



OUT OF THE WOODS

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Ash dieback: a lethal disease of ash trees



Hymenoscyphus pseudoalbidus
(Chalara fraxinea)



Across the country in a year



Science is too slow in emergencies

Structure of
science inhibits
collaboration and
sharing



crowdsourced analyses, open access data

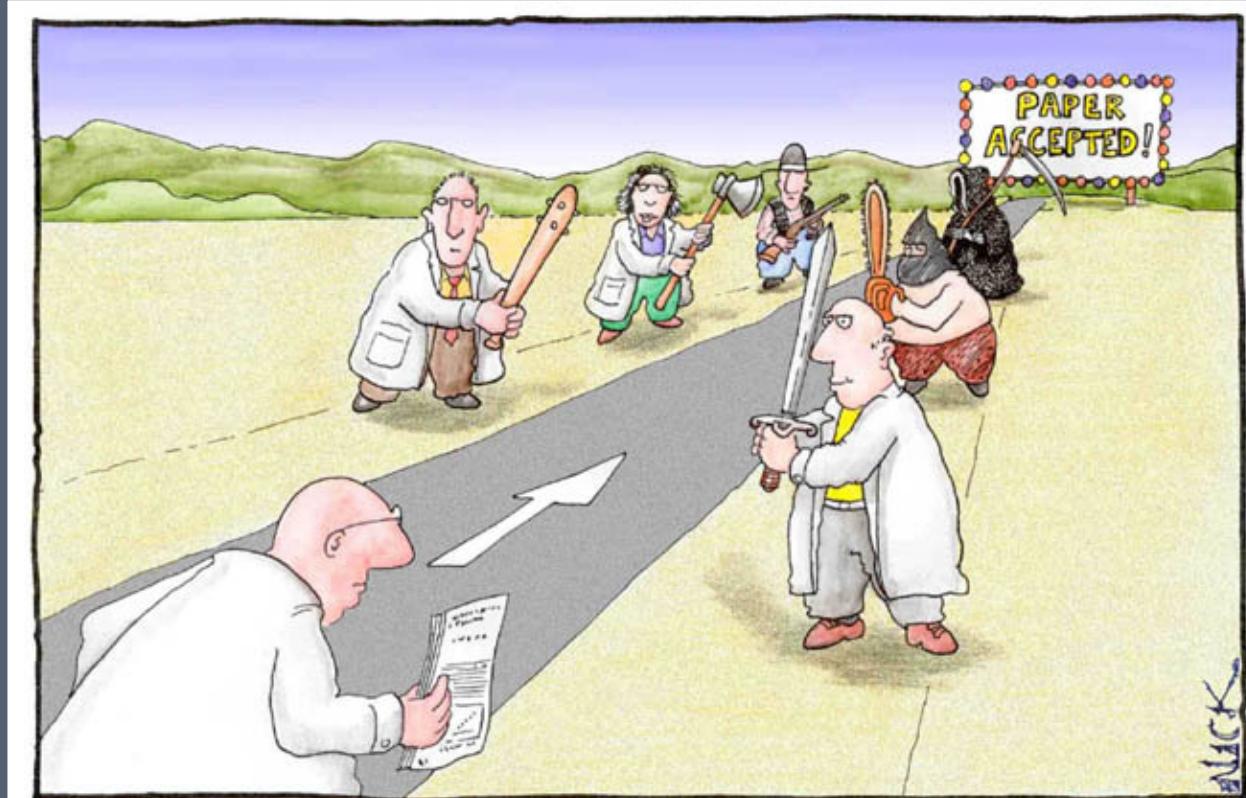
let the experts at
the data



“two heads are better than one”

Live peer review – a global on-line lab meeting

let the experts
review the results
as they appear –
live filtering



Most scientists regarded the new streamlined
peer-review process as 'quite an improvement.'

OADB: an initiative to fast-forward collaboration on Chalara dieback of ash

OpenAshDieBack

A hub for crowdsourcing information and genomic resources for Ash Dieback

[Ash dieback](#) | [Crowdsourcing](#) | [How to help](#) | [FAQ and Contact Us](#)



A hub for finding and sharing genomics data on Ash and Ash Dieback

Welcome to Open Access Data and Crowdsourced analyses!

On this website you'll be able to get data to do your own analyses on ash and ash dieback.
You can see the results of other peoples work as soon as it is available and share your own discoveries in the same way.

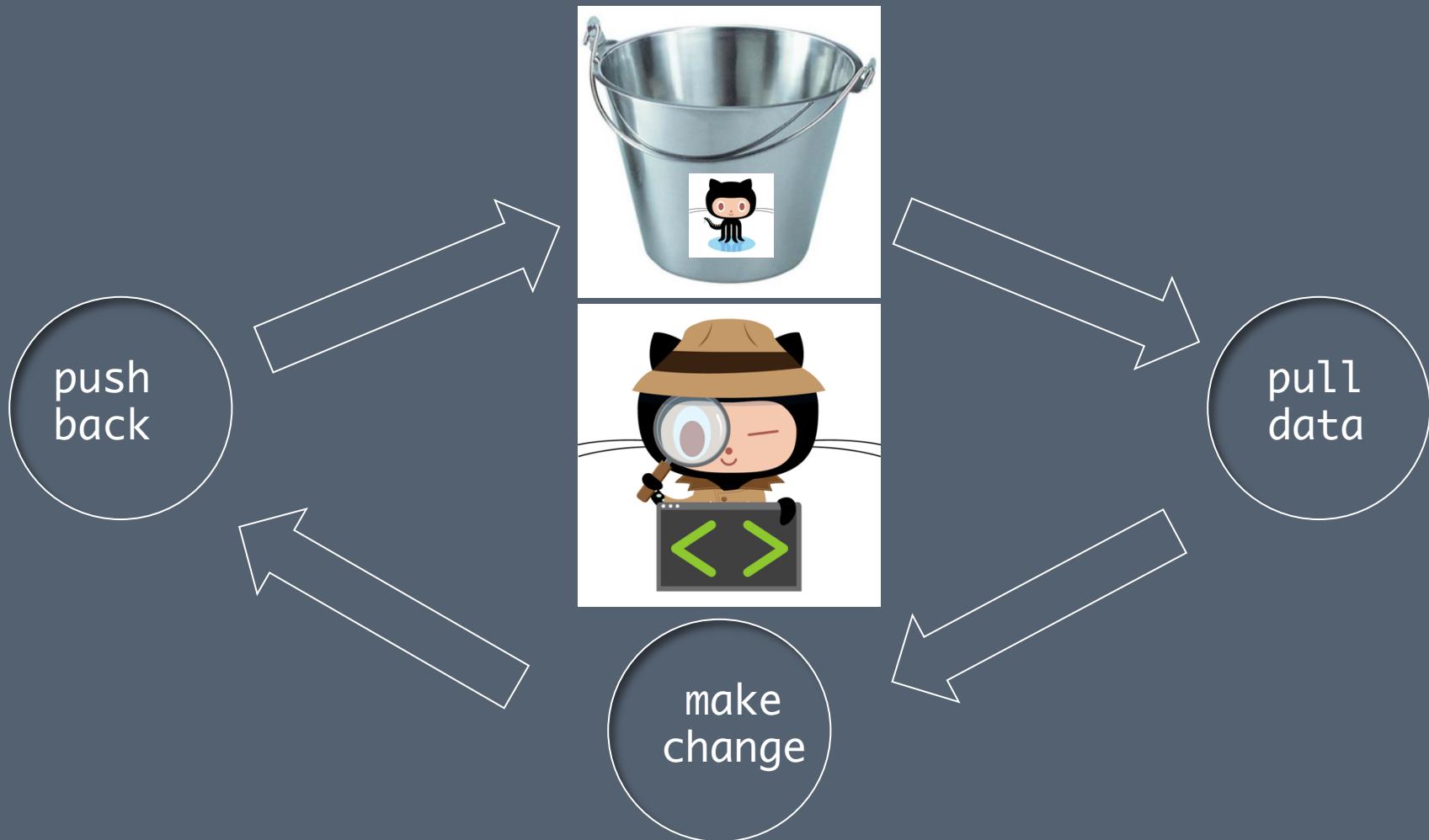
You will always get full credit for your work and in doing so contribute to a real community effort.

<http://oadb.ts1.ac.uk>

Attribution of contribution with GitHub



version management and contribution tracking



PUBLIC



ash-dieback-crowdsource / data

forked from danmaclean/crowdsr...

[Pull Request](#)[Unwatch](#)

4



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[Code](#)[Network](#)[Pull Requests 0](#)[Issues 1](#)[Wiki](#)[Graphs](#)[Settings](#)Repository for crowd-sourced data from genomics analysis of the UK ash dieback (*Chalara fraxinea*) outbreak 2012[Clone in Mac](#)[ZIP](#)[HTTP](#)[SSH](#)[Git Read-Only](#)<https://github.com/ash-dieback-crowdsource/data.git>

Read+Write access

branch: **master** **Files**[Commits](#)[Branches 2](#)[Tags](#)[data / ash_dieback /](#) [History](#)

Added TopHat alignment of AT1 reads against KW1 genome assembly.

ethering authored 4 days ago

latest commit 1d149eef

..

[chalara_fraxinea](#) 4 days ago Added TopHat alignment of AT1 reads against KW1 genome assembly. [ethering] [fraxinus_excelsior](#) 4 days ago Added Trinity assembly of ATU1 and blast against eukaryotic database [DGOS] [h_albidus](#) 3 months ago Added metadata definitions [danmaclean] [h_pseudoalbidus](#) 3 months ago Added metadata definitions [danmaclean] [mixed_material](#) 4 days ago Added MAT locus analysis of AT1 and AT2 assembled transcripts [DGOS] [alignment.README](#) 3 months ago Added metadata definitions [danmaclean] [annotation.README](#) 3 months ago Added metadata definitions [danmaclean] [assembly.README](#) 2 months ago TSL/JIC first data added [danmaclean] [blast.README](#) 2 months ago Add blast.README [rockyoshida] [org.README](#) 3 months ago Added metadata definitions [danmaclean] [reads.README](#) 2 months ago TSL/JIC first data added [danmaclean] [sequences.README](#) 2 months ago TSL/JIC first data added [danmaclean] [strain.README](#) 3 months ago Added metadata definitions [danmaclean]<https://github.com/ash-dieback-crowdsource/data>

COMMENTARY

Open Access

Crowdsourcing genomic analyses of ash and ash dieback – power to the people

Dan MacLean^{1*}, Kentaro Yoshida¹, Anne Edwards², Lisa Crossman³, Bernardo Clavijo³, Matt Clark³, David Swarbreck³, Matthew Bashton⁴, Patrick Chapman⁵, Mark Gijzen⁵, Mario Caccamo³, Allan Downie², Sophien Kamoun¹ and Diane GO Saunders¹

doi:10.1186/2047-217X-2-2

Github Stats

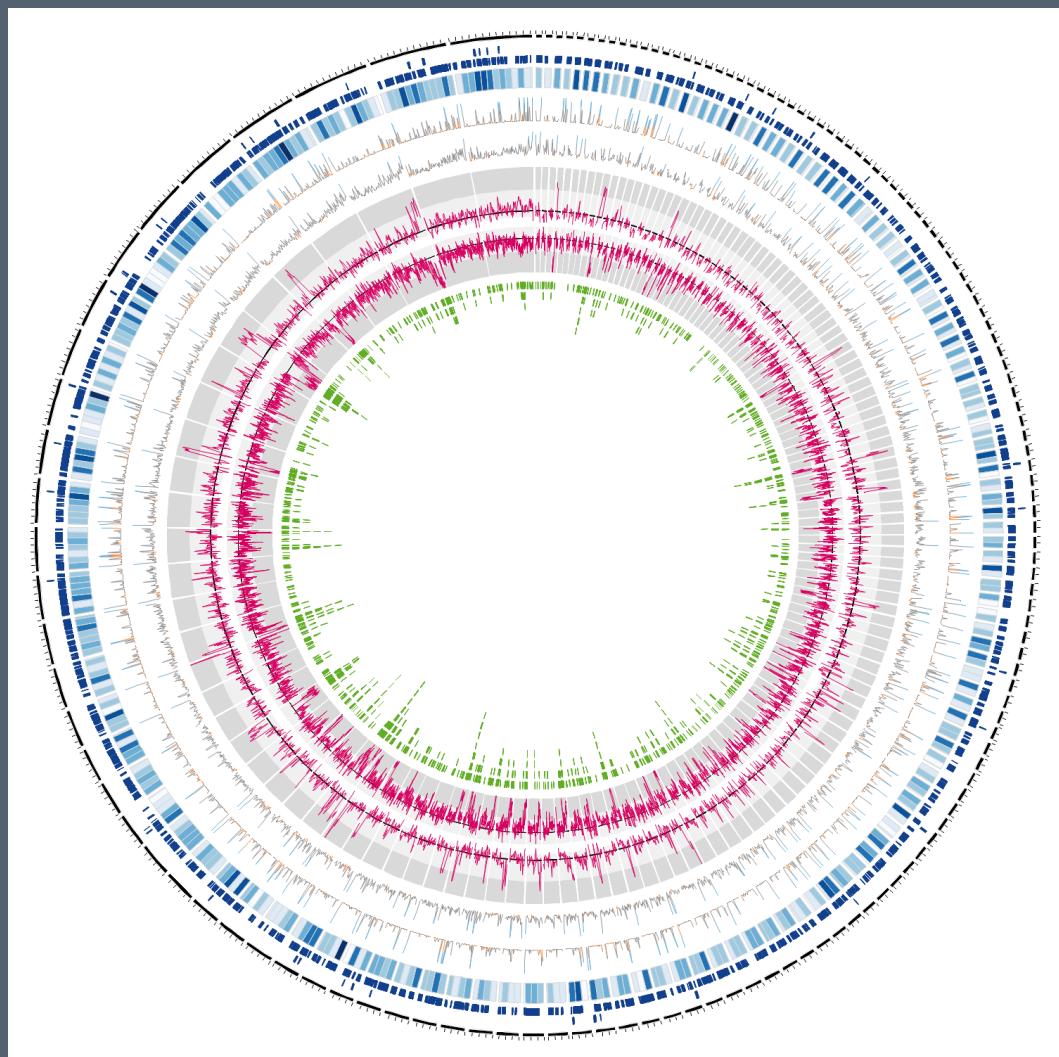
Number of signups: **40**

Directory size (not including reads): **8.8 Gb**

Number of commits: **165** (*from 13 individuals*)

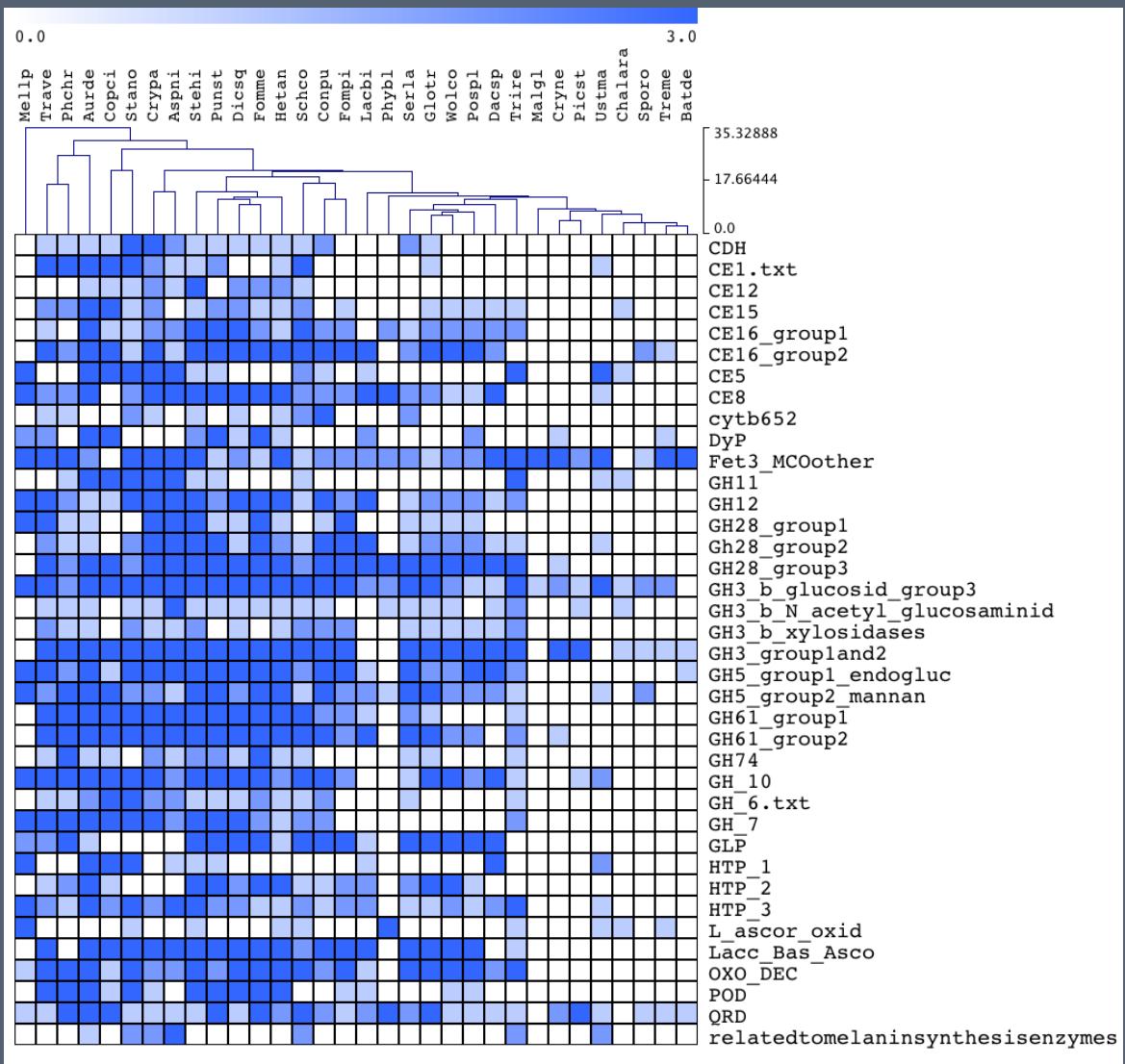
Number of posts to blog/wiki: **30**

Chalara genome has AT-rich repeat rich structure



<http://dx.doi.org/10.6084/m9.figshare.791640>

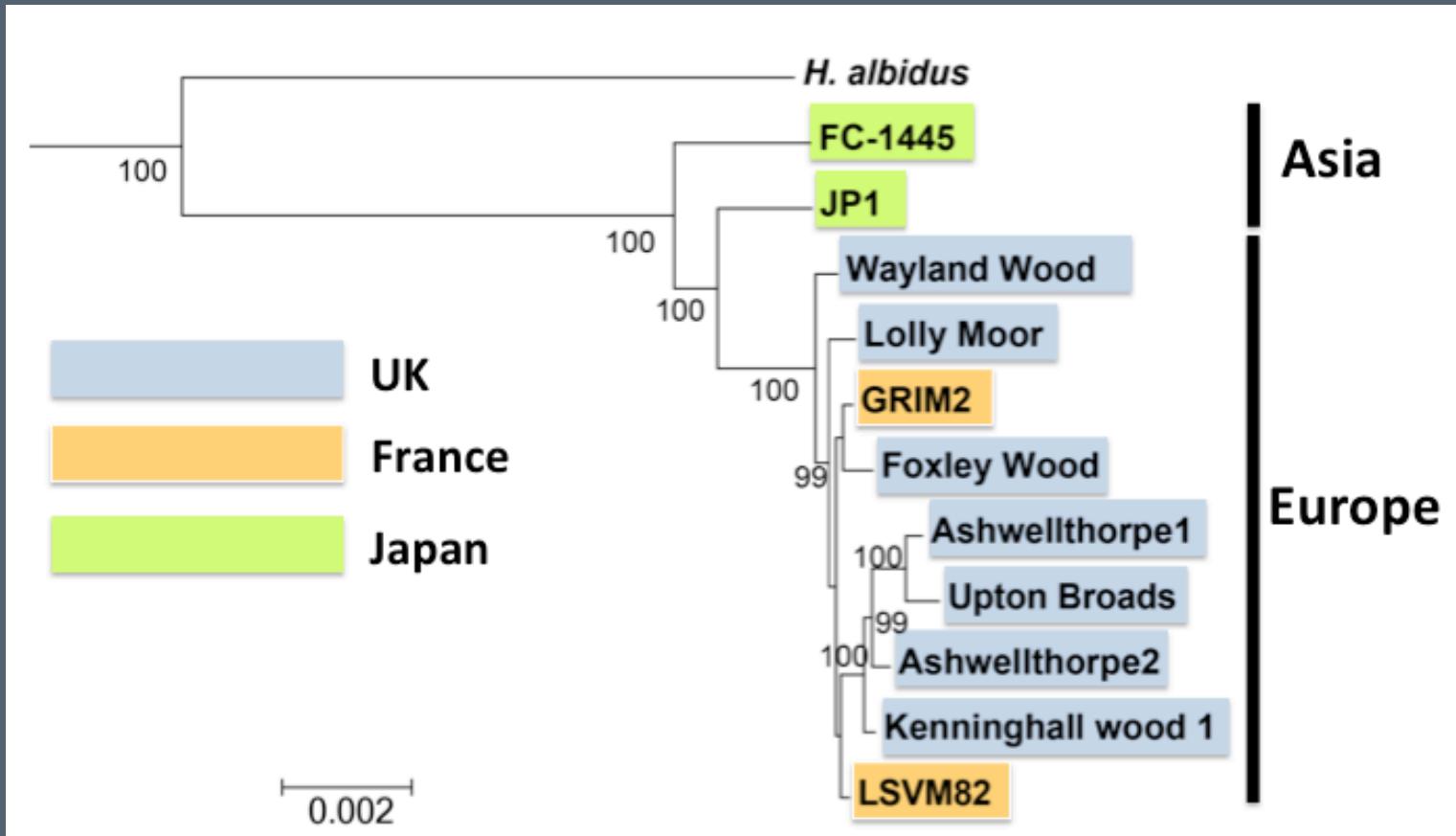
Chalara lacks wood-digestion enzymes



<http://dx.doi.org/10.6084/m9.figshare.791635>



European isolates are distantly descended from Asian ancestor



<http://oadb tsl.ac.uk/?p=648>

NORNEX – an international ash dieback consortium

THE SAINSBURY LABORATORY



Crowdsourcing future: building better communities

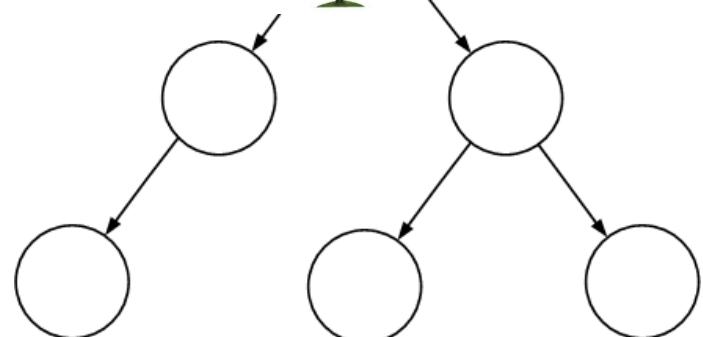
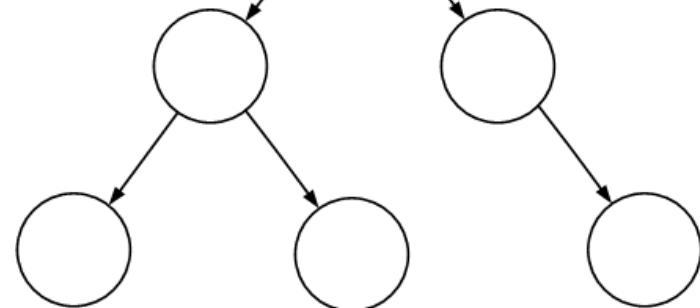
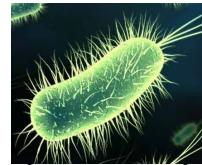




gee-fu - multi-organism feature version DB

assemblies

annotations



https://github.com/wookouuk/gee_fu

doi:10.1093/bioinformatics/btr442

<https://geefu.oadb.tsl.ac.uk>



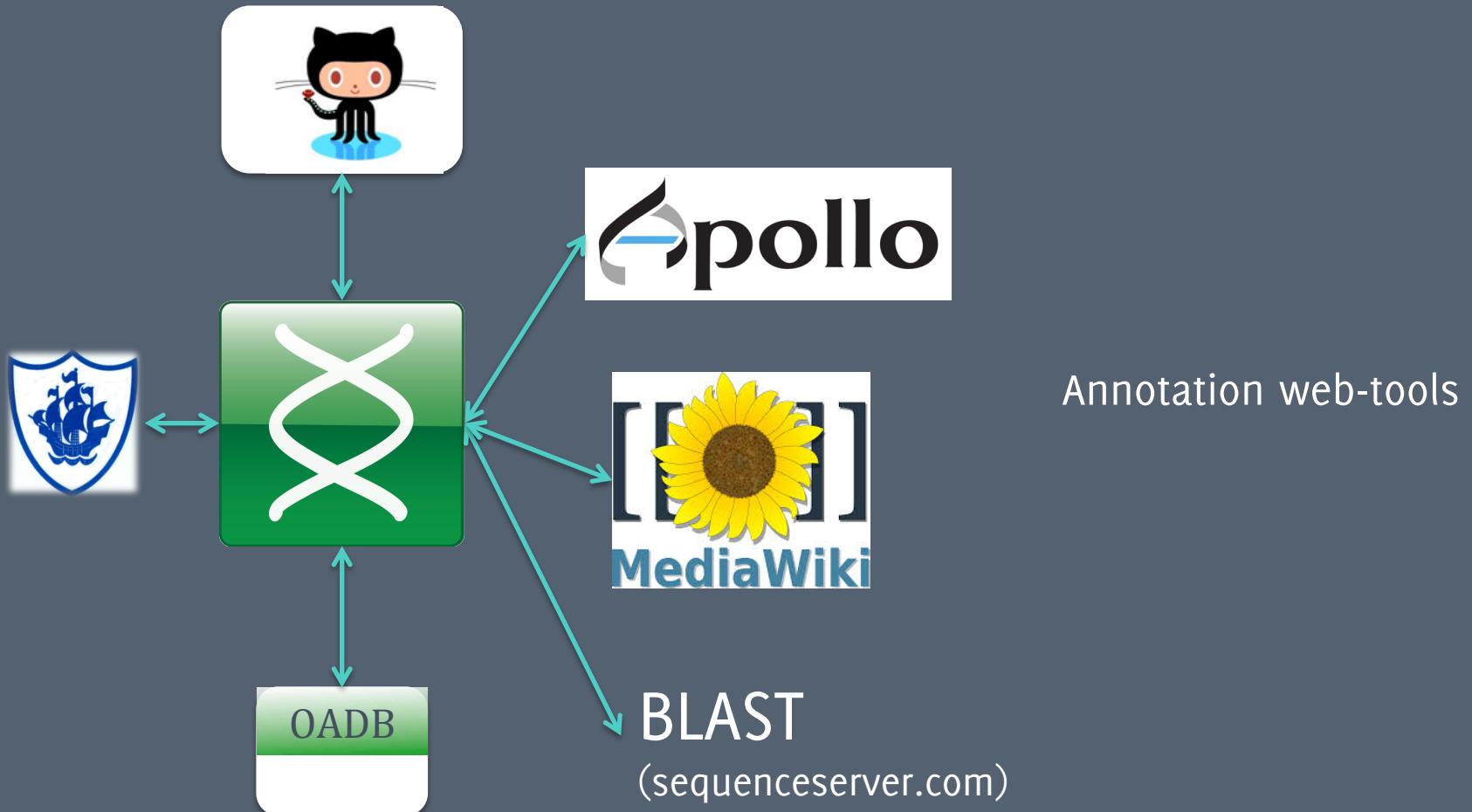
doi:10.1186/1751-0473-7-6



bio-samtools

doi:10.1093/bioinformatics/btt294

Extended crowdsource infrastructure



certification of contribution through badge collections



<http://openbadges.org>

Merit: A web app for issuing Mozilla Open Badges built on Java Play Framework 2
<https://github.com/wookoouk/merit>



Citizen Science – People Power

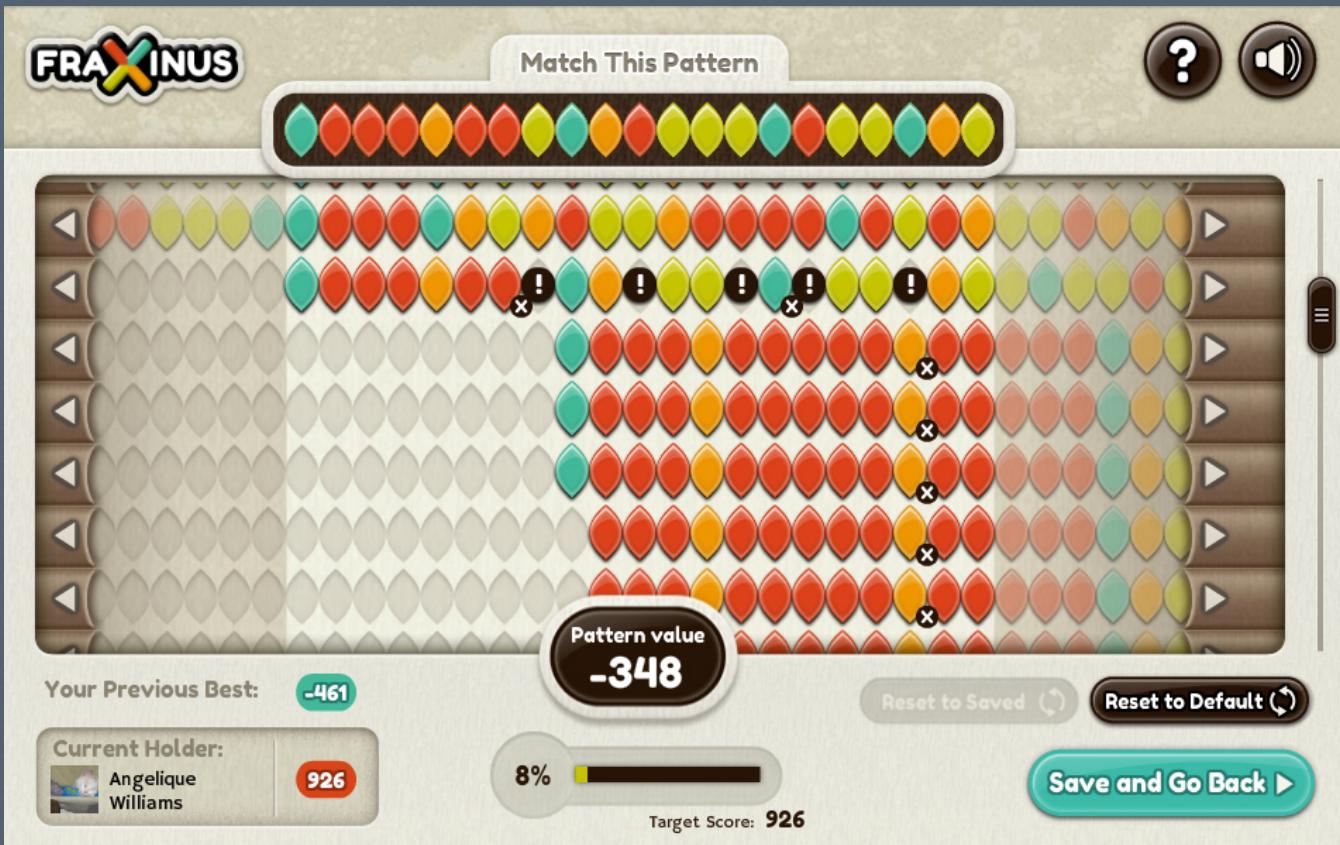


humans are smart, numerous and
love games





<http://apps.facebook.com/fraxinus>



The Sainsbury Laboratory

TSL

 **BBSRC**
bioscience for the future

TGAC 
The Genome Analysis Centre™

Built by:
teamCooper
DIGITAL AMUSEMENTS

competition helps re-analysis

The screenshot displays the user interface of the Fraxinus mobile game. At the top left is the "Friends Leaderboard" showing the top 5 players:

Rank	User	Score	Type
1	Emma Cooper	32	Fresh
2	Angelique Williams	14	Steal
3	Simon Morris	11	Steal
4	Margaret Cole	10	Steal
5	John Hunter	9	Steal

Your Rank: 1 (Emma Cooper, 32, Fresh)

Notification: 1 of 34
Claimed!
Simon Morris has claimed a new pattern with 1840 points.
Steal Pattern

In the center is the game logo featuring a stylized tree with colorful leaves and the word "FRAXINUS". Below the logo are three categories of patterns:

- Fresh Pattern (Green circle)
- Last Pattern (Teal circle)
- Steal Pattern (Orange circle)

At the bottom are social sharing buttons: Invite, Share, and Tweet.

To the right is the "Your Patterns" section, which shows a grid of 15 claimed patterns. Each pattern is represented by a circular icon with a tree and its score:

Pattern Type	Score
Fresh	-92
Fresh	28
Fresh	1327
Last	276
Last	25
Last	873
Fresh	807
Fresh	865
Fresh	704
Fresh	807
Fresh	865
Fresh	704
Fresh	807
Fresh	865
Fresh	704

Below the grid are summary statistics: Patterns Claimed: 15, Bonus Points: 17, Total Score: 32.

Lots of people are playing

- >18 k unique players (36k visits)
- 126 different countries
- >100 players at a time

Each of 10, 000 patterns played –
some retired

Average game time – 18mins

The image shows a Facebook mobile interface displaying the "World Leaderboard". The top navigation bar includes the Facebook logo, a search bar, and social sharing icons. Below the header, the title "World Leaderboard" is centered above a list of five players. Each player entry consists of a rank (1-5), a profile picture, the player's name, their score (e.g., 1031), and a "Steal" button. The bottom section of the screen displays the user's rank and a "Your Rank:" input field, along with a "Invite Your Friends" button and a "Fresh" badge.

Rank	Player	Score	Action
1	Ash Dieback	1031	Steal
2	Alistair Denholm	448	Steal
3	Tom Carlton	385	Steal
4	Sarah West	371	Steal
5	Hannah Cornell	364	Steal

Your Rank: _____

Invite Your Friends

The game of science needs to change to be useful
in emergencies



acknowledgements



Allan Downie
Anne Edwards



Mario Caccamo
Bernado Clavijo
David Swarbreck

Martin Page
Graham Etherington

Sophien Kamoun
Kentaro Yoshida
Diane Saunders
Suomeng Dong
Joe Win
Daniel Bunting
Rachael Glover

Team Cooper

Thomas Down

everyone on
oadb.tsl.ac.uk

All players of Fraxinus



All links in this talk

<http://tinyurl.com/dan-maclean>

