an animal as radiant as a star in one moment, and invisible in the next.

Read more about these incredible creatures over at *Deep Sea News*.

Content Theft vs. Increasing Exposure





Content Theft vs. Increasing Exposure

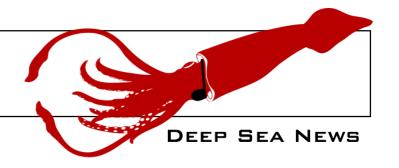
Understanding the Public Online



6. You Have 10 Seconds And 10 Words

Vis	its
69,9	951
% of Total: 100	0.00% (69,951)
isit Duration	Visits
-10 seconds	60,745
1-30 seconds	1,297
1-60 seconds	1,343
1-180 seconds	2,472
81-600 seconds	2,588
01-1800 seconds	1,349
801+ seconds	157

7. Most Readers Never Engage



A majority of readers never comment (57.3% for SFS, 54.2% for DSN).

Those that do comment have only left one or two (25.3% for SFS, 23.4% for DSN).

DSN asked readers why they don't comment and most responses fell into one of three categories: 1) the reader did not feel qualified (28.6%), 2) the reader had nothing to add (25.7%), or 3) the reader did not generally comment on blogs (17.1%).

8. Most people receive information through traditional media and friends/family.

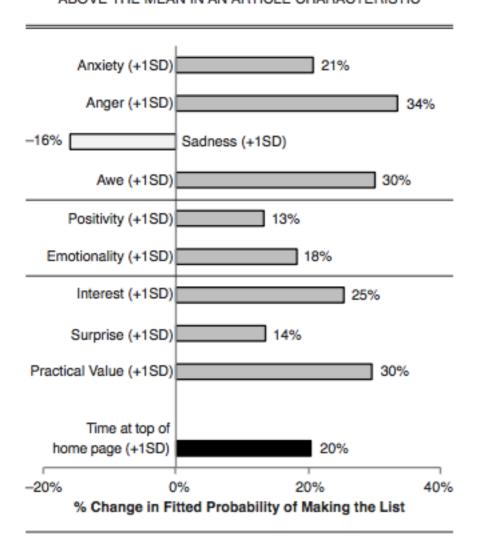
You will not have direct contact with most of the public via social media

Traditional media is still the gateway for information

"The majority of our questionnaire respondents indicated that they sought information using..." mobile phones to contact friends or family (54%); through information portals and websites advertised in traditional media (76%); by accessing alternative news sources and individual blogs (38%); through discussions on various web forums (15%)

9. Whether things go viral is related to physiological arousal.

Figure 2
PERCENTAGE CHANGE IN FITTED PROBABILITY OF MAKING
THE LIST FOR A ONE-STANDARD-DEVIATION INCREASE
ABOVE THE MEAN IN AN ARTICLE CHARACTERISTIC



The results indicate that positive content is more viral than negative content

Virality is partially driven by physiological arousal.

Content that evokes high-arousal positive (awe) or negative (anger or anxiety) emotions is more viral.

10. Be conscious that you may not be

Reaching everyone.

Global Environmental Change 32 (2015) 126-138



Contents lists available at ScienceDirect

Global Environmental Change

journal homepage: www.elsevier.com/locate/gloenvcha

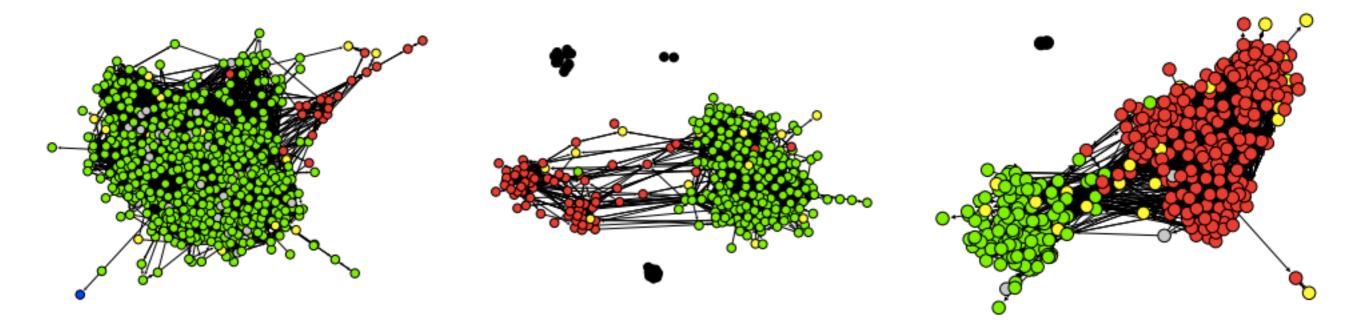


Network analysis reveals open forums and echo chambers in social media discussions of climate change



Hywel T.P. Williams a.*, James R. McMurray b, Tim Kurz c, F. Hugo Lambert d

College of Engineering, Mathematics & Physical Sciences, University of Exeter, Harrison Building, North Park Road, Exeter EX4 4QF, UK



^a College of Life and Environmental Sciences, University of Exeter, Laver Building, North Park Road, Exeter EX4 4QE, UK

^b Department of Empirical Inference, Max Planck Institute for Intelligent Systems, Tuebingen, Germany

School of Psychology, University of Exeter, Washington Singer Laboratories, Exeter EX4 4QG, UK



Echo Chamber of Deep Sea News

The average reader was a well-educated American young adult (25 - 34 years old; 41.5%)

A high percentage of readers having or pursuing a graduate or professional degree (34.6%).

11. Do not be too popular if you want to be seen as credible.



Contents lists available at SciVerse ScienceDirect

Computers in Human Behavior

journal homepage: www.elsevier.com/locate/comphumbeh



A social network as information: The effect of system generated reports of connectedness on credibility on Twitter

David Westerman a,*, Patric R. Spence b, Brandon Van Der Heide c

Table 1

Means (and standard deviations) for credibility dependent variables by number of followers.

Number of followers	Credibility dimension			
	Trustworthiness	Competence	Goodwill	
≈70 Followers ≈7000 Followers ≈70,000 Followers	4.55 (1.01) 4.84 (1.05) 4.53 (0.99)	4.59 (1.06) 4.85 (1.11) 4.62 (1.21)	4.52 (1.01) 4.64 (0.98) 4.39 (1.01)	

^a West Virginia University, Department of Communication Studies, 108 Armstrong Hall, PO Box 6293, Morgantown, WV 26506, United States

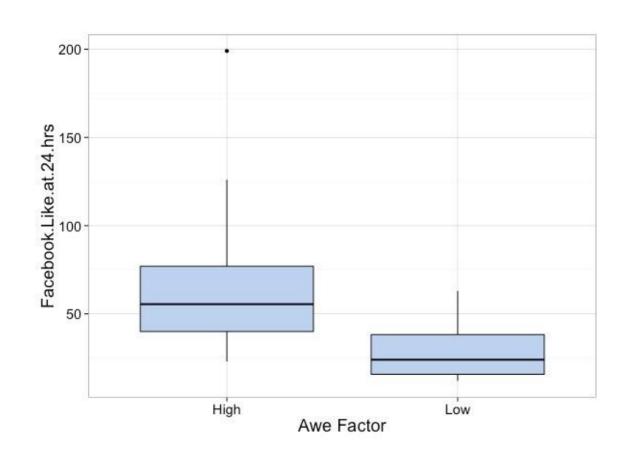
b Western Michigan University, School of Communication, 220 Sprau Tower, Kalamazoo, MI 49008, United States

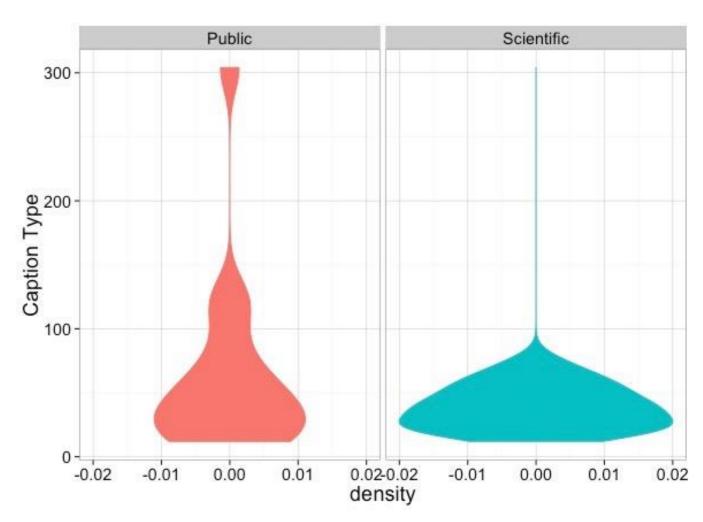
^c The Ohio State University, School of Communication, 3016 Derby Hall, 154 North Oval Mall, Columbus, OH 43210, United States

12. People Want Quality and Awe









Analysis of Variance Table

Response: Facebook.Like.at.24.hrs

```
Df Sum Sq Mean Sq F value Pr(>F)
Caption.Type
                          5486 5486.3 6.0296 0.027747 *
Taxa
                        59481 5407.4 5.9429 0.001301 **
Photo.Type
                      2
                         1367
                                683.3 0.7510 0.489983
Awe.Factor..High.Low. 1
                         4445 4444.8 4.8849 0.044247 *
Date
                         3439
                               3438.5 3.7791 0.072275 .
Caption.Word.Count
                     1
                         2936
                              2936.0 3.2268 0.094048 .
Residuals
                     14 12738
                                909.9
```

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

13. Social Media Is Not A Field of Dreams. If You Build They May Not Actually Come



All information is not consumed on the internet



In a given month, one billion people visit YouTube to watch 6 billion of hours of video. Yet, many videos receive few views and less than 10% account for the majority of views (Cheng et al. 2008).



Posts published at Deep-Sea News for 2013 (N=299), garnered 1,666,119 page views. Of these views, 82.6% were received on the top 20 posts. The lowest ranking 200 posts accounted for just 5% of total 2013 views.

14. Internet capitol doesn't translate to offline capital

In a study with 49 participants, 588 requests to help with a class project of labeling photos online, nearly 80% of the requests were unanswered (Stefanone et al. 2012).

Thaler et al (2012) suggest that social media may be creating a public only superficially involved with the environmental movement, i.e. slacktivism

"Facebook allows people to "like" a topic without requiring any additional commitment. While that person may feel they are lending support to the topic, this can artificially increase the number of people who appear to be involved in an issue."

Tips and Tricks



15. Branding...Branding...Branding...





Ángel Guerraa, Ángel F. Gonzáleza, Santiago Pascuala, and Earl G. Daweb (2011). The giant squid Architeuthis: An emblematic invertebrate that can represent concern for the conservation of marine biodiversity *Biological*

Conservation, 144 (7), 1989-1998: 10.1016/j.biocon.2011.04.021

16. Find Your Niche & Story



Reverently irreverent. We will be true to who we are in real life, leveraging humor to keep the science dialogue informal and accessible.

"This "oh-so-hip" presentation of a very interesting phenomenon is regrettable. I stopped reading halway [sic] through it as I couldn't take any more. Just present the science. Tarting it up for people to read is pointless. Such readers have no value. Too bad, I would have liked to learn the real scinece [sic] presented here."

17. Stop Taking Refuge In Our Irrelevance

The Echinoblog

588,737

Current Population of D.C.: 561,702

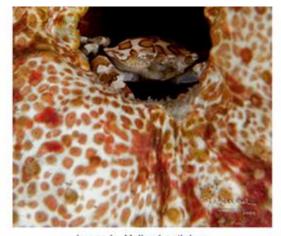


Image by Yellowbeetlebug



Image by Jasdivr

One of the things I find fascinating about sea cucumbers is that they're basically a section of intestine, including the mouth and the anus which has evolved to live on its own. We sometimes think of animals by their most prominent features... jaws in sharks, eyes in insects...



18. Write and Communicate About Want You Want To Write and Communicate About

Producing something popular on the internet is as much about passion as it is about good content.

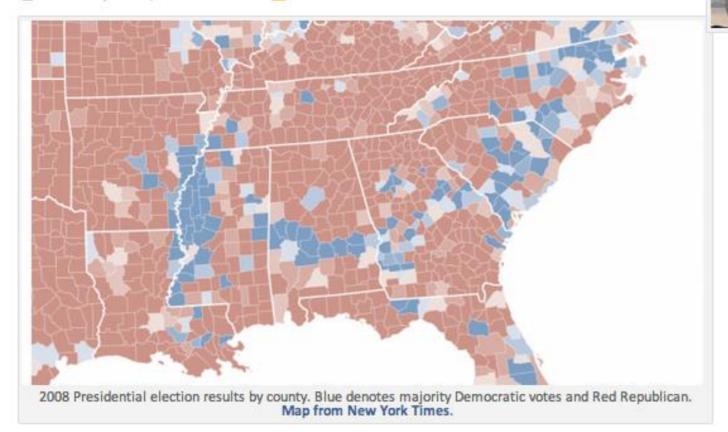
With passion and the right writing style, you can make any type of science cool.

19. Embrace the World Around You



How presidential elections are impacted by a 100 million year old coastline

BY DR. M, ON JUNE 27TH, 2012 76 COMMENTS SOCIAL SCIENCES







UC Santa Barbara Geography / News & Events / Department News October 15, 2012 - How Presidential Elections Are Impacted by a 100

Events Calendar Event Photos News Favorites

News & Events

News Archive

Colloquia Archive

The following article with the above title was written by Dr. Craig McClain, Chief Editor for Deep Sea News, and first posted on June

Million Year Old Coastline

27, 2012:

Hale County in west central Alabama and Bamberg County in southern South Carolina are 450 miles apart. Both counties have a population of 16,000, of which around 60% are African American. The median households and per capita incomes are well below their

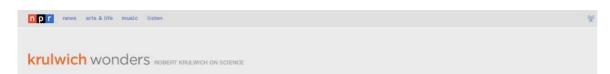
2008 Presidential election results by county. Blue denotes majority Democratic votes and Red Republican. Map from New York Times. From the Deep Sea News respective state's median, in Hale nearly \$10,000 less. Both were named after confederate officers-Stephen Fowler Hale and Francis









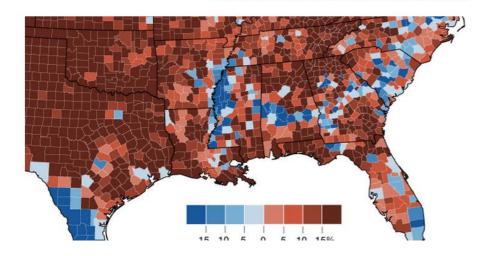


Obama's Secret Weapon In The South: Small, Dead, But Still Kickin'

by ROBERT KRULWICH

October 10, 2012 12:49 PM

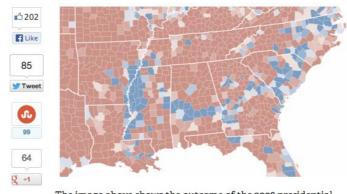
Look at this map, and notice that deep, deep in the Republican South, there's a thin blue band stretching from the Carolinas through Georgia, Alabama and Mississippi. These are





How 100-million year old geology affects modern presidential elections

Maggie Koerth-Baker at 12:08 pm Thu, Jun 28, 2012



The image above shows the outcome of the 2008 presidential



THE LATEST Guatemala: st declared as A

down after pro

- FEATURED



Jello Biafra an Guantanamo & Medicine's "W the Damage D



You're All Just Jetpack: a col Gauld's brillia



BOOK REVIEW Gooseberry Bl College of Mag

20. Network + Good Story = Viral

Invertebrate Biology

Original Article

The anus as a second mouth: anal suspension feeding by an oral depositfeeding sea cucumber

William, B. Jaeckle¹, Richard, R. Strathmann^{2,*}

Article first published online: 29 JAN 2013 DOI: 10.1111/ivb.12009

@ 2012, The American Microscopical Society,



Invertebrate Biology Volume 132, Issue 1, pages 62-68. March 2013

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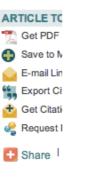
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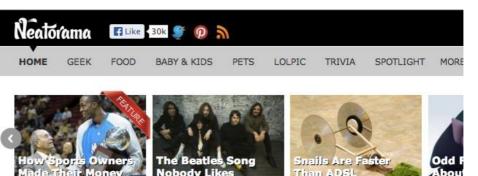


Butt munchers

BY DR. M, ON 🗮 MARCH 6TH, 2013 🦈 8 COMMENTS 😉 ADAPTATIONS, ORGANISMS 🦠 ANUS, CLOACA, ECHINODERM, FEEDING, HOLOTHURIAN, RESPIRATORY TREE, SEA CUCUMBER



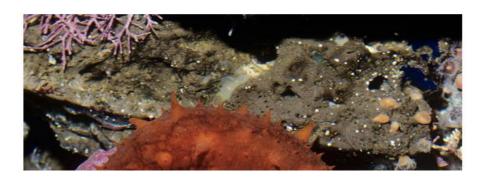




Main Blog > Sea Cucumber Eats Through Its Anus

Sea Cucumber Eats Through Its Anus

Alex Santoso • Sunday, March 17, 2013 at 11:00 AM • 2 *





(98th percentile)

21. BE CREATIVE







Where's Domino? @Wheres_Domino

19 Mar

Did you know we whale #sharks can retract our eyes completely inside our heads? Who needs eyelids?

Expand



Where's Domino? @Wheres_Domino

17 Ma

In celebration of #StPattysDay I have moved from blue water to the soupy GREEN coast of Isla Holbox ow.ly/j5GOP #DeepSN #SPD Expand



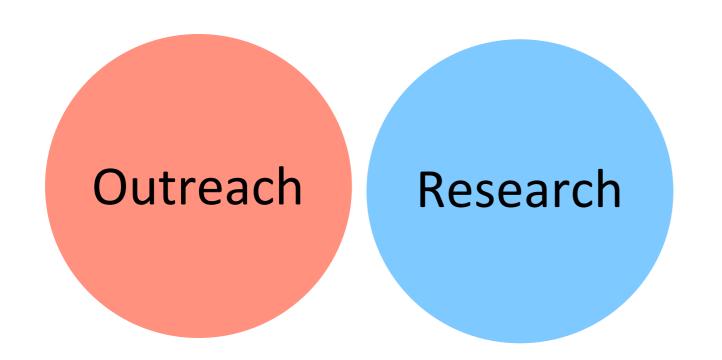
Where's Domino? @Wheres_Domino

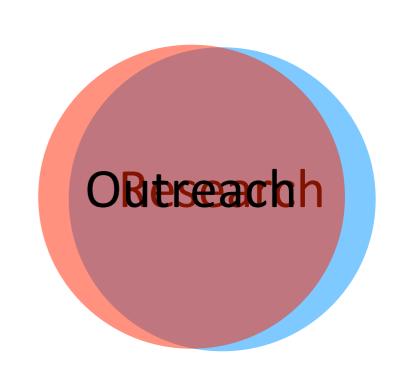
26 Feb

Apparently a bunch of scientists are going to get together to talk about me. Understandable really. :() iwsc3.info

Expand

22. Stop Treating Social Media as Something Extra.





What if we started to create differently?

New graduate training, courses, lab cultures, and departments



storyofsize.com #sizingoceangiants

Life: From the Smallest to the Largest

about me / sizing ocean giants \



SIZING OCEAN GIANTS

Home / Sizing Ocean Giants

1 part undergraduate research,1 part social media outreach,and 4 parts massive ocean animals.



RECENT COMMENTS

- Daniel Lukas on My New Year's Resolution? Join a Shiver of Basking Sharks
- Project to size ocean giants melds marine science with social media on Sizing Ocean Giants
- lance sjogren on Why Great White Sharks
 Getting Smaller Should Scare You
- Great White Sharks Are Being Killed Before
 They Can Become Truly Gigantic | Smart
 News on Why Great White Sharks Getting

 Outlier Objected Spars Year

SIZING SEA TURTLES

December 2, 2013 \cdot by Caroline Schanche \cdot in Largest, Marine, Reptile, Sizing Ocean Glants

For the past three months I have been doing everything in my power to get a hold of leatherback sea turtle size measurements. Some might think that this is a trivial task (why bother?), and others might think that this is easy enough, but if there is one thi have learned, is that I will never ever take data for granted ever again. Because as it to out, when it comes to size data, a lot of people are a little like this:



WHY YOU SHOULD GIVE A DAMN ABOUT A GIANT

November 5, 2013 - by Frank Lee - in Marine, Mollusks, Sizing Ocean Giants

For the past two months, I've been trying to answer one question:

Why am I trying to learn more about the Tridacna?

And then I figured it out.



Tuesday, February 11, 2014 9:22 AM EST





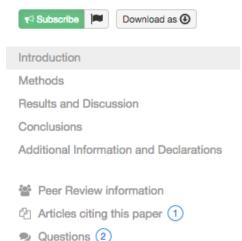
FREE SATURDAY STAR with a DIGITAL ACCESS SUBSCRIPTION







If you aren't following Sizing Ocean Giants, I don't even want to know you



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Sizing ocean giants: patterns of intraspecific size variation in marine megafauna

Meghan A. Balk³,

Catherine Chen²,

Rebecca R. Helm⁸,

Steven E. McMurray¹¹, Caroline Schanche², Shane N. Stone², Andrew D. Thaler¹²

Published January 13, 2015 PubMed 25649000

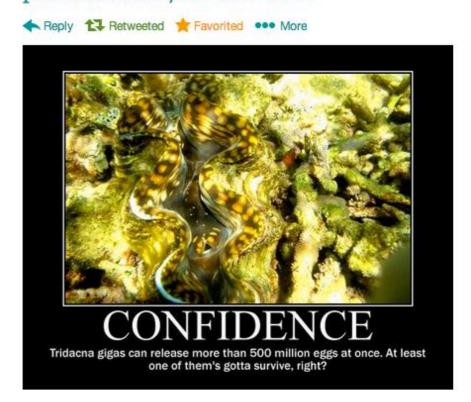
- > Author and article information
- Abstract

What are the greatest sizes that the largest marine megafauna obtain? This is a simple question with a difficult and complex answer. Many of the largest-sized species occur in the world's oceans. For many of these, rarity, remoteness, and quite simply the logistics of measuring these giants has made obtaining accurate size measurements difficult. Inaccurate reports of maximum sizes run rampant through the scientific literature and popular media. Moreover, how intraspecific variation in the body sizes of these animals relates to sex, population structure, the environment, and interactions with humans remains underappreciated. Here, we review and analyze body size for 25 ocean giants ranging across the animal kingdom. For each taxon we document body size for the largest known marine species of several clades. We also analyze intraspecific variation and identify the largest known individuals for each species. Where data allows, we analyze spatial and temporal intraspecific size variation. We also provide allometric scaling equations between different size measurements as resources to other researchers. In some cases, the lack of data prevents us from fully examining these topics and instead we specifically highlight these deficiencies and the barriers that exist for data collection. Overall, we found considerable variability in intraspecific size distributions from strongly left- to strongly right-skewed. We provide several allometric equations that allow for estimation of total lengths and weights from more easily obtained measurements. In several cases, we also quantify considerable geographic variation and decreases in size likely attributed to humans.





Quantity over quality is the name of the game. #sizingoceangiants #DeepSN pic.twitter.com/mxrbruPMWF





David Manly @davidmanly · 21 Oct 2013

My twin brother (@DanielManly) and I are both 5'11" - if we were end to end, how do we stack up against the giants of the deep? #sizeme



k ...



David Manly @davidmanly · 21 Oct 2013

.@DrCraigMc 5'11" (and a bit). How do I stack up? #sizeme #sizingoceangiants #deepsn



13

...

View conversation



Kristopher Hite PhD @thorsonofodin · 21 Oct 2013

@DrCraigMc 6'4" 240lbs #sizeme #sizingoceangiants #deepsn



 \pm 1

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Sarah Keartes favorited

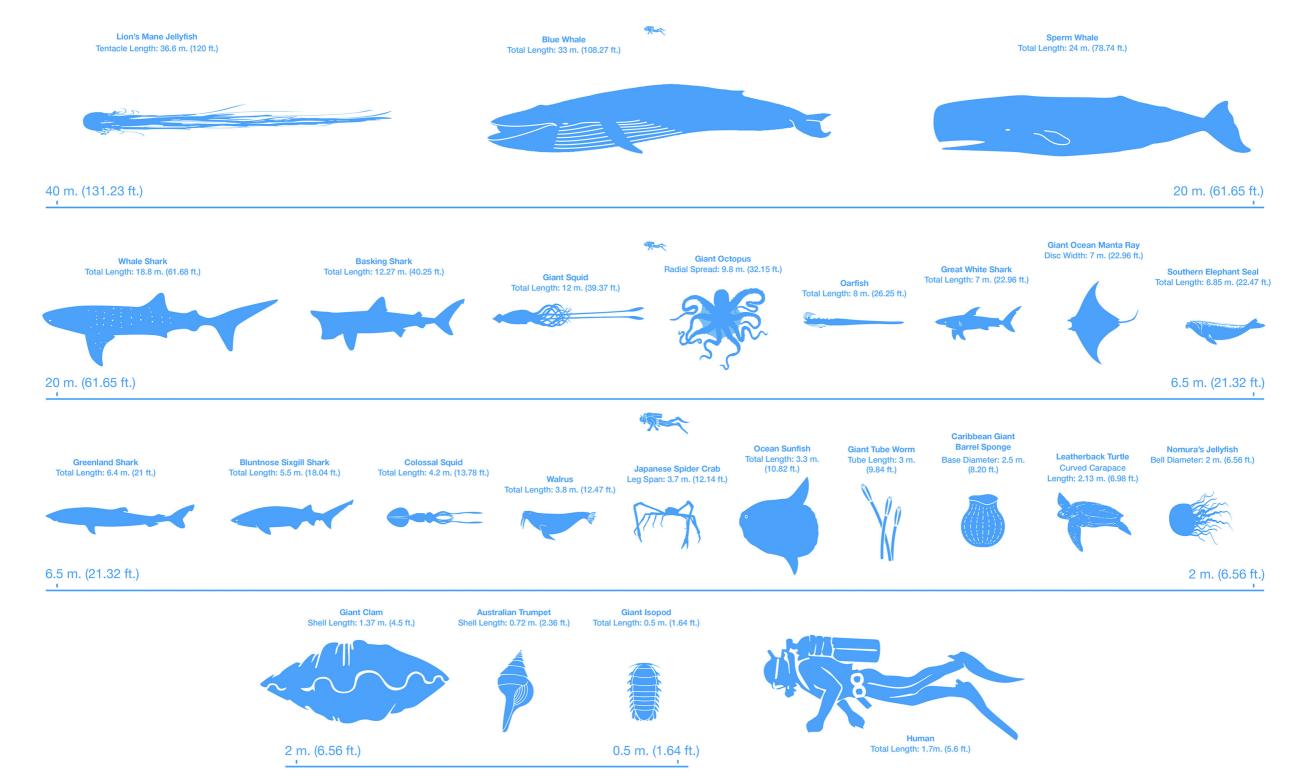


Andrew David Thaler @SFriedScientist · 21 Oct 2013

Hey #sizeme, my ring size is 9 3/4, how do I stack up against ocean giants?



What are the largest sizes of ocean giants?





▼ TECH & SCIENCE

Accurate Size of Largest Sea Creatures Revealed

BY **DOUGLAS MAIN** 1/13/15 AT 5:21 PM







More from Scientific American

Classics »



scientific reports of body sizes for marine creatures



January 14, 2015 | By Tanya Lewis and LiveScience

When it comes to determining the size of giant squid and other large sea animals, humans have a tendency to exaggerate, a new study suggests.

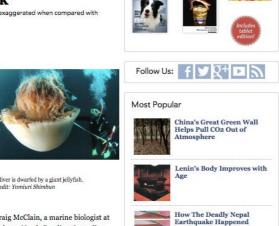
A team of researchers compared scientific and popular media reports of body sizes for 25 species of marine creatures, including whales, sharks, squids, and other giant ocean dwellers, and found that most of the animals were smaller than what was

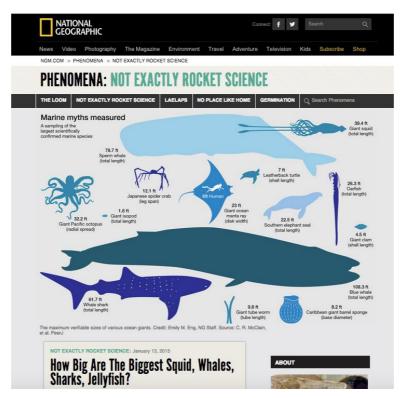


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A diver is dwarfed by a giant jellyfish.

"It's human nature to tell a 'fishing story," said Craig McClain, a marine biologist at the National Evolutionary Synthesis Center in Durham, North Carolina. In reality, "we're horrible at saying what the size of something is, without actually taking a



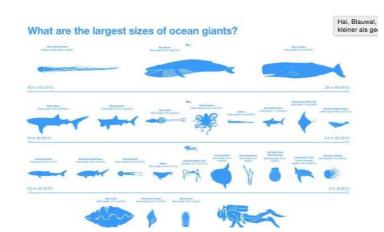




Ria Misra

Filed to: ANIMALS 1/13/15 10:25am

This Is How Big The Ocean's Most Gigantic Creatures Can Really Get

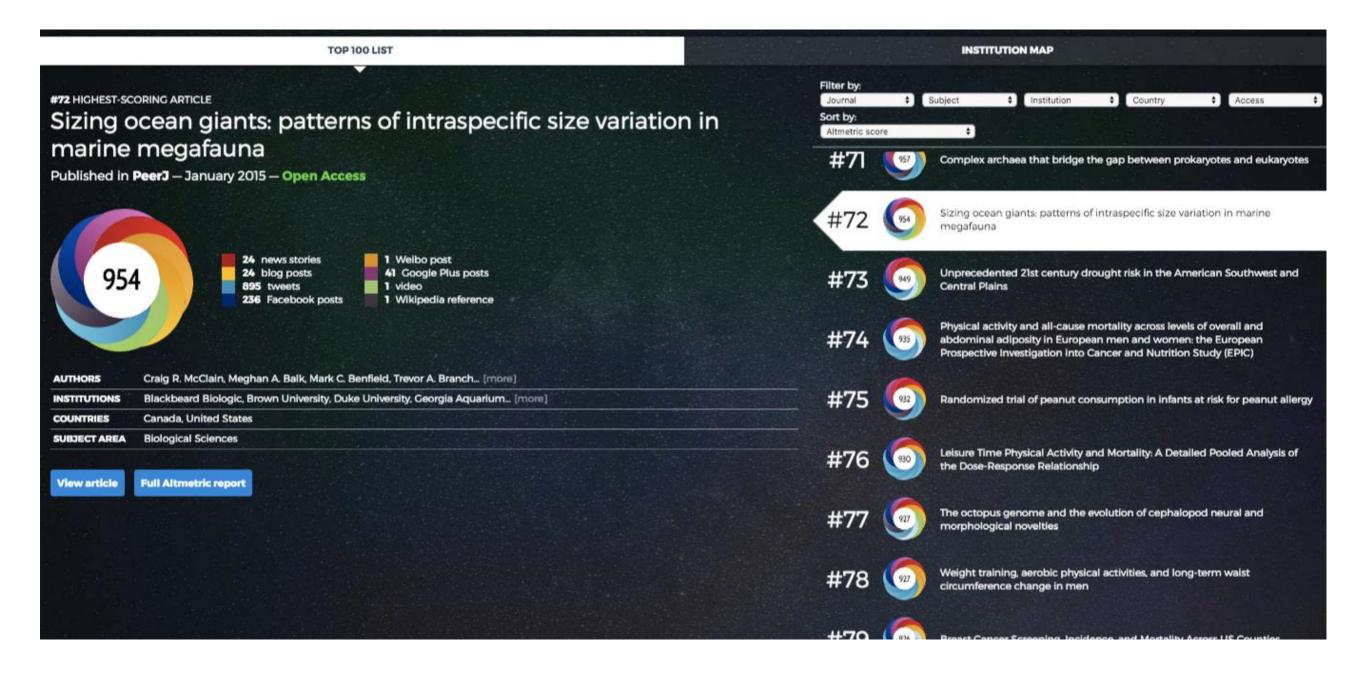






Y la criatura más grande de los océanos es...







starting a blog is easy...



...keeping it updated is not

How much time has Craig invested in blogging'

1.5 hours per day x 356 days per year x 10 years = 5,475 hours

685 work days

137 work weeks

~2.6 years worth of work

At \$15/hr that is \$82,125, or starting faculty salary \$187,200

23. Start by becoming a Nerd of Trust

Easy way to do outreach?

- 1. You probably already do it
- 2. You can easily push and generate science content
- 3. You already have an audience
- 4. That audience is invested in you professionally and personally



facebook®



Courtney April 19 28 shared Wired's photo.

gah....giant land snails

Giant animal invaders are coming your way. http://o



Craig R. McClain shared a link via dlvr.it.

April 25 🎎



Wranglin' the Mighty Mesograzer

deepseanews.com

Underwater Rolly Pollie also known as Elasmopus levis. Source: Matt Whalen Amphipods and I, well, we have a love/hate relationship. I love them because, for all intents and purposes,



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Practices and promises of Facebook for science outreach: Becoming a "Nerd of Trust"

Craig R. McClain

Published: June 27, 2017 • https://doi.org/10.1371/journal.pbio.2002020

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Abstract

Science outreach via social media

The potential and reach of Facebook

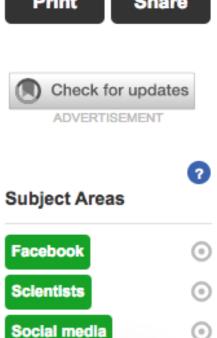
The Facebook network of scientists

Becoming a Nerd of trust

Facebook for science outreach: The way

Abstract

Arguably, the dissemination of science communication has recently entered a new age in which science must compete for public attention with fake news, alternate facts, and pseudoscience. This clash is particularly evident on social media. Facebook has taken a prime role in disseminating fake news, alternate facts, and pseudoscience, but is often ignored in the context of science outreach, especially among individual scientists. Based on new survey data, scientists appear in large Facebook networks but seldom post information about general science, their own scientific research, or culturally controversial topics in science. The typical individual scientist's audience is large and personally connected, potentially leading to both a broad and deep engagement in science. Moreover, this media values individual expertise.



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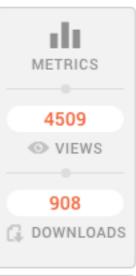
OPINION ARTICLE

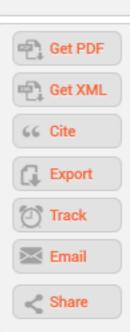
REVISED A critical evaluation of science outreach via social media: its role and impact on scientists [version 2; referees: 2 approved, 1 approved with reservations]

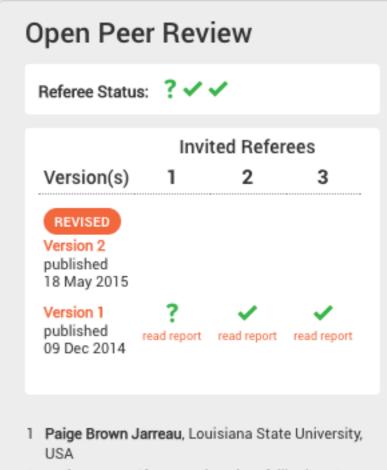
- Craig McClain¹, Liz Neeley²
- Author details
- Grant information

Abstract

The role of scientists in social media and its impact on their careers are not fully explored. While policies and best practices are still fluid, it is concerning that discourse is often based on little to no data, and some arguments directly contradict the available data. Here, we consider the relevant but subjective questions about science outreach via social media (SOSM), specifically: (1) Does a public relations nightmare exist for science?; (2) Why (or why aren't) scientists engaging in social media?; (3) Are scientists using social media well?; and (4) Will social media benefit a scientist's career? We call for the scientific community to create tangible plans that value, measure, and help manage scientists' social media engagement.







- 2 Kathryn B. H. Clancy, University of Illinois, USA
- 3 Sharon L. Dunwoody, University of Wisconsin-Madison, USA

All reports (3), Responses and comments (3)

Comments on this article

All comments (0)

Add a Comment



How to cite: McClain C and Neeley L. A critical evaluation of science outreach via social media: its role and impact on scientists [version 2; referees: 2 approved, 1 approved with reservations]. F1000Research 2015, 3:300 (doi: 10.12688/f1000research.5918.2)