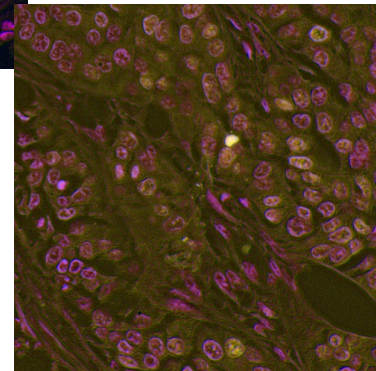
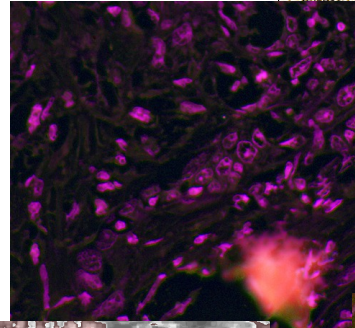
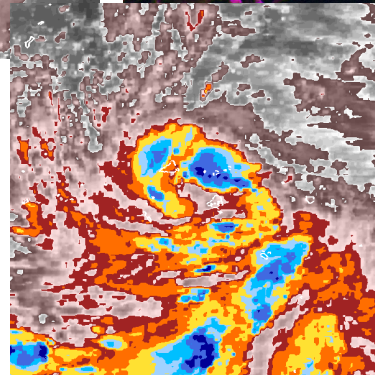
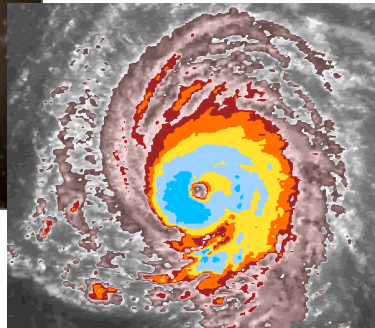
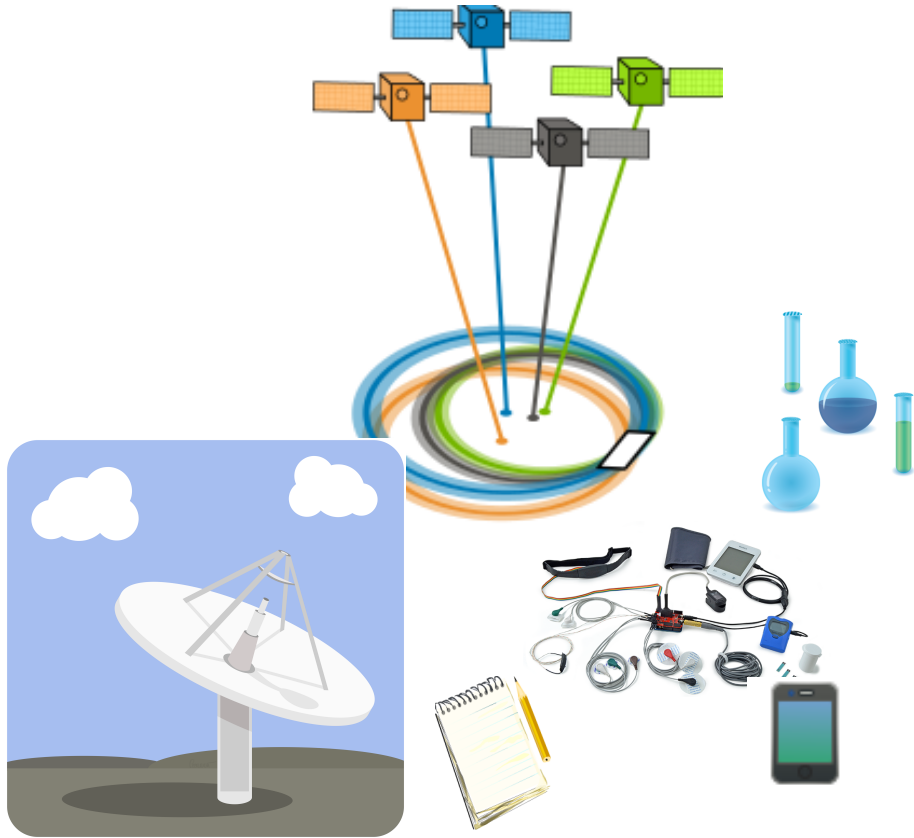


Zooniverse: Public Engagement Through Online Citizen Science

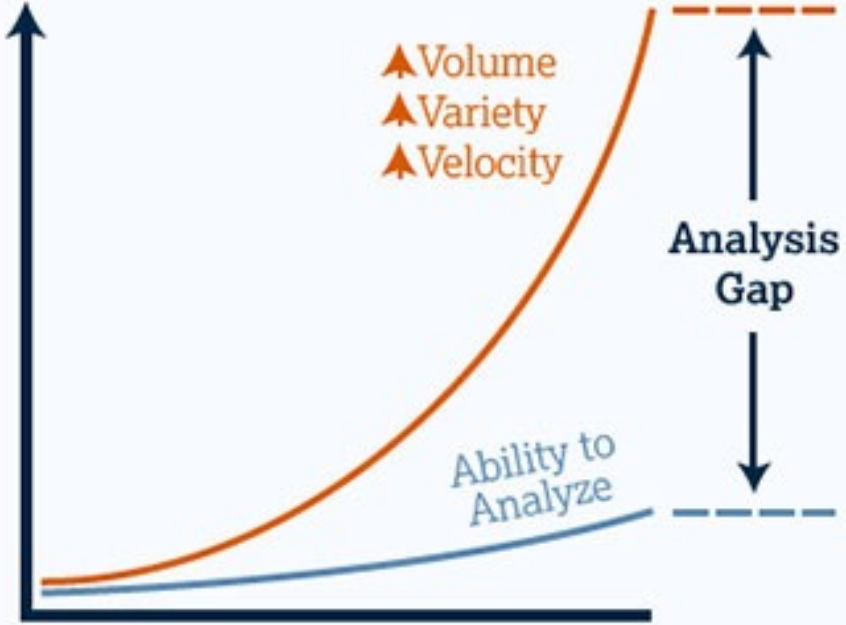
Lucy Fortson





The Data Deluge

Information Explosion



Machine algorithms only as good as their training.

Which is better at spotting the tiger?



A computer?



Or a five-year-old child?



Human Brain
better at
analyzing
complex
images

Galaxy Zoo website launched in 2007 inviting public to classify the shape of one million galaxies: spiral or elliptical?

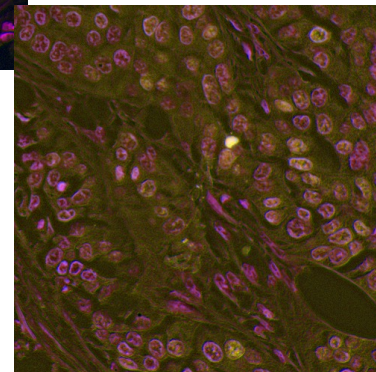
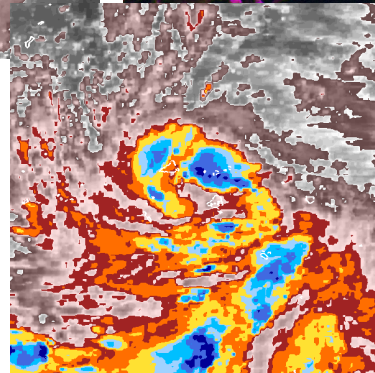
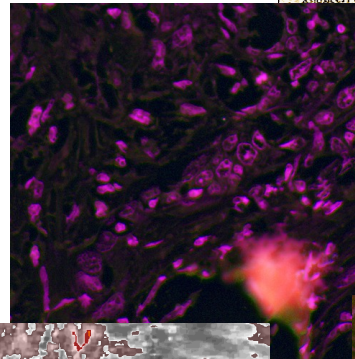
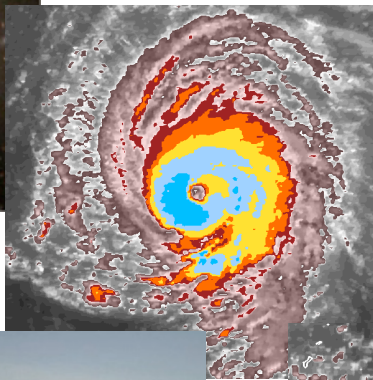


The screenshot shows the Galaxy Zoo website interface. At the top, the logo "GALAXY ZOO.org" is displayed with a glowing orange galaxy icon. Below the logo is a navigation menu with links: Welcome, Home, The Science, How to Take Part, Galaxy Analysis, Forum, Press & News, FAQ, Links, Contact Us, Login, and Register. On the left side, there is a sidebar with "Galaxy Tutorial" and "Galaxy Analysis" links. The main content area features a large image of a galaxy field. To the right of the image, the text "Galaxy Ref: 588010880371851294" is shown, followed by the instruction "Choose the Galaxy Profile by clicking the buttons below". Below this instruction are five buttons: "CLOCK" (spiral galaxy), "ANTI" (spiral galaxy), "EDGE ON / UNCLER" (spiral galaxy), "ELLIPTICAL GALAXY", "STAR / DON'T KNOW", and "MERGERS". At the bottom of the image area, there is a checkbox labeled "Show Grid Overlay on the next Image".

~40 million classifications by nearly 150,000 users in ~1 year

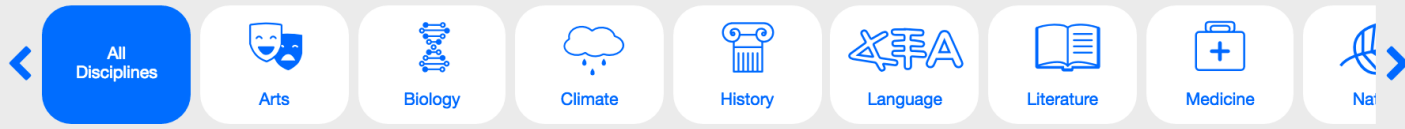
Roughly 3.3 continuous person-years!

Astronomy not the only discipline with too much data!



Zooniverse.org launched in 2010

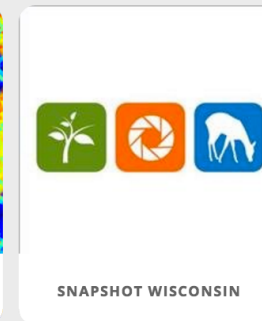
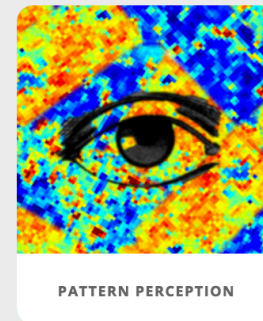
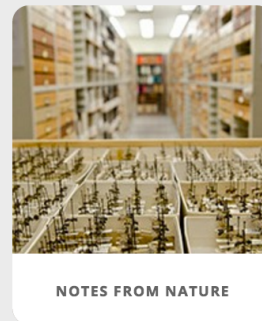
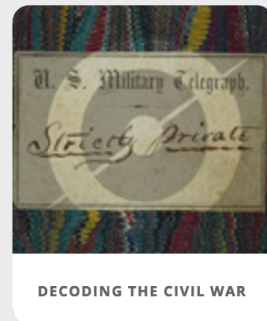
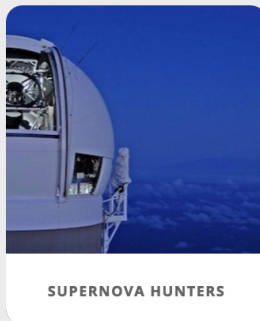
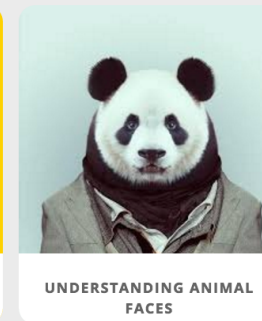
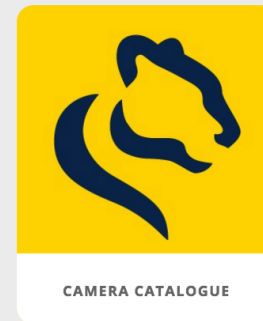
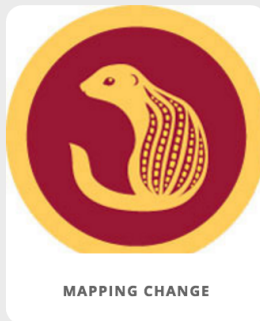
All Projects



Most Recently Launched x

Showing 1-20 of 48 projects found.

Name: ▾



120+ projects!!!!

100+ peer reviewed papers

1.7 million people worldwide!

110+ FTE effort in one year

...wait...do you
think they
counted me on
penguinwatch.org?



Yippee!
Way to go
crowd!

...umm...but how
can they build
projects that
fast???

Zooniverse DIY Project Builder

The screenshot shows the Zooniverse DIY Project Builder interface for the 'MPALA LIVE!' project. The browser address bar shows the URL <https://www.zooniverse.org/lab>. The page is divided into several sections:

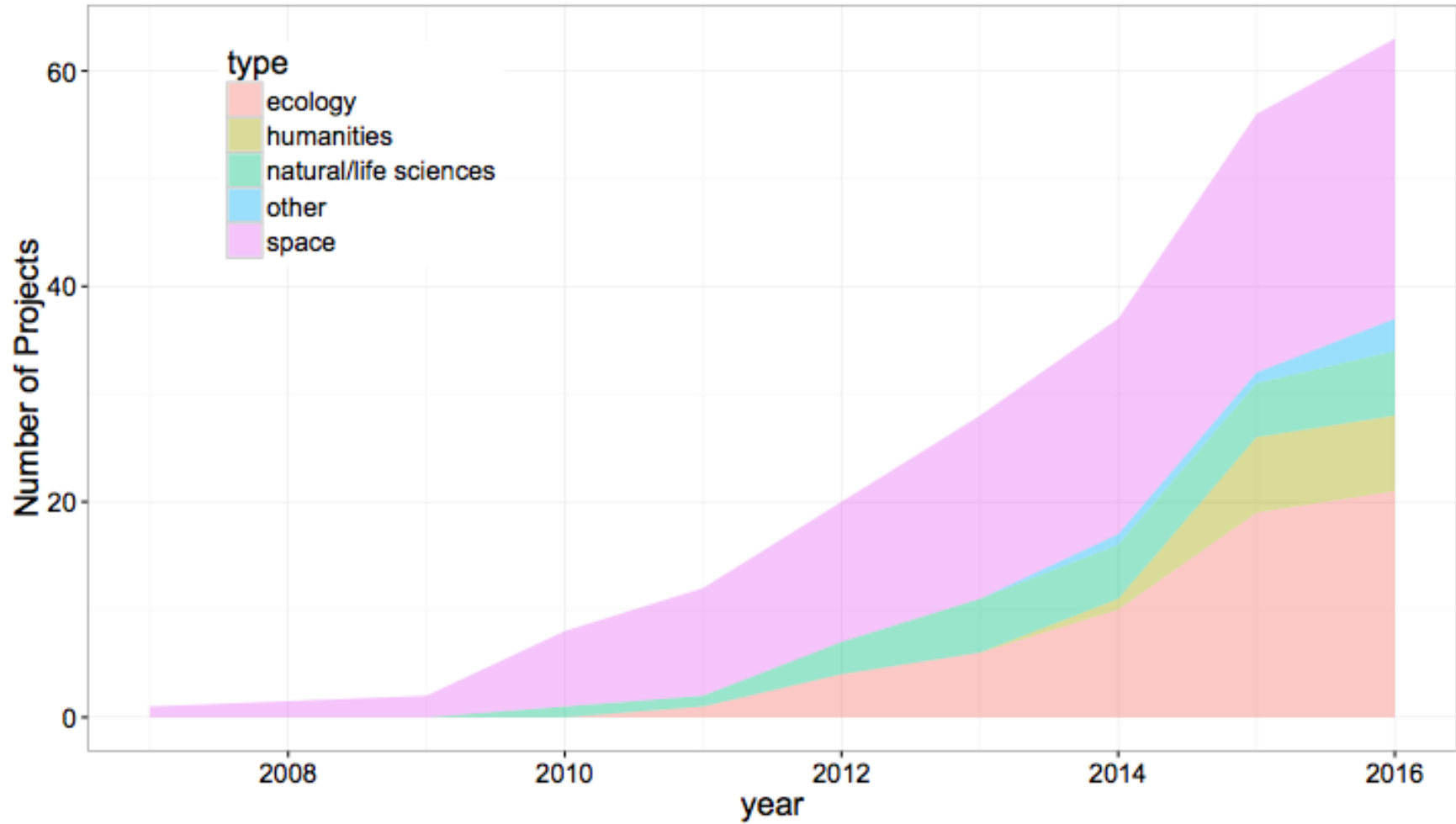
- Navigation:** A top navigation bar with links for 'Projects', 'About', 'Get Involved', 'Talk', 'Build a project', and 'News'. A user profile for 'trouille' is visible in the top right.
- Project Details:** A sidebar on the left lists 'Project details' (selected), 'About', 'Collaborators', 'Field guide', 'Tutorial', 'Media', 'Visibility', 'Talk', and 'Data Exports'. Below this, 'WORKFLOWS' includes 'Elephant Presence/Absence', 'Elephant-only behavior', and 'Multi-animal id & behavior'. A 'New workflow' button is also present.
- Form Fields:**
 - Avatar:** A circular logo with a silhouette of an elephant and the text 'MPALA LIVE!'.
 - NAME:** A text box containing 'MPala Live!'.
 - DESCRIPTION:** A text box containing 'Help researchers identify the animals that...'. Below it, a note states: 'This should be a one-line call to action for your project page. Some volunteers will decide whether to try you... so try to write short text that will make people active... of 300 characters remaining.'
 - INTRODUCTION:** A rich text editor with a toolbar containing icons for undo, redo, bold, italic, link, unlink, bulleted list, numbered list, and text color. The text reads: 'Peek inside their private worlds, watch and listen.'
- Background image:** A text box containing 'This image will be the background for all of your...'. Below it, a small image of hippos in water is shown.

On the right side of the screenshot, a preview of the project's public page is shown. It features a large image of hippos in water with the text: 'Help researchers identify the animals that roam Mpala in Kenya's Laikipia area.' Below the image are two buttons: 'Learn more' and 'Get started'. At the bottom of the preview, there is a link for 'MPALA LIVE! STATISTICS'.

Subject Types: Single or multiple images, video

Project Types: Questions, drawing/annotations, drop-down, open text

Growth in Disciplines



Planetary Response Network



PLANETARY RESPONSE NETWORK & RESCUE GLOBAL: CARIBBEAN STORMS 2017

ABOUT

CLASSIFY

TALK

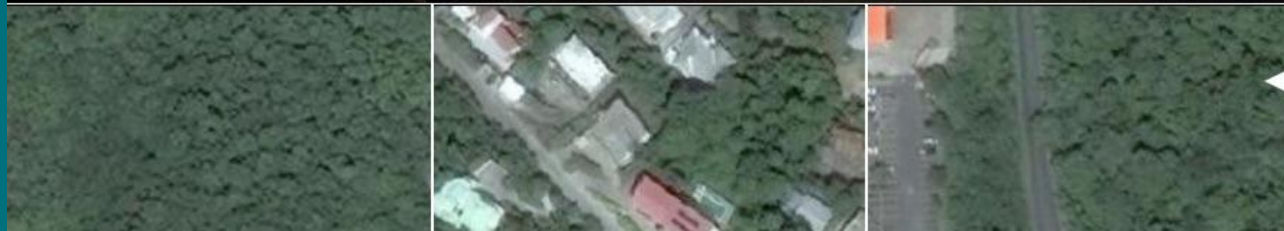
COLLECT

Subject set #3 is up. We've already completed workflow #1 (removing unclassifiable images). The current workflow (marking areas of need) is still going strong. Please refresh the page to make sure your system registers the update. And ignore the stats for now - they're lagging behind. Thank you!

Join the relief effort to help the
victims of Hurricane Irma

Learn more

Get started



202 people are talking about
**Planetary Response Network
& Rescue Global: Caribbean
Storms 2017** right now.

5,000 volunteers, 650,000 classifications for maps of destruction used by first responders for islands hit by Hurricanes Irma and Maria

Anatomy of a Zooniverse Project



SNAPSHOT SERENGETI

Pattern	Color	Horns	Tail	Build
Aardvark	Giraffe		Porcupine	
Aardwolf	Guinea fowl		Reedbuck	
Baboon	Hare		Reptiles	
Bat-eared fox	Hartebeest		Rhinoceros	
Bird (other)	Hippopotamus		Rodents	
Buffalo	Honey-badger		Secretary bird	
Bushbuck	Hyena (spotted)		Serval	
Caracal	Hyena (striped)		Topi	
Cheetah	Impala		Vervet monkey	
Chvet	Jackal		Warthog	
Dik dik	Kori bustard		Waterbuck	
Eland	Leopard		Wildcat	
Elephant	Lion (female or cub)		Wildebeest	
Gazelle (Grant's)	Lion (male)		Zebra	
Gazelle (Thomson's)	Mongoose		Zorilla	
Genet	Ostrich		Human	

Nothing here Finish

Primary task interface

“Talk” – where volunteers discuss their findings.

“Blogs” – where volunteers hear from the research team.

#stork
by parfan 2 hours ago

#bird #white-bellied-ousterd
by parfan 2 hours ago

I think this is a young #jackal, but I'm not quite sure.
by fig94 18 hours ago

#topi and young?
by heeled3 a day ago

Baby resting. I hope. Seems to be breathing.
by Susan027 2 days ago

Great sequence of photos.
by Susan027 2 days ago

Neck fur of a #gnu?
by so666 2 days ago

#interacting !!!
by parfan 2 days ago

Snapshot Serengeti
A Zooniverse Project Blog

Subscribe to RSS

April 26, 2013

by Margaret Koehnelt

1 News
1 Comment
(6)

Notes from Nature

Next week, Zooniverse is holding their annual meeting of project science teams. Since Ali and Craig are both still in Tanzania, I'm going to be the only Snapshot Serengeti representative there, but I'm super excited to go. I went to this meeting last year, while we were still developing Snapshot Serengeti, and it was both really fun (the Zooniverse team in Chicago are awesome!) and really useful. Since Zooniverse already had a dozen other projects live, I got a lot of advice from their science team members about what to expect when the Snapshot Serengeti went live, and also tips on analyzing the large data set that results from the project. This year, I'll be one of the people giving tips to the scientists of developing projects.

Speaking of which, if you haven't already, you should go check out [Notes from Nature](#), which launched this week. It's a bit different from Snapshot

SEARCH

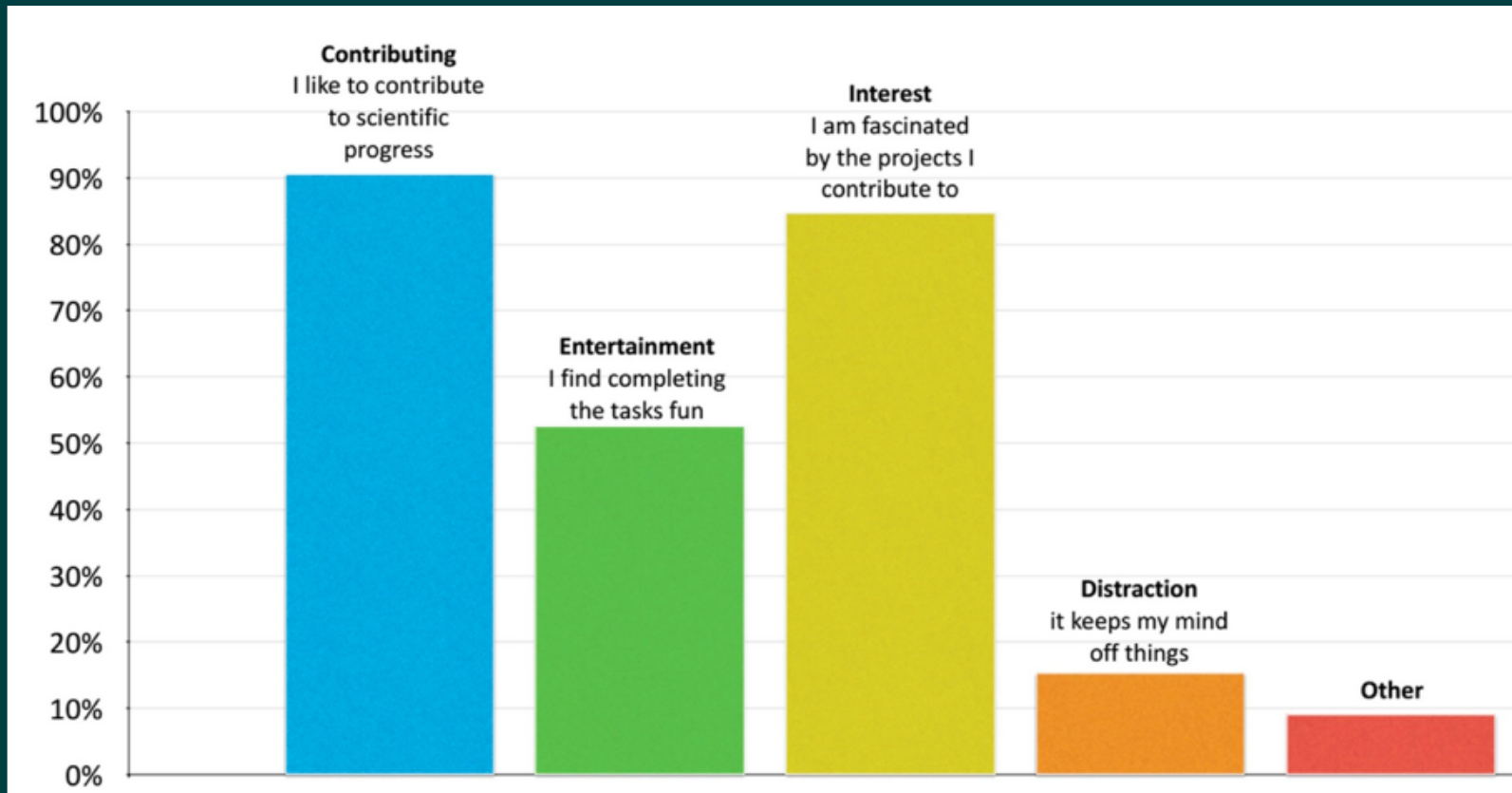
WELCOME

This is the blog of Snapshot Serengeti from the Zooniverse. Help researchers by going on a virtual safari in Tanzania.

RECENT POSTS

Notes from Nature

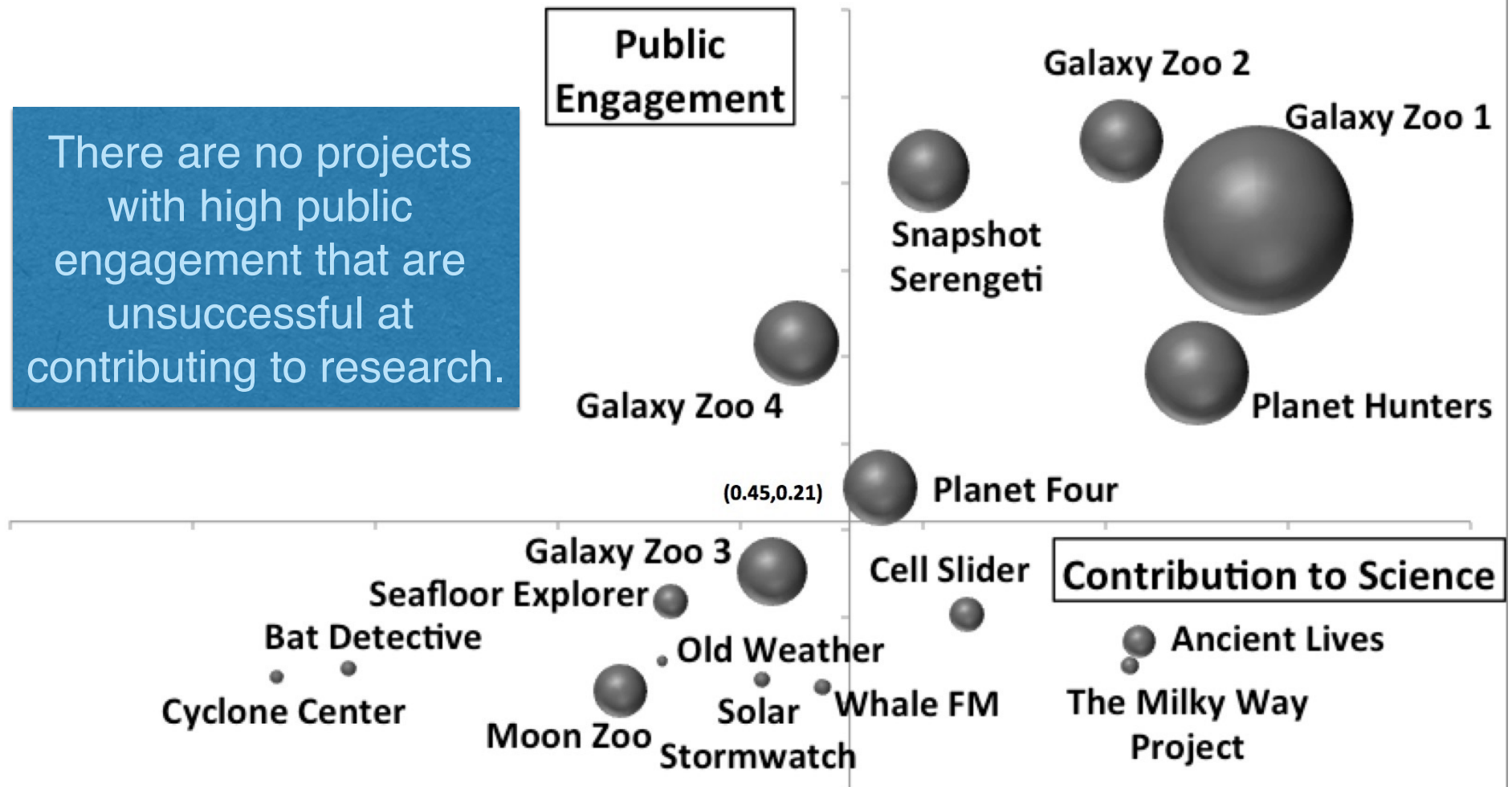
Why volunteers classify



Raddick et al. (2013); Crowston et al. submitted

Success Matrix

There are no projects with high public engagement that are unsuccessful at contributing to research.



Zooniverse@UMN

Galaxy Zoo



Ancient Lives



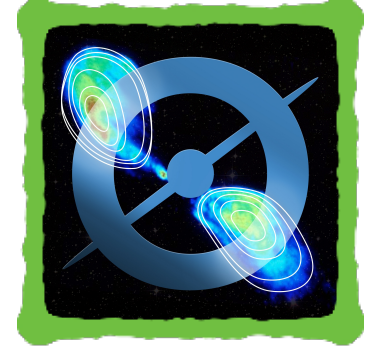
Andromeda Project



Snapshot Serengeti



Radio Galaxy Zoo



Muon Hunter



Measuring the ANZACs



Decoding the Civil War



Mapping Change



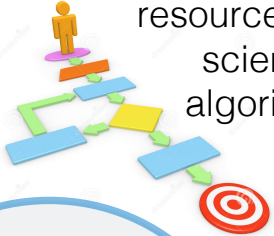
Supernova Hunter

- **Projects with UMN Research Team Members**
- **Projects with UMN Developer**
- **Many upcoming projects!!**

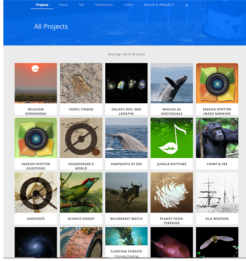
Currently funded by: CSE, CBS, CLA, UMII, Libraries

Zooniverse@UMN: Current & Future Initiatives

Researcher resources: data science algorithms



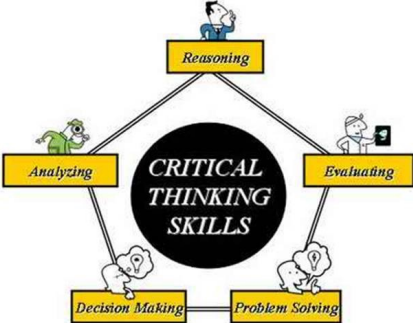
Connect data collection to data analysis projects




Workshops and helpdesk to develop new projects



Optimizing Human & Machine Classifiers



Facilitate gains in critical thinking skills

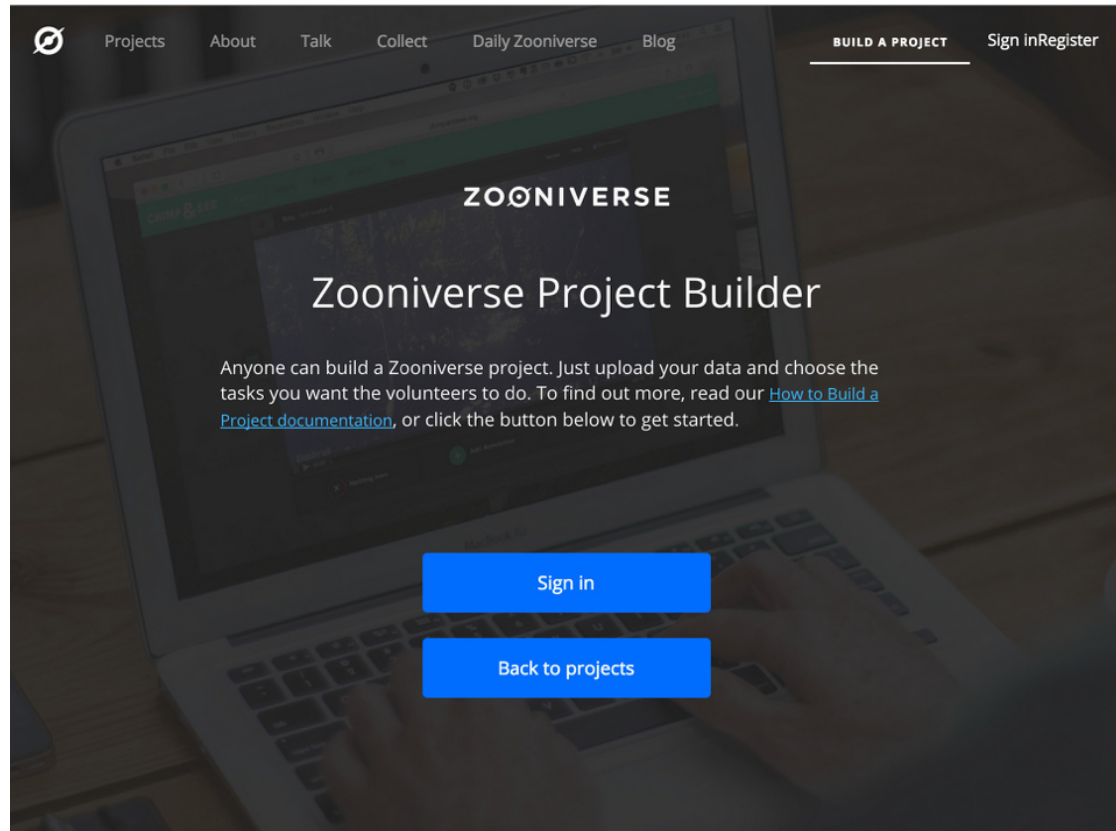


Incorporate citizen science in K-16 classrooms



Understand best practices in engaging the crowd

Build your own project!



<https://www.zooniverse.org/lab>

Thank You!

Credits

Zooniverse international web dev, design, & research team (28 people strong):

- Oxford: 7 devs, 2 researchers, 1 communications lead, PI Chris Lintott
- Adler: 7 devs, 1 designer, 1 researcher, co-I Laura Trouille
- UMN: 1 developer, 1 data scientist, 4 researchers, lead Lucy Fortson
- Portsmouth: 1 data scientist, lead Karen Masters



Zooniverse Team Meeting at UMN, October 2016

Funded in part by: NSF, NASA, NOAO, NEH, Google, Sloan in the US

AND THANKS TO ALL OUR VOLUNTEERS WHO MAKE ALL OUR WORK POSSIBLE !!

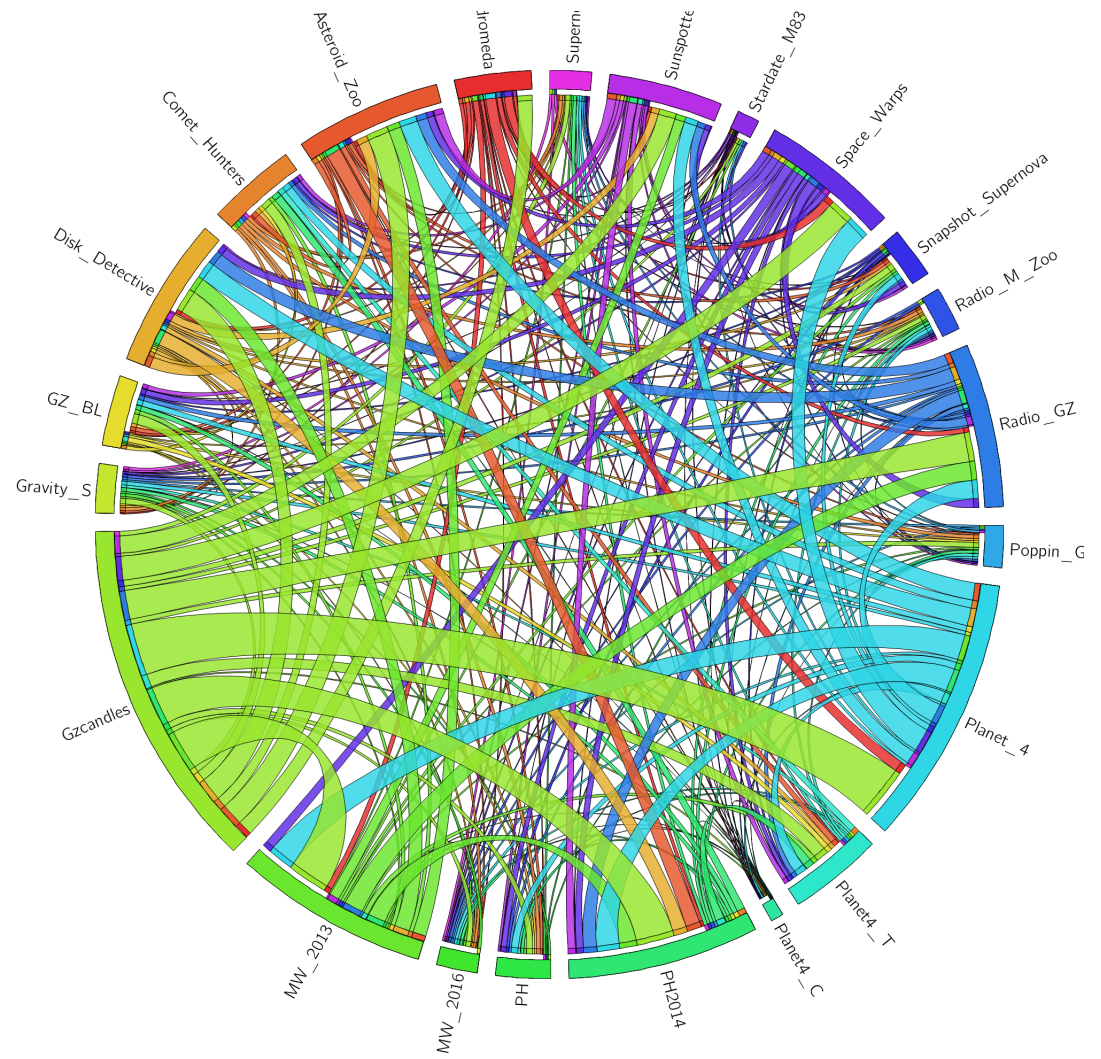
BACKUP SLIDES

Calculating Success

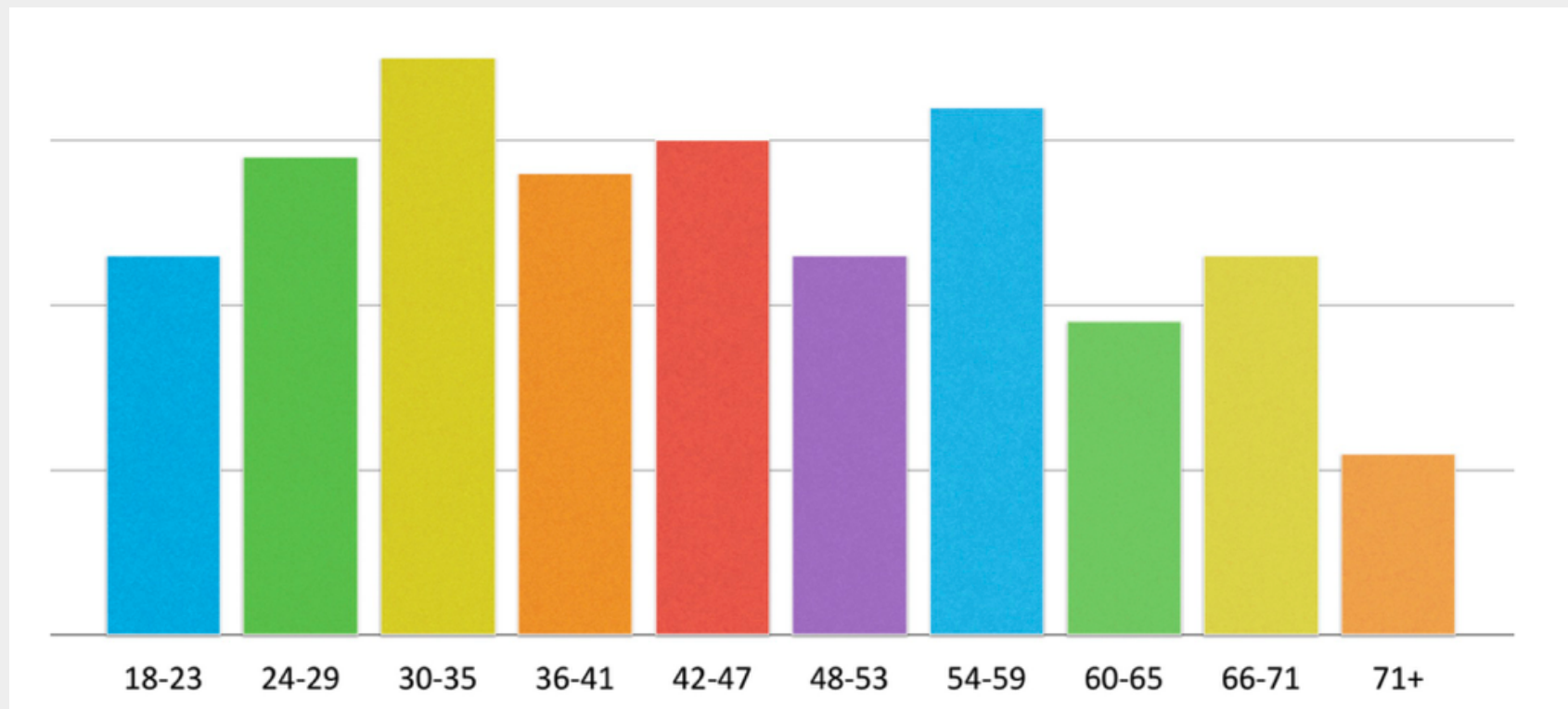
Matrix Element	Performance Indicator	Measurement
Contribution to Science	Data Value	Publication Rate
		Completeness of Analysis
		Academic Impact
	Project Design and Resource Allocation	Resource Savings
		Distribution of Effort
		Effective Training
Public Engagement	Dissemination and Feedback	Collaboration
		Communication
		Interaction
	Participation and Opportunities for Learning	Project Appeal
		Sustained Engagement
		Public Contribution

Cox et al 2015

Volunteer pathways between projects



Age breakdown



Volunteer demographics – sex

