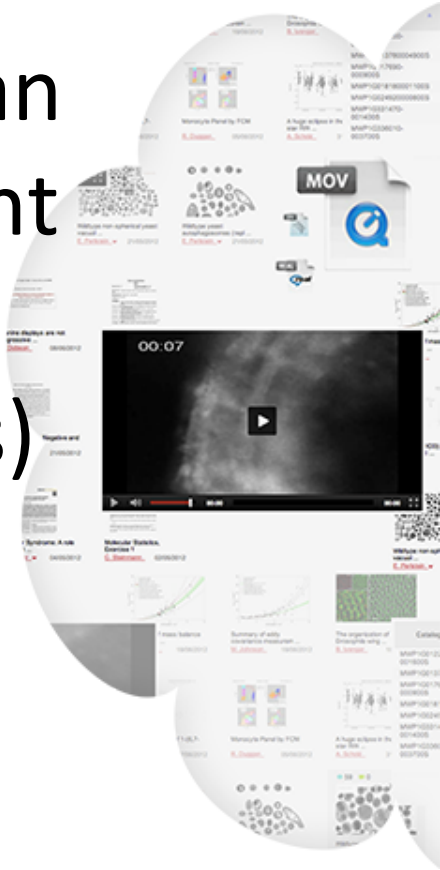
figshare! Or… Building out an active research management service (for researchers, publishers, and institutions)



Dan Valen
Product Specialist, fig**share**

An open science push in the EU

"But taxpayers who are paying for that research will want to see something back. Directly – through open access to results and data. And indirectly – through making science work better for all of us.

That's why we will require open access to all publications stemming from EU-funded research. That's why we will progressively open access to the research data, too. And why we're asking national funding bodies to do the same."

Neelie Kroes.

Vice President for the European Commission

European Commission

HORIZON 2020

The EU Framework Programme for Research and Innovation

EPSRC

Engineering and Physical Sciences Research Council

● Full Coverage ◐ Partial Coverage ○ No Coverage

	Policy Coverage		Policy Stipulations					Support Provided			
Research Funders	Published outputs	Data	Time limits	Data plan	Access/ sharing	Long-term curation	Monitoring	Guidance	Repository	Data centre	Costs
AHRC	●	●	●	●	●	◐	○	●	○	◐	◐
BBSRC	●	●	●	●	●	●	●	●	●	◐	●
CRUK	●	●	●	●	●	●	●	◐	●	○	○
EPSRC	●	●	●	◐	●	●	●	◐	○	○	●
ESRC	●	●	●	●	●	●	●	●	●	●	◐
MRC	●	●	●	●	●	●	○	◐	●	○	◐
NERC	●	●	●	●	●	●	●	●	●	●	◐
STFC	●	●	●	●	●	●	●	◐	●	◐	◐
Wellcome Trust	●	●	●	●	●	●	●	●	●	◐	●

figshare for institutions

simplifying your route to compliance

EPSRC

The Engineering and Physical Sciences Research Council is at the heart of discovery and innovation. Their research saves lives, creates prosperity, protects the environment and inspires future generations.

Their mission

Generate public awareness
Disseminate knowledge
Encourage public engagement
Provide advice

the issues with data	figshare to the rescue
gets lost too often –	✔ storing data for at least 10 years
not accessible to the public –	✔ making appropiate content open
not secure –	✔ securing sensitive data
difficult to manage –	✔ making publishing and discovery easy

...we've been doing it already for 3 years

the WHITE HOUSE PRESIDENT BARACK OBAMA

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Office of Science and Technology Policy

"The Obama Administration is committed to the proposition that citizens deserve easy access to the results of scientific research their tax dollars have paid for. That's why, in a policy memorandum released today, OSTP Director John Holdren has directed Federal agencies with more than $100M in R&D expenditures to **develop plans to make the published results of federally funded research freely available to the public within one year of publication and requiring researchers to better account for and manage the digital data resulting from federally funded scientific research.**"

https://www.whitehouse.gov/blog/2013/02/22/expanding-public-access-results-federally-funded-research

Overview of OSTP Responses

● Full Coverage ◐ Partial Coverage ○ No Coverage

	Policy Coverage		Policy Stipulations					Support Provided			
Funder	Published Outputs	Data	Time Limits	DMP	Access / Sharing	Long-term curation	Monitoring	Guidance	Article Repository	Data Repository	Costs
AHRQ	●	●	●	●	●	◐	◐	◐	●	◐	◐
ASPR	●	●	●	●	●	●	●	◐	●	◐	◐
CDC	●	●	●	●	●	◐	●	◐	●	◐	◐
DOD	●	●	●	●	●	○	●	○	●	○	◐
DOE	●	●	●	●	●	◐	◐	◐	●	◐	◐
DOT	○		○						○		
FDA	●	●	●	●	●	◐	●	◐	●	◐	◐
NASA	●	●	●	●	●	◐	●	◐	●	◐	◐
NIH											◐
NIST	◐	●	○	●					○		
NSF	●	●		●	●	◐			●	●	●
USDA	●	◐				◐	○	○	●		●
USAID	○	●	○		◐		○	○	○		
USGS		●									
VA	◐			○		○	○				

Valen, Dan; Blanchat, Kelly (2015): Overview of OSTP Responses. fig**share**.
http://dx.doi.org/10.6084/m9.figshare.1367165
Retrieved 01:23, Apr 21, 2015 (GMT)

The Open Academic Tidal Wave

1. Recommended open access to scholarly papers of publicly funded research
2. Recommended open access to all digital outputs of publicly funded research
3. Mandated open access to scholarly papers of publicly funded research
4. Mandated open access to all digital outputs of publicly funded research
5. Enforced, mandated open access to scholarly papers of publicly funded research
6. Enforced, mandated open access to all digital outputs of publicly funded research

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5. *Enforced, mandated open access to scholarly papers of publicly funded research*
6. *Enforced, mandated open access to all digital outputs of publicly funded research*

BILL & MELINDA GATES FOUNDATION OPEN ACCESS POLICY

Data Underlying Published Research Results Will Be Accessible and Open Immediately. The foundation will require that data underlying the published research results be immediately accessible and open. This too is subject to the transition period and a 12-month embargo may be applied.

http://www.gatesfoundation.org/How-We-Work/General-Information/Open-Access-Policy

How do we get there?

- Lower the barrier to entry (busy, busy [busy, busy, busy] academics)
- Listen to our users! (Advisor program)
- Listen to our partners (institutions supporting compliance)

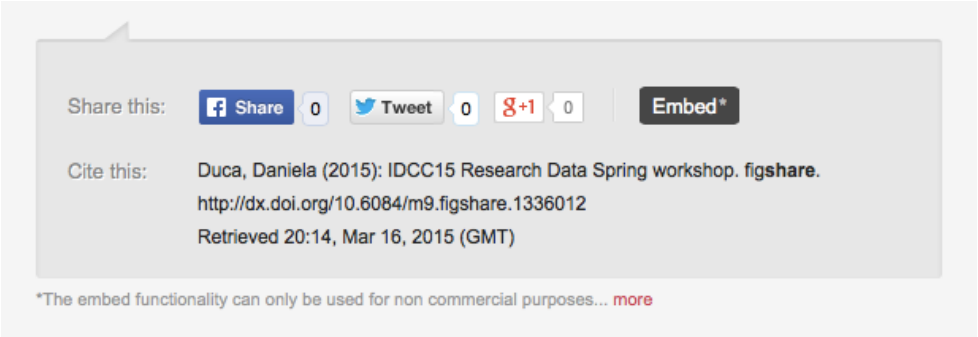
Source: https://studio.cul.columbia.edu/wp-content/uploads/2013/10/DMPWantedPoster_01.png

Repositories

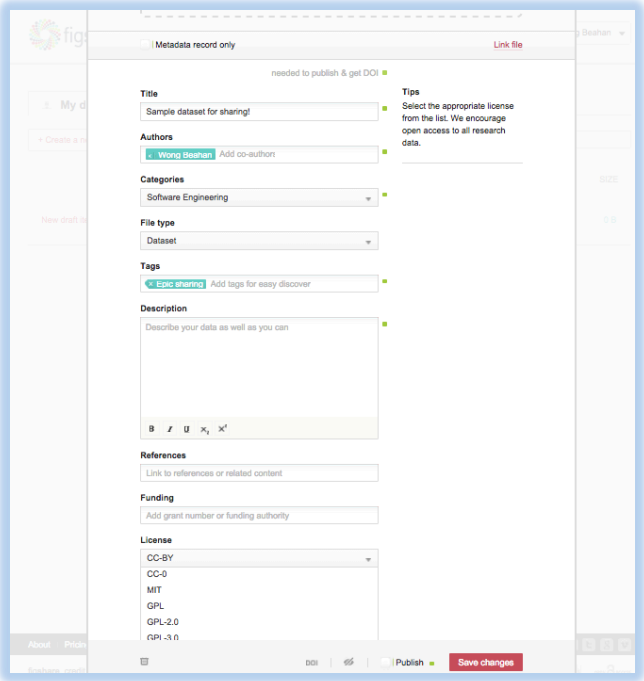
figshare
ESIP
PubMed
DBpedia
GitHub
dash
DATA SHARING MADE EASY
UNIVERSITY OF CALIFORNIA
datahub
publish, share, discover
Authorea
DRYAD

DSPACE
NCBI
DANS
Fedora™
CLARIN-D
UniProt
PLOS
F1000
FACULTY of 1000
3TU.Datacentrum
VAMDC consortium
knb
PubChem
zenodo
COS
CENTER FOR OPEN SCIENCE
The Dataverse Network™ Project
MORPHOBANK
HOMOLOGY OF PHENOTYPES OVER THE WEB
DataONE
Data Observation Network for Earth

Why DataCite/DOIs?



- Enabling easy reuse and verification of data
- Allowing the impact of data to be tracked
- Creating a scholarly structure that recognizes and rewards data producers



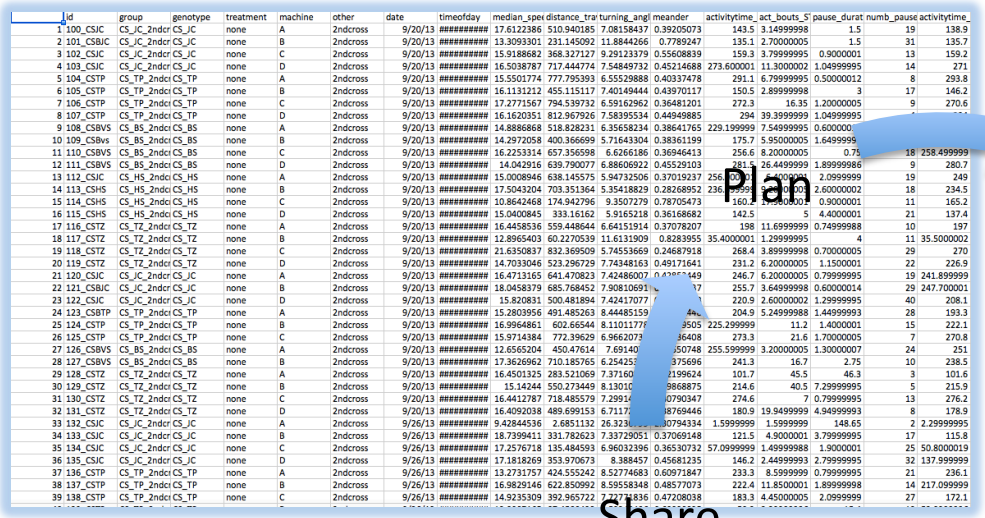
Source: https://www.datacite.org/services/cite-your-data.html

Why are APIs important?

The fig**share** API allows you to push data to fig**share**, or pull data out

This allows you to build applications on top of academic research and provide for uninterrupted workflows

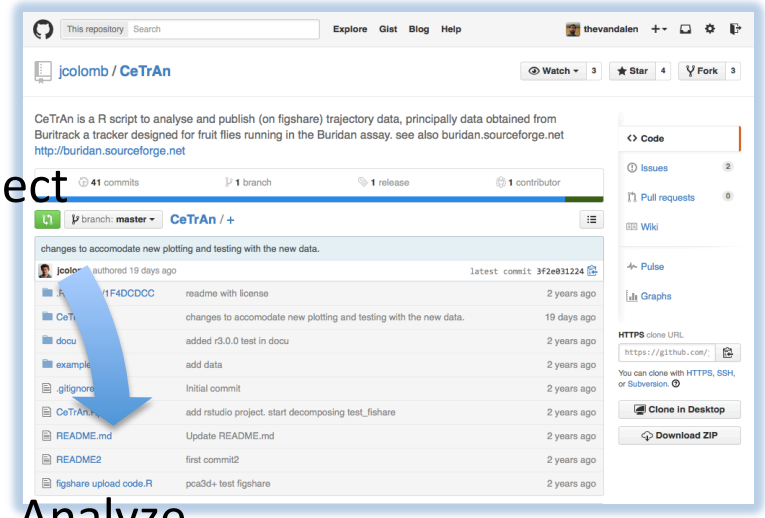
An R open science example…



	id	group	genotype	treatment	machine	other	date	timeofday	median_spe	distance_tra	turning_angl	meander	activitytime_	act_bouts_S	pause_durat	numb_pause	activitytime_
1	100_CSJC	CS_JC_2ndcr	CS_JC	none	A	2ndcross	9/20/13	##########	17.6122386	510.940185	7.08158437	0.39205073	143.5	3.14999998	1.5	19	138.9
2	101_CSBJC	CS_JC_2ndcr	CS_JC	none	B	2ndcross	9/20/13	##########	13.3093301	231.145092	11.8844266	0.7789247	135.1	2.70000005	1.5	31	135.7
3	102_CSJC	CS_JC_2ndcr	CS_JC	none	C	2ndcross	9/20/13	##########	15.9188682	368.327127	9.29123379	0.55608839	159.3	3.79999995	0.9000001	13	159.2
4	103_CSJC	CS_JC_2ndcr	CS_JC	none	D	2ndcross	9/20/13	##########	16.5038787	717.444774	7.54849732	0.45214688	273.600001	11.3000002	1.04999995	14	271
5	104_CSTP	CS_TP_2ndcr	CS_TP	none	A	2ndcross	9/20/13	##########	15.5501774	777.795393	6.55529888	0.40337478	291.1	6.79999995	0.50000012	8	293.8
6	105_CSTP	CS_TP_2ndcr	CS_TP	none	B	2ndcross	9/20/13	##########	16.1131212	455.115117	7.40149444	0.43970117	150.5	2.89999998	3	17	146.2
7	106_CSTP	CS_TP_2ndcr	CS_TP	none	C	2ndcross	9/20/13	##########	17.2771567	794.539732	6.59162962	0.36481201	272.3	16.35	1.20000005	9	270.6
8	107_CSTP	CS_TP_2ndcr	CS_TP	none	D	2ndcross	9/20/13	##########	16.1620351	812.967926	7.58395534	0.44949885	294	39.3999999	1.04999995	[illegible]	[illegible]
9	108_CSBVS	CS_BS_2ndcr	CS_BS	none	A	2ndcross	9/20/13	##########	14.8886868	518.828231	6.35658234	0.38641765	229.199999	7.54999995	0.600000	[illegible]	[illegible]
10	109_CSBvs	CS_BS_2ndcr	CS_BS	none	B	2ndcross	9/20/13	##########	14.2972058	400.366699	5.71643304	0.38361199	175.7	5.95000005	1.6499999	[illegible]	[illegible]
11	110_CSBVS	CS_BS_2ndcr	CS_BS	none	C	2ndcross	9/20/13	##########	16.2253314	657.356598	6.6266186	0.36946413	256.6	8.20000005	0.75	18	258.499999
12	111_CSBVS	CS_BS_2ndcr	CS_BS	none	D	2ndcross	9/20/13	##########	14.042916	639.790077	6.88606922	0.45529103	281.5	26.4499999	1.89999986	9	280.7
13	112_CSJC	CS_HS_2ndcr	CS_HS	none	A	2ndcross	9/20/13	##########	15.0008946	638.145575	5.94732506	0.37019237	256.[illegible]	[illegible]	2.0999999	19	249
14	113_CSHS	CS_HS_2ndcr	CS_HS	none	B	2ndcross	9/20/13	##########	17.5043204	703.351364	5.35418829	0.28268952	236.[illegible]	[illegible]	2.60000002	18	234.5
15	114_CSHS	CS_HS_2ndcr	CS_HS	none	C	2ndcross	9/20/13	##########	10.8642468	174.942796	9.3507279	0.78705473	160.[illegible]	[illegible]	0.9000001	11	165.2
16	115_CSHS	CS_HS_2ndcr	CS_HS	none	D	2ndcross	9/20/13	##########	15.0400845	333.16162	5.9165218	0.36168682	142.5	5	4.4000001	21	137.4
17	116_CSTZ	CS_TZ_2ndcr	CS_TZ	none	A	2ndcross	9/20/13	##########	16.4458536	559.448644	6.64151914	0.37078207	198	11.6999999	0.74999988	10	197
18	117_CSTZ	CS_TZ_2ndcr	CS_TZ	none	B	2ndcross	9/20/13	##########	12.8965403	60.2270539	11.6131909	0.8283955	35.4000001	1.29999995	4	11	35.5000002
19	118_CSTZ	CS_TZ_2ndcr	CS_TZ	none	C	2ndcross	9/20/13	##########	21.6350837	832.369509	5.74553669	0.24687918	268.4	3.89999998	0.70000005	29	270
20	119_CSTZ	CS_TZ_2ndcr	CS_TZ	none	D	2ndcross	9/20/13	##########	14.7033046	523.296729	7.74348163	0.49171641	231.2	6.20000005	1.1500001	22	226.9
21	120_CSJC	CS_JC_2ndcr	CS_JC	none	A	2ndcross	9/20/13	##########	16.4713165	641.470823	7.42486007	0.4[illegible]149	246.7	6.20000005	0.79999995	19	241.899999
22	121_CSBJC	CS_JC_2ndcr	CS_JC	none	B	2ndcross	9/20/13	##########	18.0458379	685.768452	7.90810691	[illegible]17	255.7	3.64999998	0.60000014	29	247.700001
23	122_CSJC	CS_JC_2ndcr	CS_JC	none	D	2ndcross	9/20/13	##########	15.820831	500.481894	7.42417077	[illegible]	220.9	2.60000002	1.29999995	40	208.1
24	123_CSBTP	CS_TP_2ndcr	CS_TP	none	A	2ndcross	9/20/13	##########	15.2803956	491.485263	8.44485159	4[illegible]	204.9	5.24999988	1.44999993	28	193.3
25	124_CSTP	CS_TP_2ndcr	CS_TP	none	B	2ndcross	9/20/13	##########	16.9964861	602.66544	8.11011778	[illegible]9505	225.299999	11.2	1.4000001	15	222.1
26	125_CSTP	CS_TP_2ndcr	CS_TP	none	C	2ndcross	9/20/13	##########	15.9714384	772.39629	6.9662073	[illegible]6408	273.3	21.6	1.70000005	7	270.8
27	126_CSBVS	CS_BS_2ndcr	CS_BS	none	A	2ndcross	9/20/13	##########	12.6565204	450.47614	7.69140[illegible]	[illegible]50748	255.599999	3.20000005	1.30000007	24	251
28	127_CSBVS	CS_BS_2ndcr	CS_BS	none	B	2ndcross	9/20/13	##########	17.3626962	710.185765	6.254253[illegible]	[illegible]375696	241.3	16.7	2.75	10	238.5
29	128_CSTZ	CS_TZ_2ndcr	CS_TZ	none	A	2ndcross	9/20/13	##########	16.4501325	283.521069	7.37160[illegible]	[illegible]2199624	101.7	45.5	46.3	3	101.6
30	129_CSTZ	CS_TZ_2ndcr	CS_TZ	none	B	2ndcross	9/20/13	##########	15.14244	550.273449	8.13010[illegible]	[illegible]9868875	214.6	40.5	7.29999995	5	215.9
31	130_CSTZ	CS_TZ_2ndcr	CS_TZ	none	C	2ndcross	9/20/13	##########	16.4412787	718.485579	7.29916[illegible]	[illegible]0790347	274.6	7	0.79999995	13	276.2
32	131_CSTZ	CS_TZ_2ndcr	CS_TZ	none	D	2ndcross	9/20/13	##########	16.4092038	489.699153	6.71173[illegible]	[illegible]8769446	180.9	19.9499999	4.94999993	8	178.9
33	132_CSJC	CS_JC_2ndcr	CS_JC	none	A	2ndcross	9/26/13	##########	9.42844536	2.6851132	26.323[illegible]	[illegible]0794334	1.5999999	1.5999999	148.65	2	2.29999995
34	133_CSJC	CS_JC_2ndcr	CS_JC	none	B	2ndcross	9/26/13	##########	18.7399411	331.782623	7.33729051	0.37069148	121.5	4.9000001	3.79999995	17	115.8
35	134_CSJC	CS_JC_2ndcr	CS_JC	none	C	2ndcross	9/26/13	##########	17.2576718	135.484593	6.96032396	0.36530732	57.0999999	1.49999988	1.9000001	25	50.8000019
36	135_CSJC	CS_JC_2ndcr	CS_JC	none	D	2ndcross	9/26/13	##########	17.1818269	353.970673	8.388457	0.45681235	146.2	2.44999993	2.79999995	32	137.999999
37	136_CSTP	CS_TP_2ndcr	CS_TP	none	A	2ndcross	9/26/13	##########	13.2731757	424.555242	8.52774683	0.60971847	233.3	8.5999999	0.79999995	21	236.1
38	137_CSTP	CS_TP_2ndcr	CS_TP	none	B	2ndcross	9/26/13	##########	16.9829146	622.850992	8.59558348	0.48577073	222.4	11.8500001	1.89999998	14	217.099999
39	138_CSTP	CS_TP_2ndcr	CS_TP	none	C	2ndcross	9/26/13	##########	14.9235309	392.965722	7.7[illegible]1836	0.47208038	183.3	4.45000005	2.0999999	27	172.1

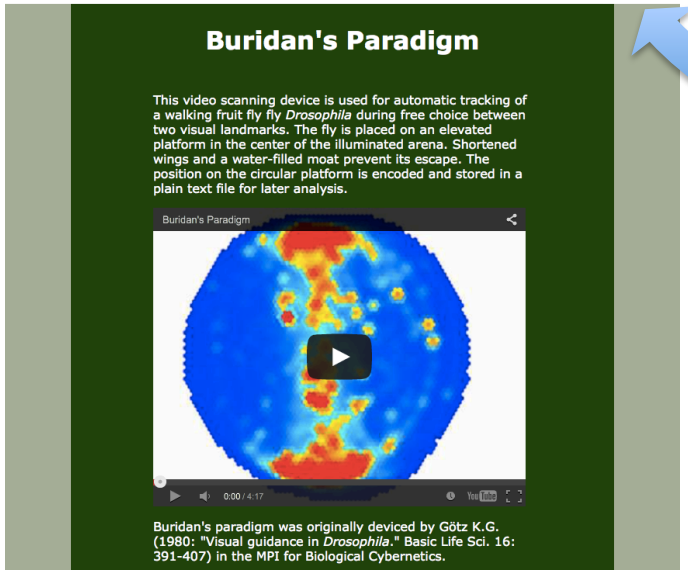
Plan

Collect



Share

Analyze



Publish

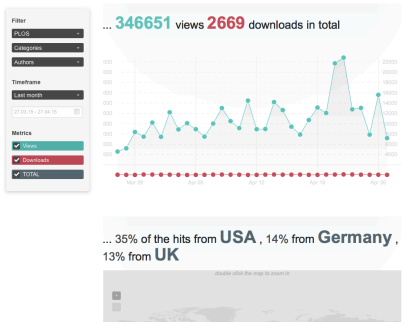
Open first, data first, and incentivizing along the way… But catering to both users and institutions (and publishers, too)

Researchers

- Manage research
- Seamless integration
- Simplicity
- Add-on features
- Showcase research
- Research impact (CREDIT)
- Citation count

Institutions

- Capturing generated research outputs
- Preservation of data
- Correct metadata
- Impact of institution



Your Infrastructure

DURACLOUD

Arkivum
Every bit archived

amazon web services™ S3

Advocate

Source: http://www.subtraction.com/2015/04/07/after-youve-watched-john-oliver/