

Engaging the Public Through Featuring Diverse and International Scientists on a Science Outreach Website

Rose Borden^{1,1}, Adriane Lam^{2,2}, and Jennifer Bauer^{3,3}

¹University of Tennessee

²University of Massachusetts Amherst

³Florida Museum of Natural History

November 30, 2022

Abstract

It has become apparent in recent years that scientists need to find new ways to communicate and connect with the public to increase science literacy and trust of scientific results. To address these issues, the Time Scavengers website (timescavengers.blog) was created. This website is maintained and continuously added to by a team of collaborators including graduate students, post docs, museum staff, professors, avocational scientists, educators, and an editor. The website also includes static pages on the scientific method, geology, and climate science methods, as well as a number of resources for educators and others interested in science. The collaborators contribute regular blog posts on a variety of topics related to being a scientist, including the work we do in the field, learning new methods, and various aspects of our academic and career paths. One of our more popular blogs is called ‘Meet the Scientist’, which showcases diverse scientists in many different fields, from graduate students to experienced professional scientists, both U.S.-based and international. The website has reached almost 63,000 unique visitors in the two years since it was created, reaching folks speaking 155 languages in 196 countries. Using data from Google Analytics and social media accounts, including Facebook, Twitter, and Instagram, we examined some of the trends related to our broad international reach, to determine if any specific posts or types of posts attracted more international or non-English speaking visitors. Besides examining the general geographic reach over time, a few more specific comparisons were conducted. We examined whether or not Meet the Scientist posts featuring international scientists attracted more international visitors than those featuring U.S.-based scientists. We also analyzed data for Field Excursions posts that described places people could visit to see if they attracted site visitors from those areas described in the post or had a broader national and international reach. Preliminary data indicate that posts about international scientists reach more countries, on average, than those featuring U.S. scientists, and geographic-specific posts reach a broad national and international audience.



UMassAmherst

Engaging the Public Through Featuring Diverse and International Scientists on a Science Outreach Website

Rose Michelle Borden^{1*}, Adriane Renee Lam², & Jennifer Elizabeth Bauer³

¹University of Tennessee Knoxville, ²University of Massachusetts Amherst, ³University of Michigan Museum of Paleontology, *rmborden25@gmail.com

PATREON



Site Introduction

It has become apparent in recent years that scientists need to find new ways to communicate and connect with the public to increase science literacy and trust of scientific results. To address these issues, the Time Scavengers website (timescavengers.blog) was created. This website is maintained and continuously added to by a team of collaborators (see pictures below) including graduate students, post docs, museum staff, professors, avocational scientists, educators, and an editor. The website also includes static pages on the scientific method, geology, and climate science, as well as a number of resources for educators and others interested in science. The collaborators contribute regular blog posts on a variety of topics related to being a scientist, including the work we do in the field, learning new methods, and various aspects of our academic and career paths.

One of our more popular blogs is called 'Meet the Scientist', which showcases diverse scientists in many different fields, from graduate students to experienced professional scientists, both U.S.-based and international. The website has reached almost 63,000 unique visitors in the two years since it was created, reaching folks speaking 155 languages in 196 countries or regions (as defined by Google Analytics).



Jen Bauer and Adriane Lam Rose Borden Sarah Sheffield Cam Muskelly Megan Thompson-Munson Maggie Limbeck



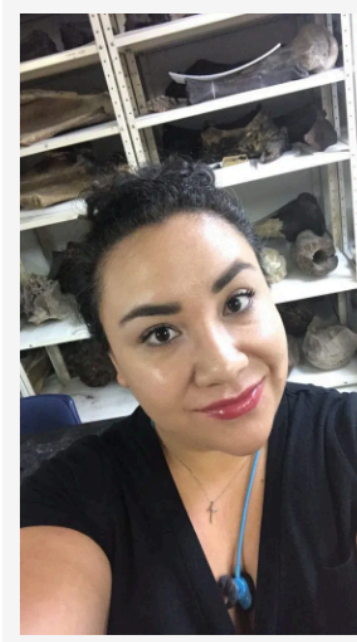
Mike Hils Kyle Hartshorn Andy Fraass Susanna Fraass Dipa Desai

Meet the Scientist

Meet the Scientist posts are written by guest bloggers. There is a template with 4 broad guiding questions, but how to write the post is up to each scientist. Some do it as a Q&A or use the questions as prompts and write in more of a narrative style. The goal with these posts is to showcase the diversity of science and scientists in as many ways possible. Another goal of the website and this blog is to reach a broader international community. Here, we assessed if Meet the Scientist posts written by international scientists have a broader geographic reach than those written by American scientists.

Name and field of study **Jeanette Pirlo, Paleontologist and Marine Biologist**

February 26, 2018 jerebauer



I am currently a Ph.D. student studying paleontology at the [Florida Museum](#). My main interest are fossil sharks and how their distributional range (where they live) has changed over time. I have been lucky enough to travel to different places to look for fossils, including Florida, Panama, the Nebraska Badlands, and California. My two favorite finds so far have been a Megalodon tooth in California, and a carnivore humerus while in the Badlands. Along with the field work, I also develop and put on workshops for K-12 educators to teach them about paleontology and how to bring it back into their classrooms. I love hosting these workshops because I get to share my enthusiasm for paleontology and give teachers fossils to take back to their classrooms.

I do not have data in the same sense as most scientists because I have just begun planning out my research projects for my dissertation. But I have been working on various projects that allow me to try new data-finding tools including 3D technology like desktop 3D scanners and microCT scanners. This technology has allowed us to scan fossils and do morphometric analysis on the specimens. I'm excited to see where these skills will take me with my research! Through the workshops I've designed, I have been able to create fossil kits for teachers and help them teach climate change, evolution, and geologic time, among other topics, using fossils as **evidence** for change. I've learned how to create programs that are impactful for participants by providing them content that they can bring back to their classrooms. I'm looking forward to continuing this aspect of my work. I enjoy having a direct large impact on communities. As for my research, I am interested in figuring out how shark population distributions will change as ocean temperatures change by looking at fossil shark distributions over deep time.



Jeanette in the Nebraska Badlands!

Links to relevant external sites

Cool pictures of the scientist at work!

Hyperlinks to relevant pages on TS site

Methods and Data

❖ To learn about our international reach, seven pairs of Meet the Scientist posts were compared to find the reach across social media platforms, languages, and countries

❖ Each pair includes a Meet the Scientist blog post from a domestic (US) and international scientist released within 2-4 weeks of each other

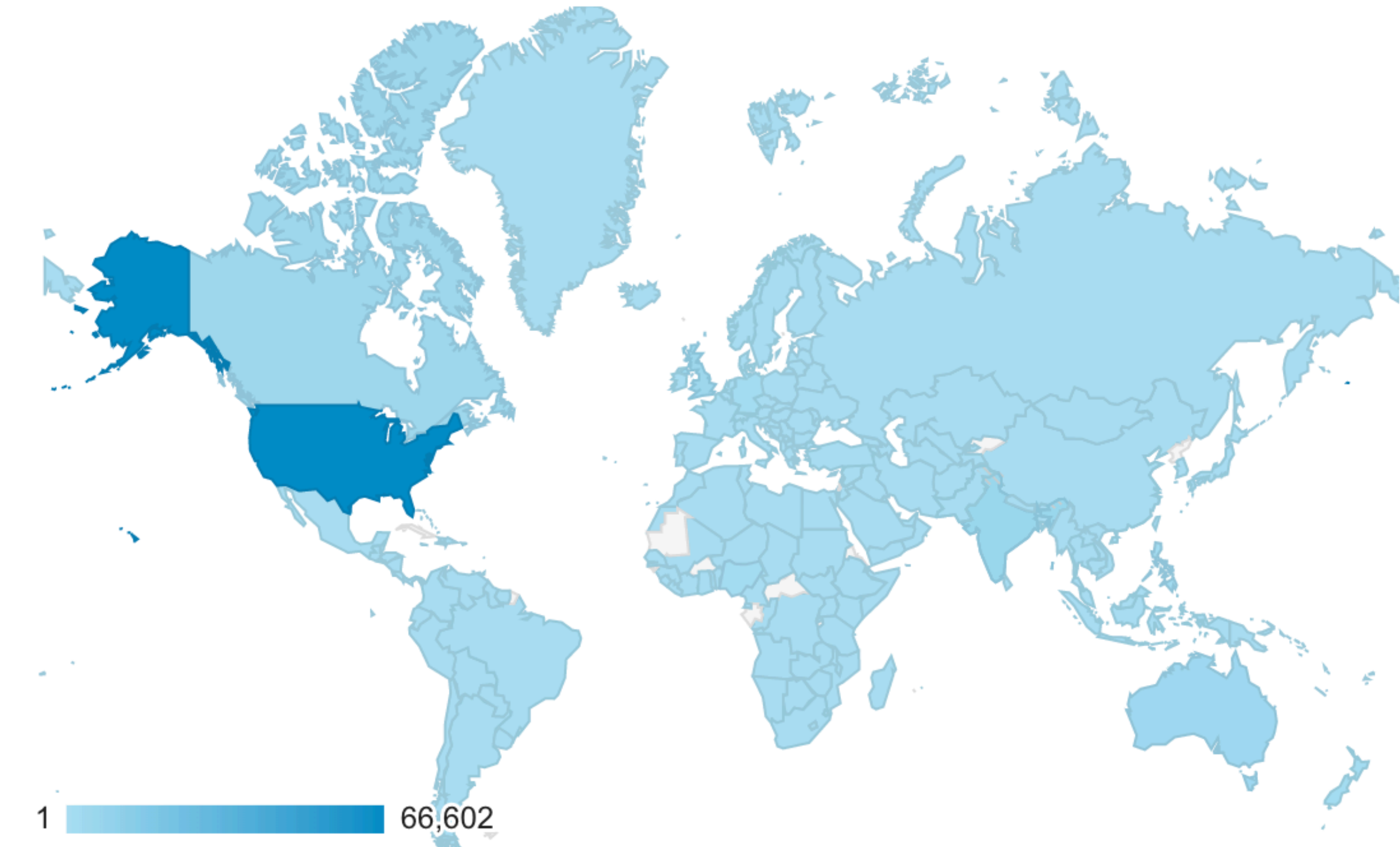
❖ Data for the social media post announcing each blog post (to account for the difference between followers and site users) were downloaded from our Facebook, Instagram, and Twitter accounts and compared

❖ The social media data included the number of people who would have seen it on their timelines (**reach**) and the **engagement rate** (number of likes, shares, and comments per number of people reached, multiplied by 100)

❖ The data collected from Google Analytics showed the number and demographics of users of the Time Scavengers site, including the top countries by number of users, the number of countries where users were located, and the number of languages users had their internet browsers set to

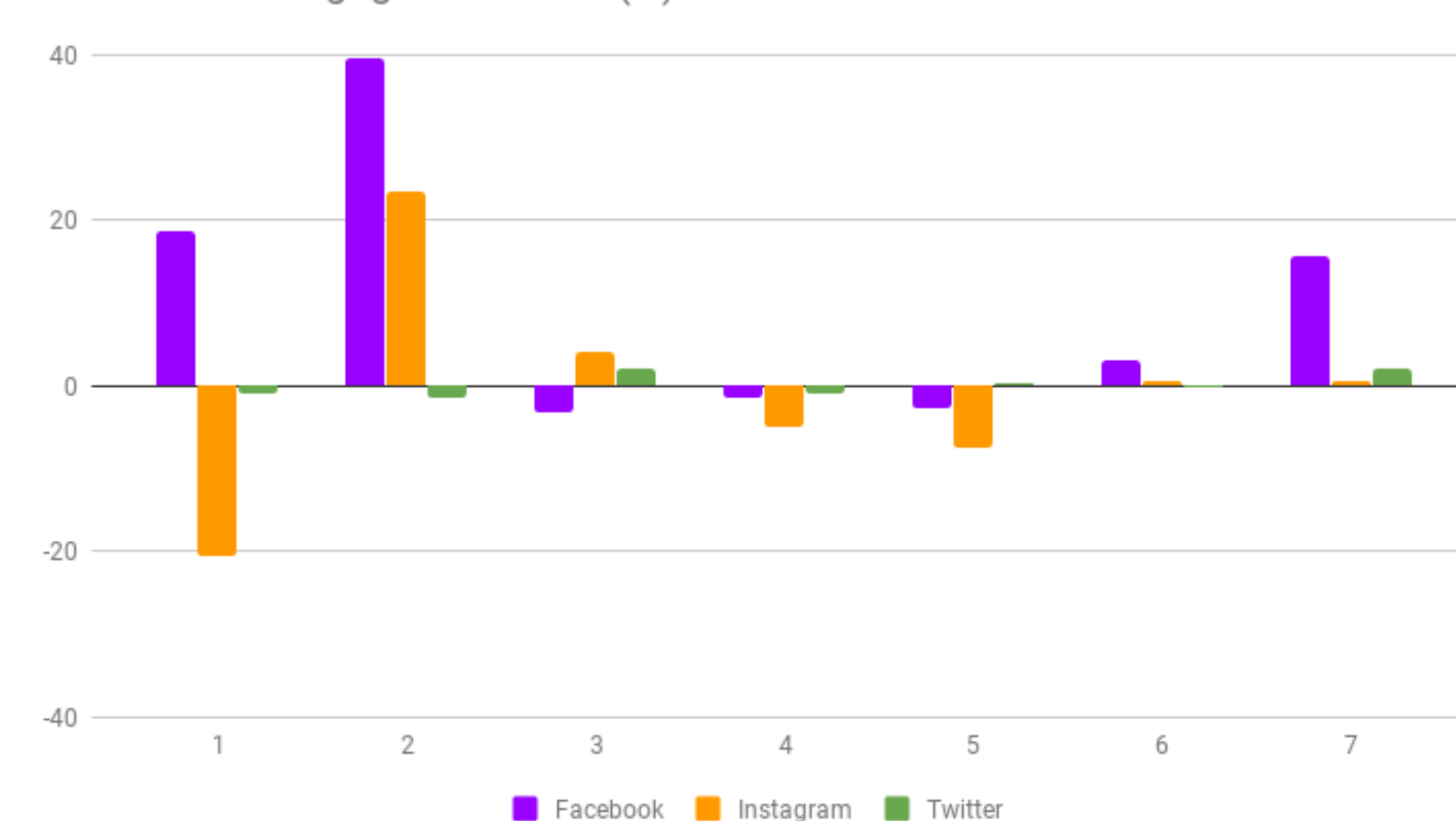
❖ There is no way to get this data directly for a specific page on the site, so the site data for the day that posts were released or announced on social media was used as a proxy

Map Showing Countries Where Users Have Accessed The Time Scavengers Site From August 2017 To Present



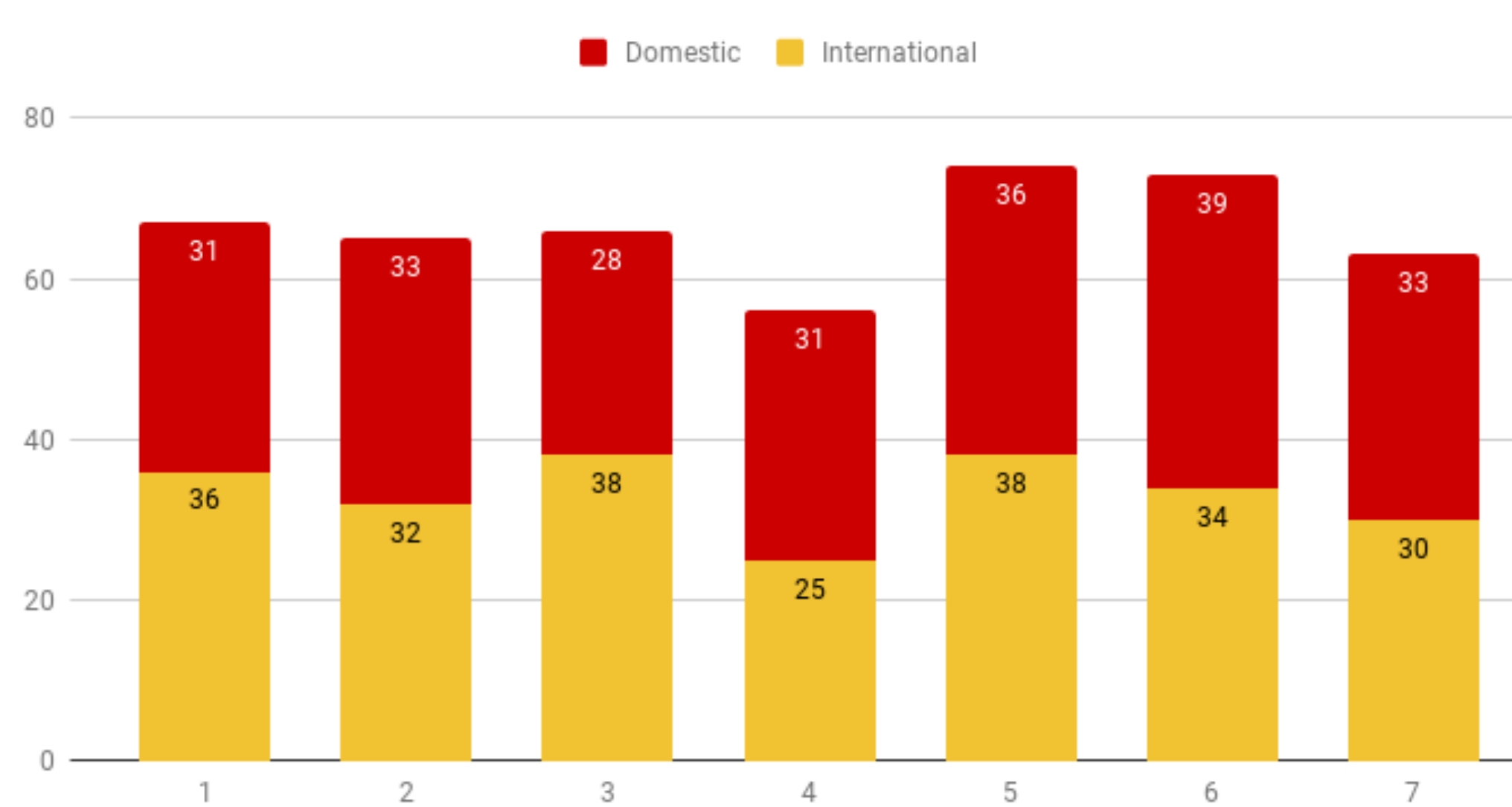
International	Release date	Top Country	Second Country	Top Region w/in U.S.	Location/Home Country
I1	1/28/2019	U.S.	Colombia	California	Colombia
I2	2/11/2019	U.S.	United Kingdom	California	United Kingdom
I3	3/11/2019	U.S.	United Kingdom	Virginia	United Kingdom
I4	8/7/2019	U.S.	India	California	Netherlands
I5	8/21/2019	U.S.	Australia	California	Canada
I6	9/4/2019	U.S.	India	California	United Kingdom
I7	9/11/2019	U.S.	Australia	California	Tobago
U.S.					
D1	1/14/2019	U.S.	Canada	California	
D2	2/25/2019	U.S.	India	South Dakota	
D3	4/8/2019	U.S.	United Kingdom	California	
D4	9/3/2019	U.S.	India	Virginia	
D5	9/25/2019	U.S.	Canada	Florida	
D6	10/1/2019	U.S.	Philippines	California	
D7	10/15/2019	U.S.	India	Illinois	

Difference in Engagement Rate (%) between Domestic & International Mts



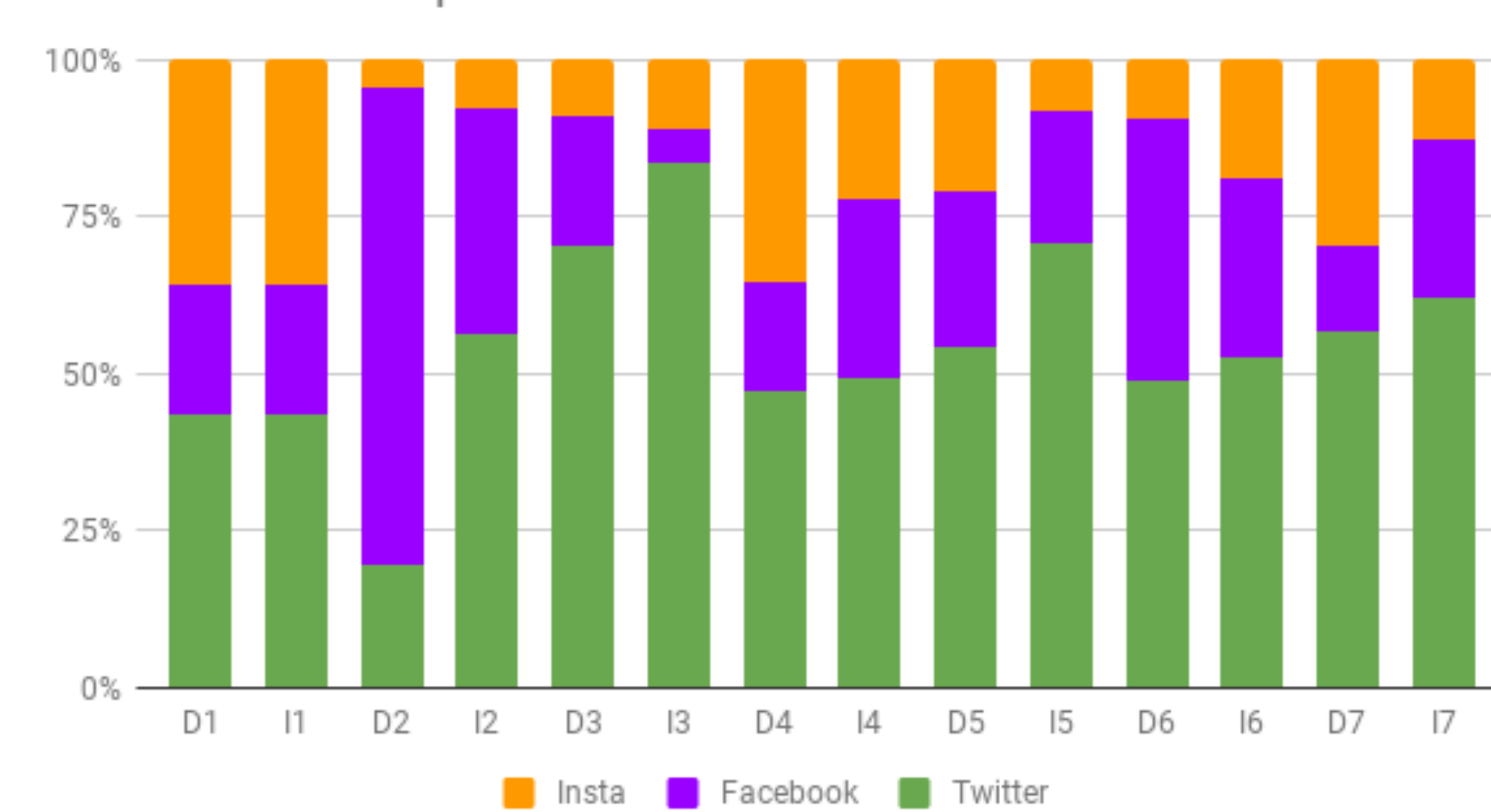
When engagement rate is positive, domestic posts are performing better. When engagement rate is negative, international posts are performing better.

Number of Countries Reached for Paired Domestic-International Posts



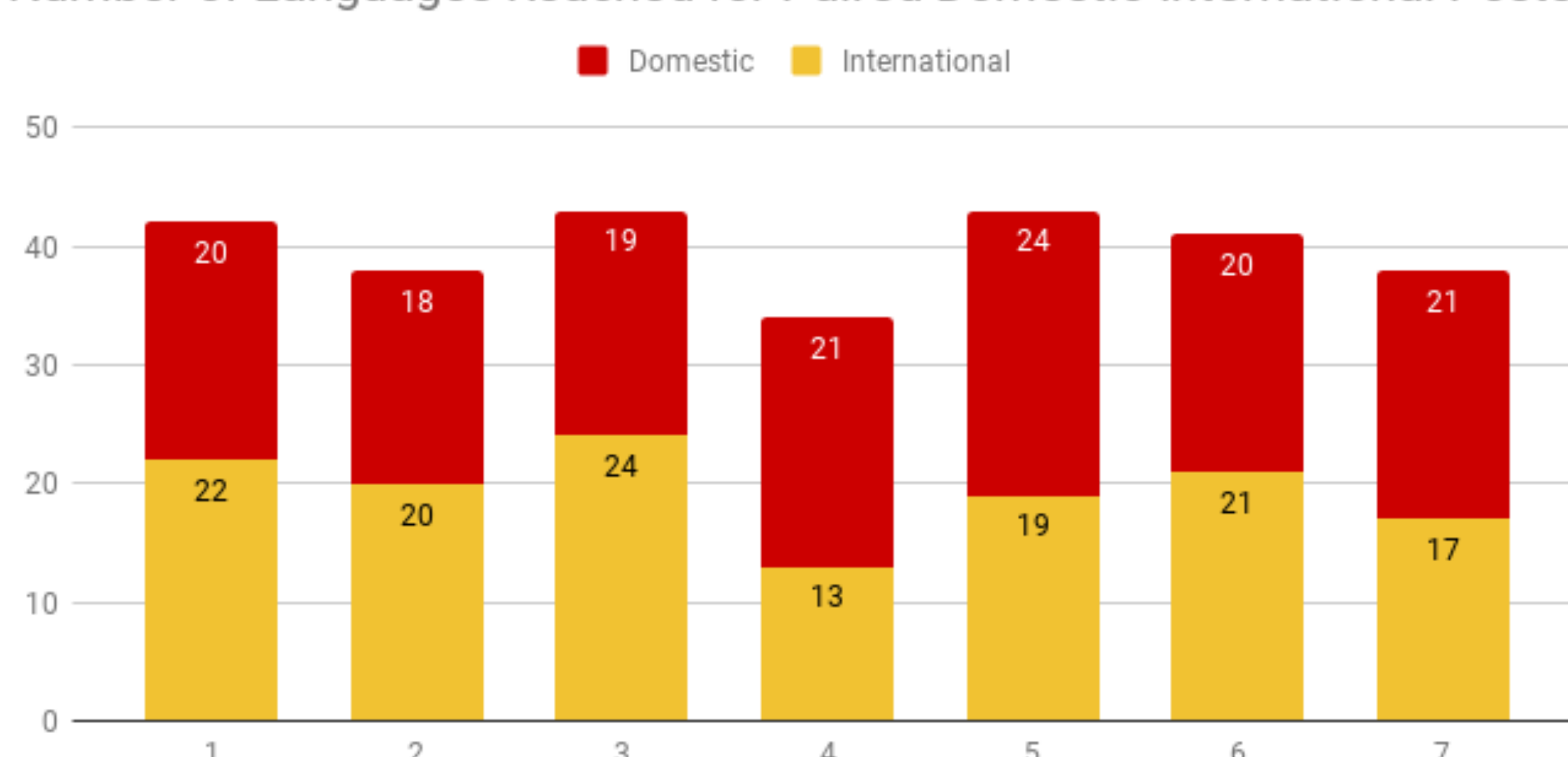
In only three of the seven pairs, number of countries reached was higher for international posts compared to the domestic posts. In four of the seven pairs, number of languages reached on the international posts exceeded those of domestic posts.

Normalized Comparison of Reach Across Platforms



Comparison of post reach on each platform. These were normalized for each individual for easier comparison. In general, International posts seem to have a higher reach on Facebook and Instagram but lower reach on Twitter.

Number of Languages Reached for Paired Domestic-International Posts



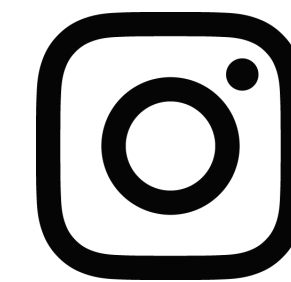
Implications and Future Work

❖ The Meet the Scientist blog posts in general reach a broad geographic audience, with most posts reaching users in ~30 countries and speaking ~20 languages.

❖ For some pairs of domestic and international scientist posts the international ones reached more countries and languages, but for some pairs it was the opposite.

❖ In several of the international posts, one of the top countries where the post is viewed is the country that scientist is from (I1, I2, I3).

❖ These data indicate that we should feature more international folks on our Meet the Scientist blog to reach our overall goal of reaching a wider international community.



@TimeScavengers



@TimeScavengers



Facebook.com/TimeScavengers

Want to write a blog post or be involved in other ways? Leave a note or just your name and e-mail below! You can also contact us by sending an e-mail to TimeScavengers@gmail.com