

How hackathons can help find innovative solutions to important problems

**Health
Hack**

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*AHHA Data and Innovation Collaboration Network Meeting
6th December, Canberra*

- HealthHack is a 48-hour hackathon aimed at helping medical researchers, health professionals and students to find digital solutions to their problems

hack·a·thon

/ˈhæke,THän/

noun informal

noun: hackathon; plural noun: hackathons

- an event, typically lasting several days, in which a large number of people meet to engage in collaborative computer programming.
"a series of 48-hour hackathons to build new web and mobile services"

Origin

ENGLISH

hack

ENGLISH

marathon

→ hackathon

1990s

1990s: from *hack*¹, on the pattern of *marathon*.



What is HealthHack?

- HealthHack is the Open Knowledge Australia event and it is not for profit, organised by volunteers
- First event organised in Melbourne in 2013 by Maia Sauren, biomedical engineer turned software consultant, inspired by GovHack
- National event in 2016 held in Melbourne (4th), Sydney (3rd), Brisbane (2nd), Perth (2nd) and Canberra (1st)
- Previous years had independently run local events → changes in the organisation (national lead organisers, introduction of national and local sponsors, etc...)

- Each site has a local team of organisers with a high level of autonomy → responsibilities include finding an appropriate venue for the event, problem wrangling, advertising and engaging with the community, seeking sponsors, etc..
- The event is free for all the participants → relying on sponsor support to cover for the costs of the event (catering, prizes, stationery, venue...) → in-kind or financial contribution
- Organisers & Participants = Volunteers (time donation)

Canberra



Sydney



Brisbane



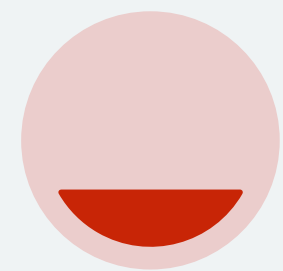
Melbourne



Perth

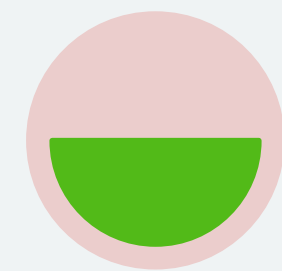


- Important stages in the hackathon from the start on Friday evening to the end Sunday afternoon/evening:



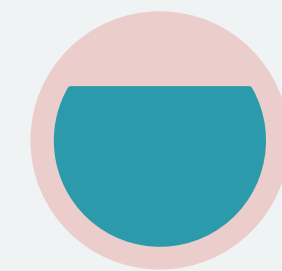
Idea Pitch

Friday evening:
Experts are invited to pitch their ideas to hackers (programmers, developers, data scientists, designers, etc)



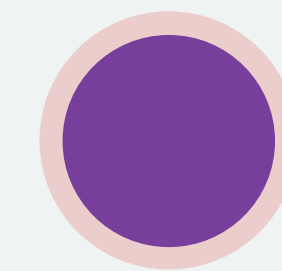
Team formation

Friday evening:
Participants form a team around an idea, based on their skills and interest in the topic (not every presenter ends up with a team...)



Hacking

Sat-Sun:
Each expert works closely during the weekend to find a satisfying solution for the problem in the given timeframe



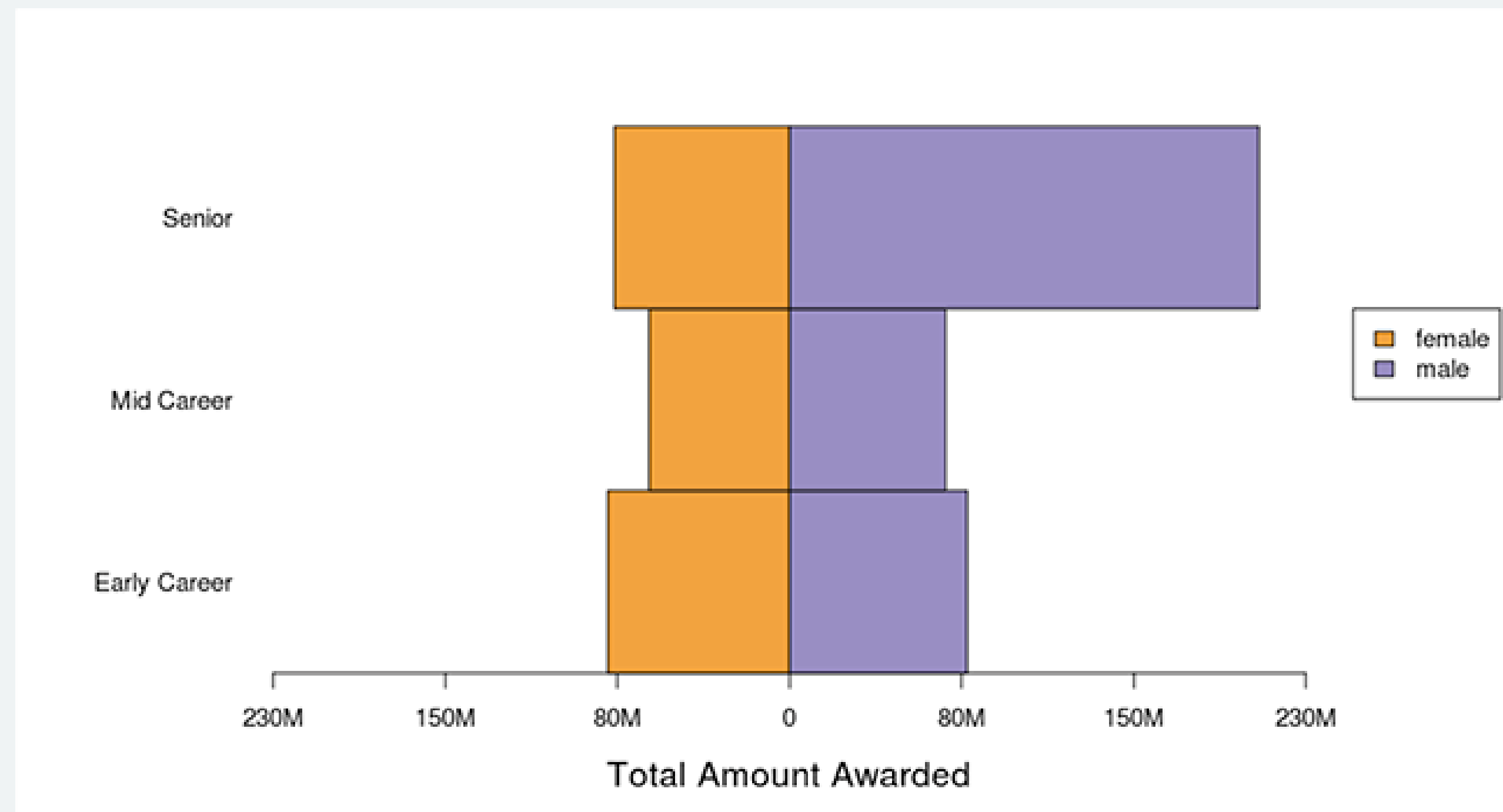
Final Pitch

Sunday:
Teams present their results to the judging panel. Best teams win prizes and eternal glory.



Problems presented at HealthHack over the years:

- **VizMyGrant** (Melbourne, 2014): Easy-to-use “viewing platform” for the NHMRC funding landscape



Problems presented at HealthHack over the years:

- **Girror** (Melbourne, 2014): Flexible smartphone app platform for research questions that link mood to behavioural decision-making (*gambling mirror*)
- Explore your Genome and Epigenome in an Immersive Virtual Space (Sydney, 2015)
- Antibiotic Usage Data: Assisting clinicians to improve prescribing (Perth, 2015)
- **PainPal** (Brisbane, 2015): Real-time pain management tool
- **MDbox** (Brisbane, 2015): Repository and analysis toolkit for molecular dynamics simulations

Challenges Canberra 2016

- **CITeX:** Automatically removing citation duplicates with 99.7% accuracy and detecting academic fraud (*Best Team Overall*)
- **Impulse:** Using chatbots to make better decisions for your future self or how to stop drinking, smoking and eating too much (*Best Commercial Potential*)
- **TeamX:** Simple, accurate, and open source 3D modelling for radiotherapy doctors (*Best Design*)
- **Simplify:** Improving the NDIS experience for users, suppliers and the government with a multifaceted marketplace (*Spirit of HealthHack*)
- **SeedID:** Automated image processing for biology (counting objects in an image of seeds, bacterial cultures, etc)
- **SP4MRI:** Applying signal processing techniques to improve MRI

Challenges Brisbane 2016

Illustrations by Dr. Sue Pillans (www.druepillans.com, @suepillans)

Over-treatment in the
MARKET for DENTAL
SERVICES



University of Old



STAR WARS

PERTH & BRISBANE

JAZZ
HANDS
for hearing
impaired

"other people's
SOLUTIONS
just don't work"



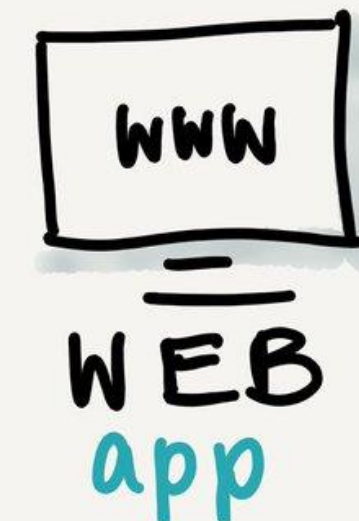
Helping those with
Neurodiversity to
Navigate Built
Environ

Mat
Inst

POPULATION
AGEING

SUPER FRIENDS against
SUPER BUGS!

minION FAST data:

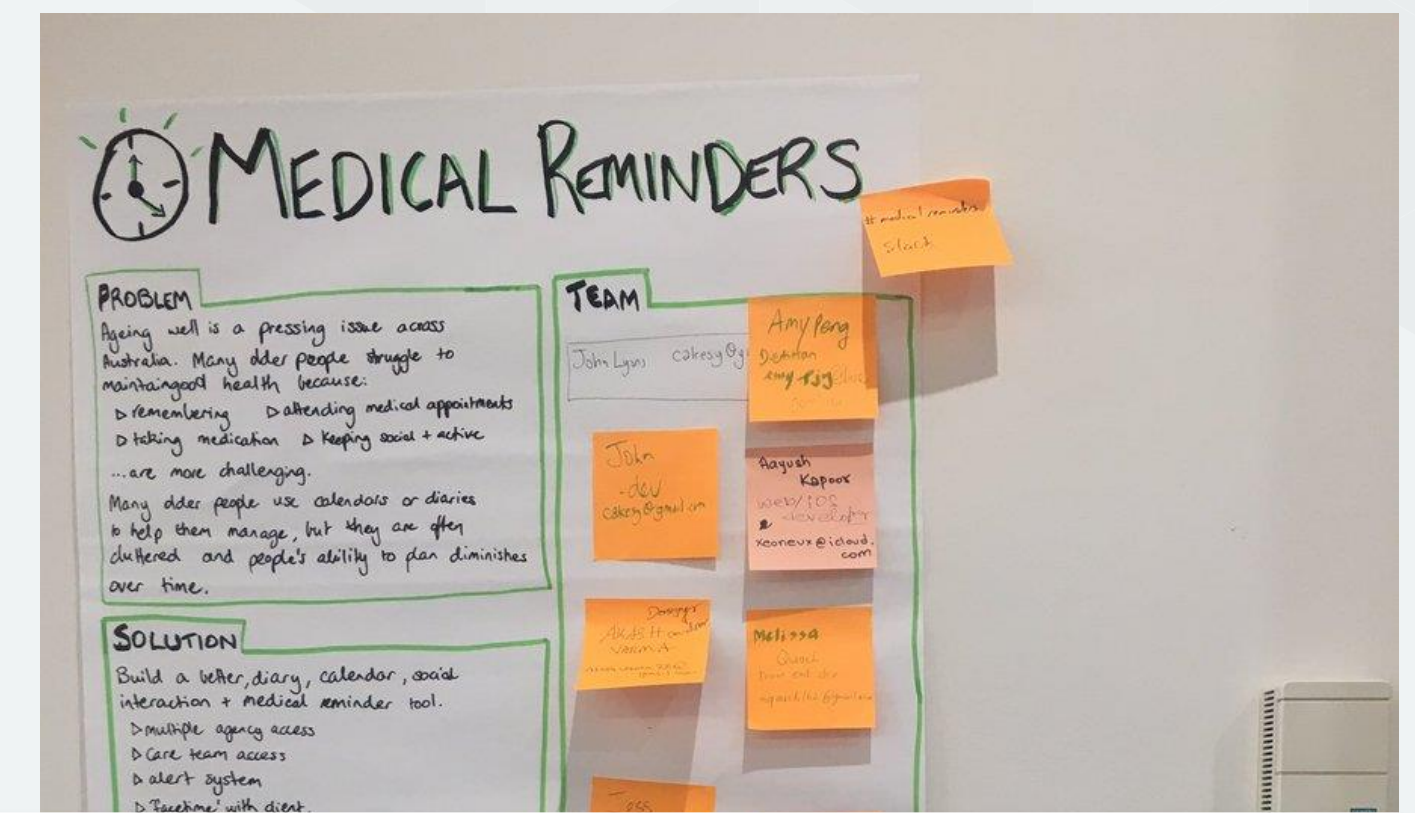
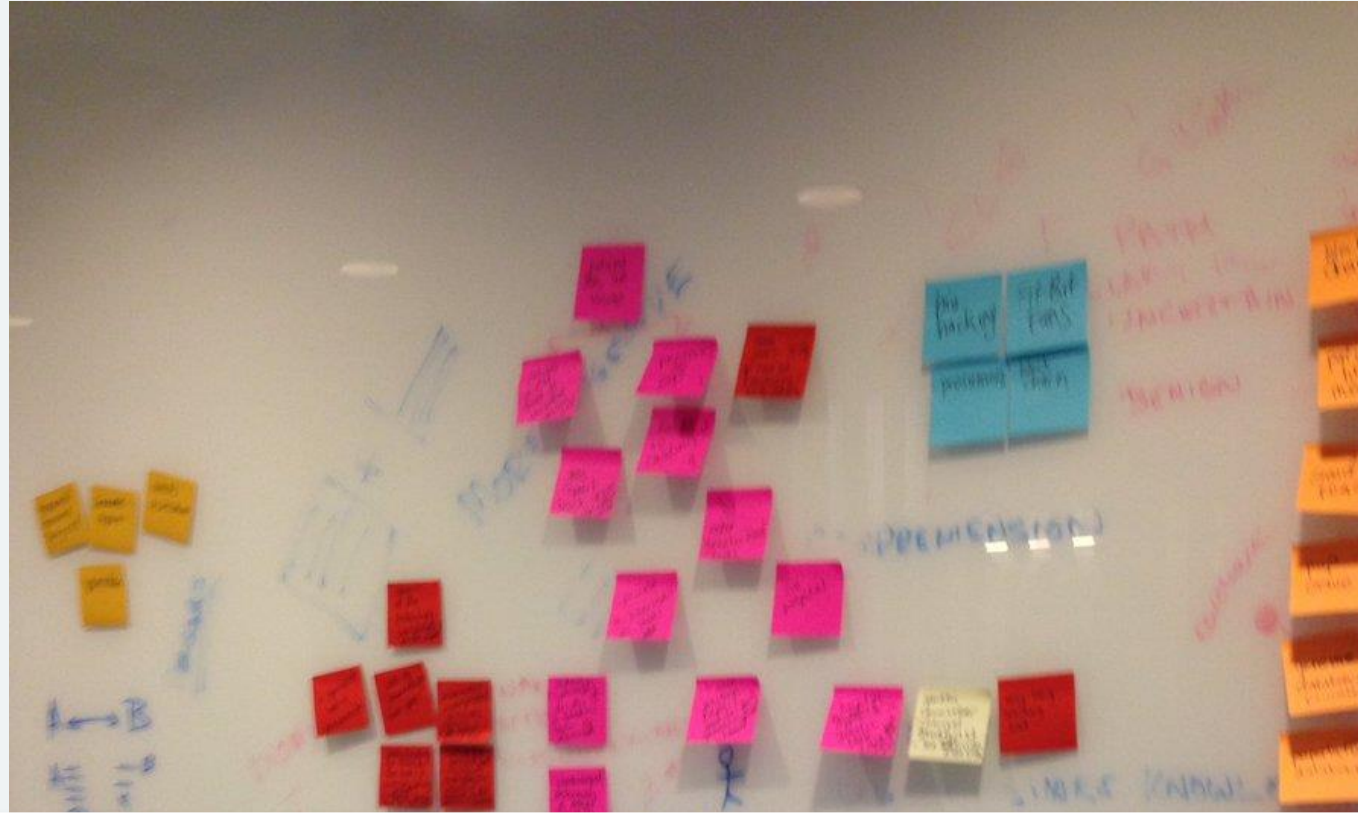


"that anyone can
use"

SO QUICK!

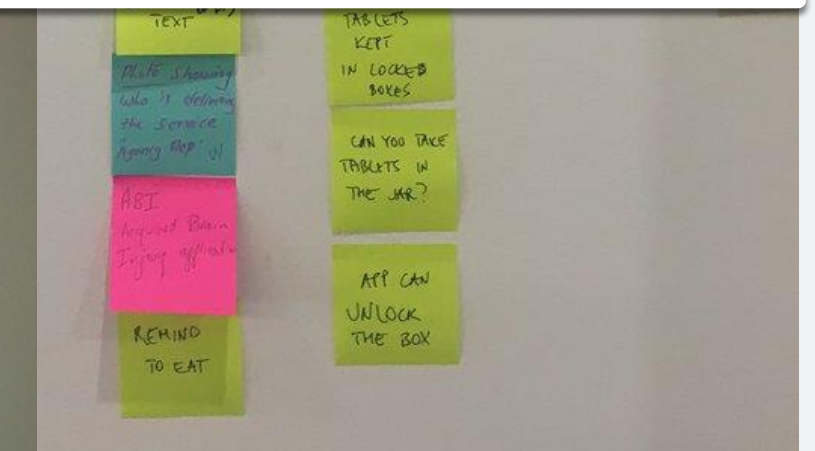
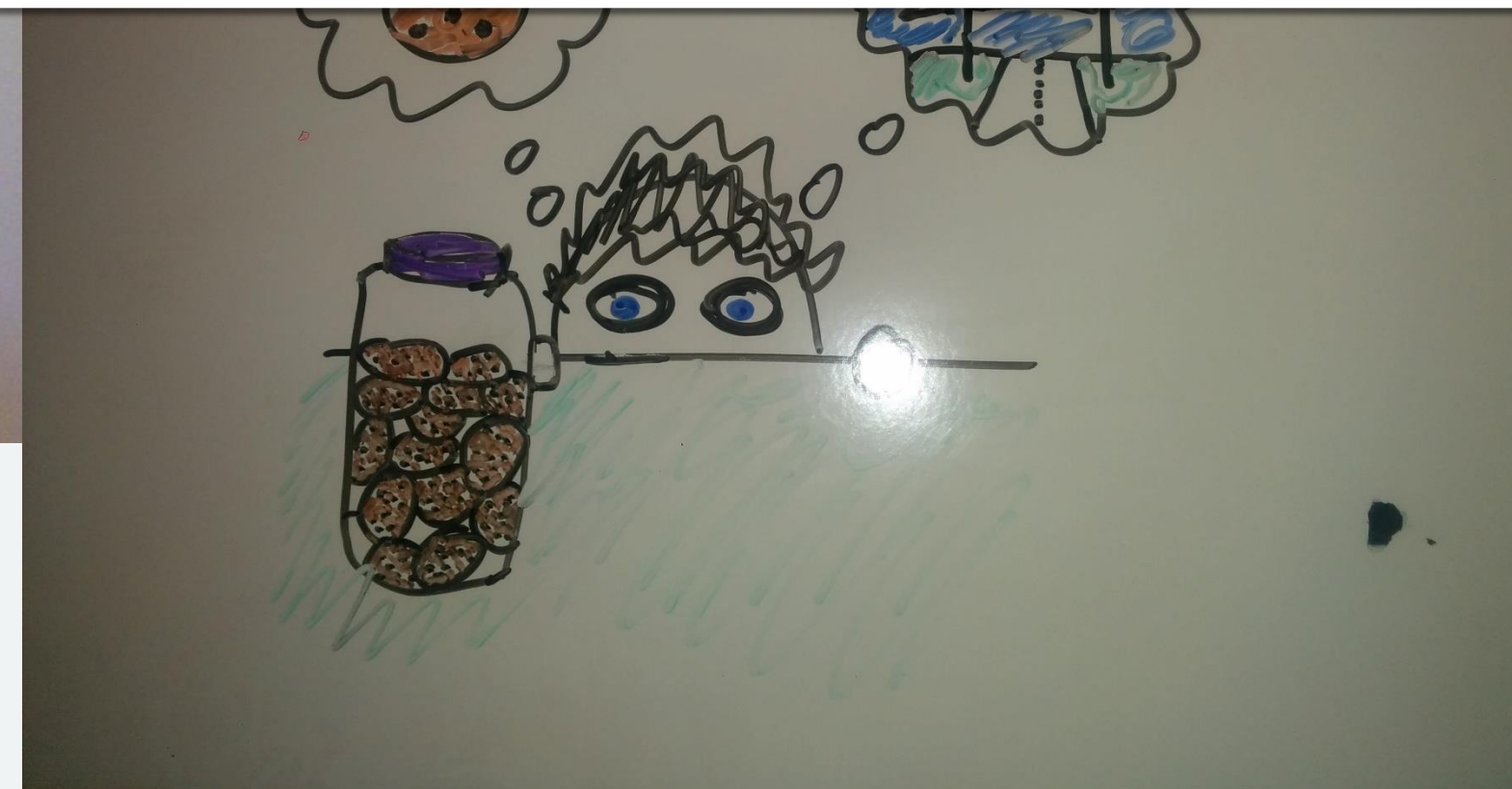
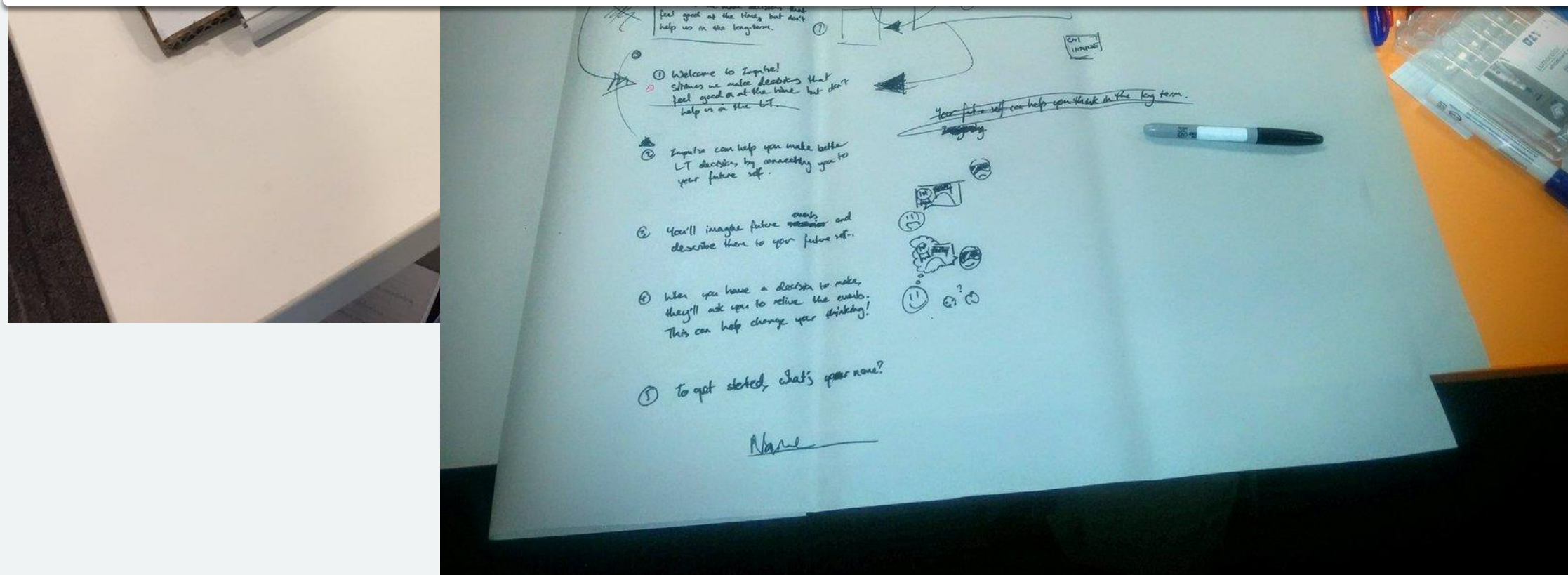
www.druepillans.com

generate
bacterial reports
↑ accessibility improve
real time data



Post-it notes, flash cards and sharpies can do pretty much anything...

James Goldie (Impulse) on Twitter



Website:

<http://healthhack.com.au/>

Facebook:

<https://www.facebook.com/HealthHackAU/>

<https://www.facebook.com/healthhackcbr>

Twitter:

[@HealthHackAu](https://twitter.com/HealthHackAu)

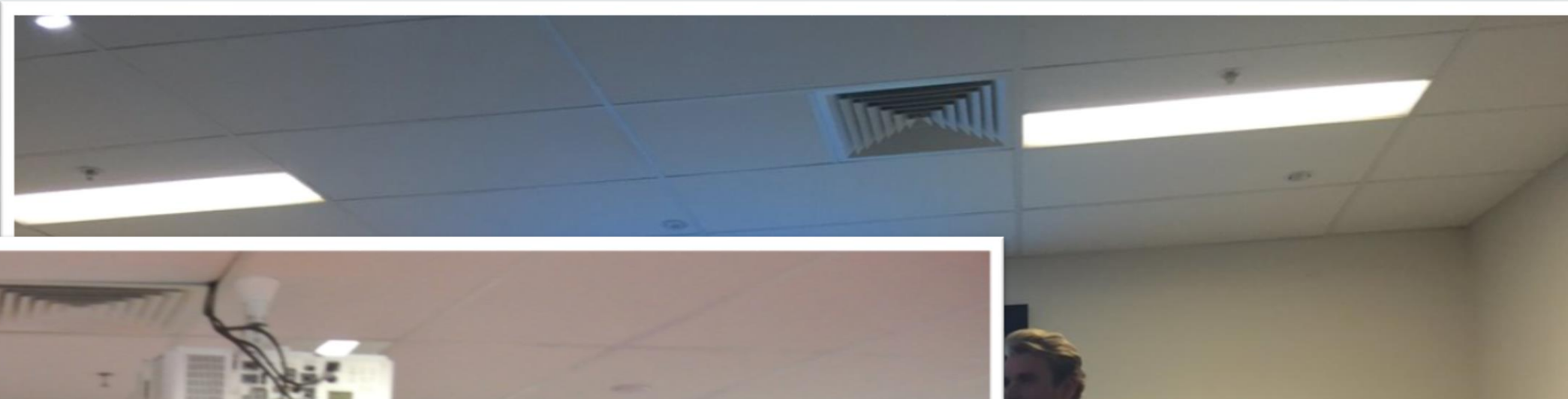
HealthHack is a collaborative platform for:

- Exploring and Developing Ideas
- Sharing
- Learning
- Creating
- Networking
- Having fun



- Make HealthHack an annual event across Australia
- Engage with remote areas (bringing participants to the big city events or start the event on-site)
- Secure accessibility for everyone
- Better tracking of the projects started at HealthHack
- Secure funding to make it all happen

HealthHack 2016



Thank you!