



CRACK IT Solutions – successes from the NC3Rs technology partnering hub

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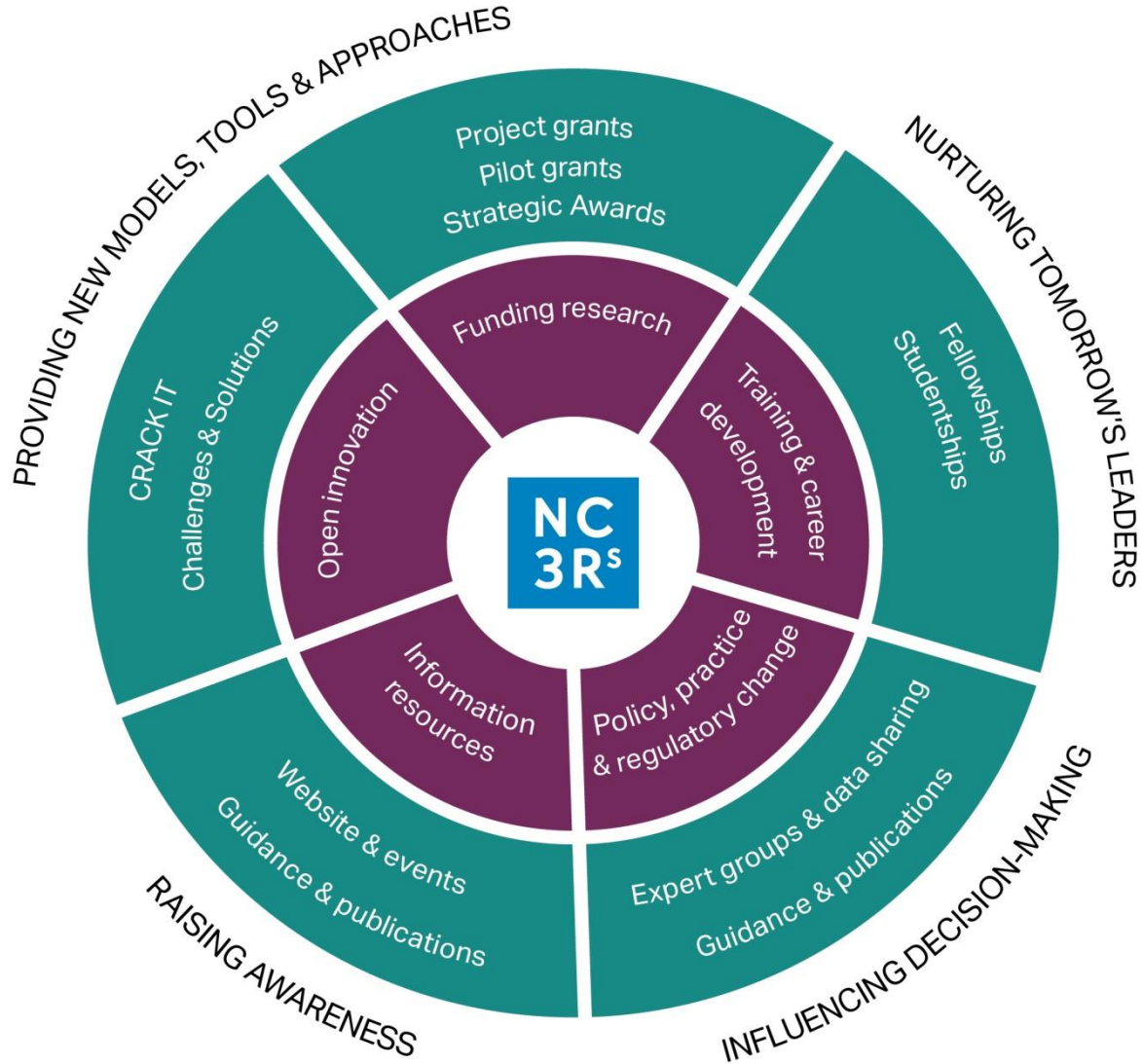
National Centre
for the Replacement
Refinement & Reduction
of Animals in Research

Who are we?

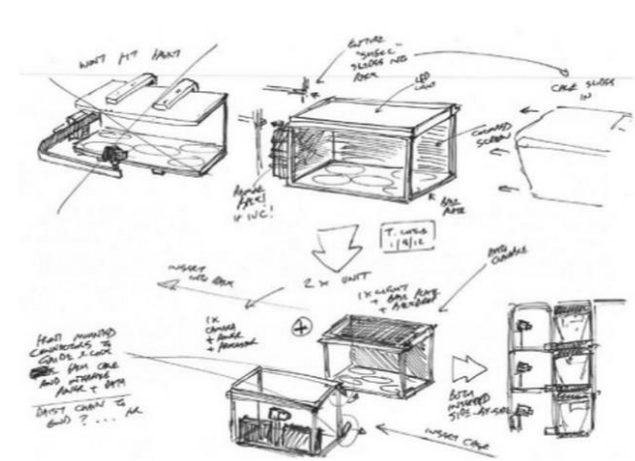
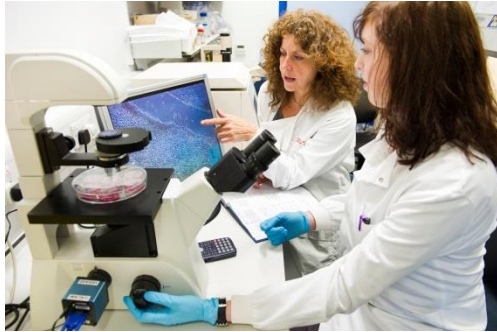
- Independent, scientific organisation
- Established by Government in 2004
- Use the 3Rs as a framework to support UK science, innovation and animal welfare
- Work with research funders, academia, industry and regulators – broad remit
- Budget ~ £10 million per annum
- 25 posts based in Central London
- Activities divided between:
 1. Research funding
 2. Centre-led science programmes



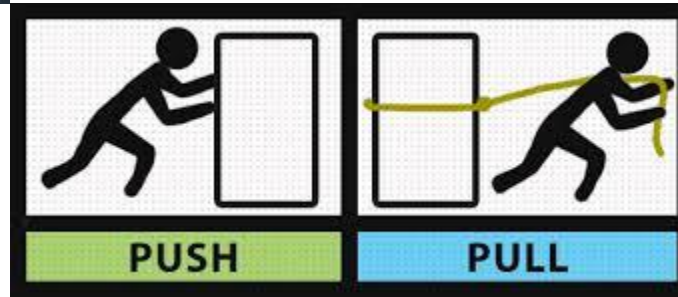
What do we do?



Why CRACK IT?



CRACK IT
Solutions



CRACK IT
Challenges



What is CRACK IT Solutions?

- A technology partnering hub providing a route to showcase research and technology with 3Rs potential to the wider scientific community
- Aim is to find new partners for adoption, validation or further development
- Provide seed-funding to support these collaborations

CRACK IT Solutions process



Idea

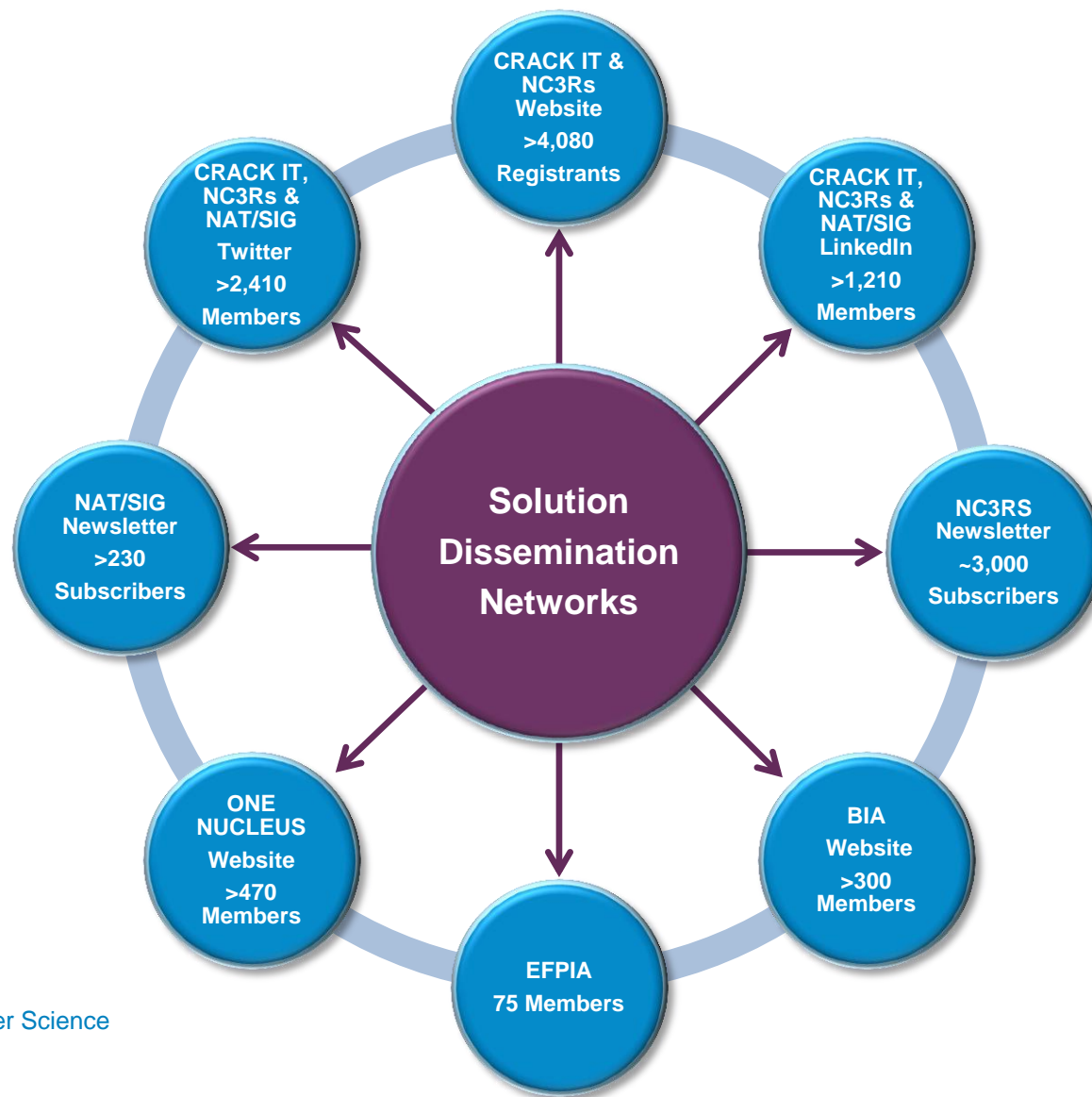
Partners



£30,000

Up to 12 months

CRACK IT Solutions Networks



CRACK IT Solutions to date

- Launched in 2012
- 39 Solutions showcased - 25 SMEs, 14 academia
- > 160 new connections made
- Seed funding of £360k awarded ➡ additional £242k of leveraged funding



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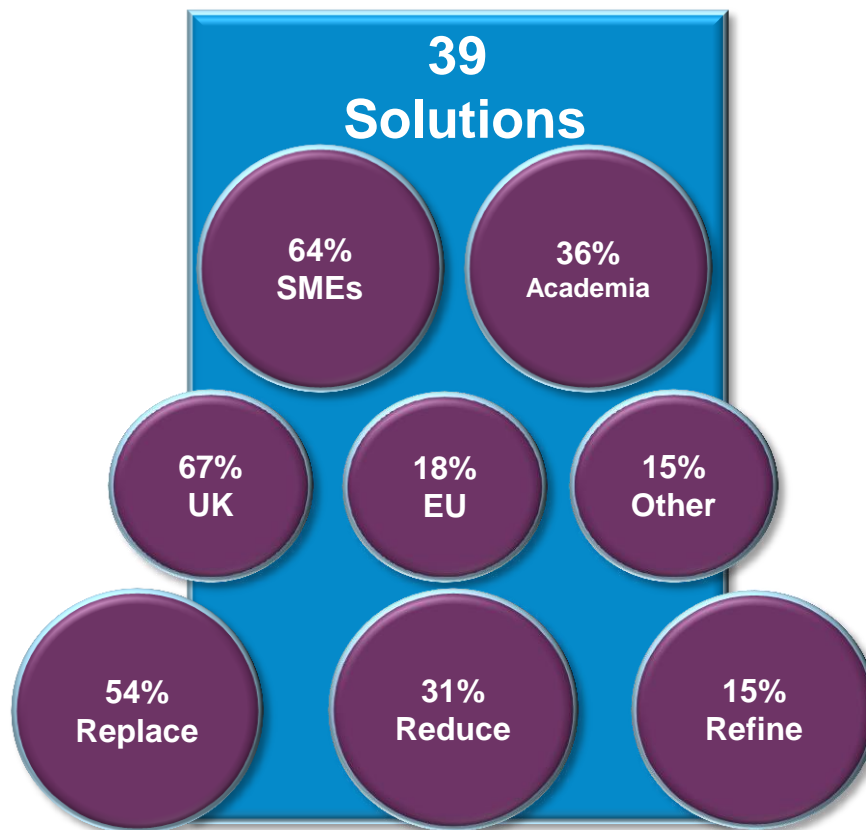


CRACK IT Solutions to date

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- > 160 new connections made
- Seed funding of £360k awarded ➡ additional £242k of leveraged funding
- Direct route in to 30 companies
- More than 3,000 member organisations/individuals reached through our partner networks
- More than 20,000 unique monthly views to NC3Rs/CRACK IT websites

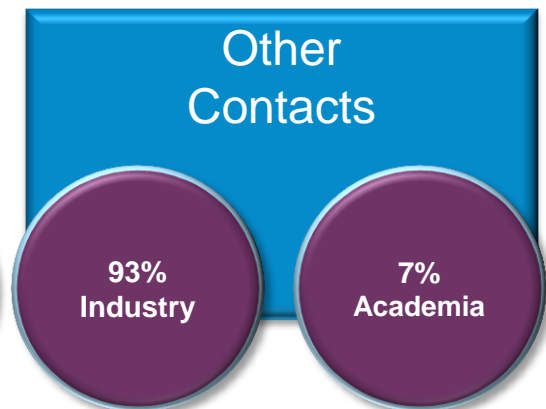
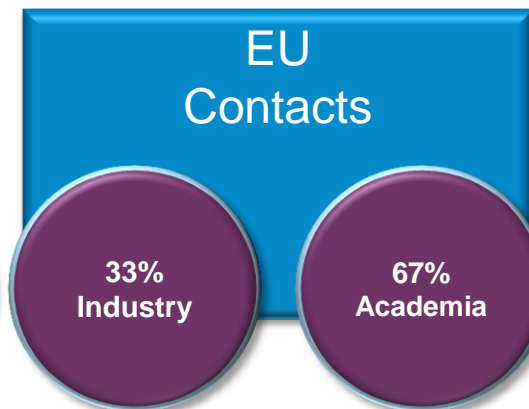
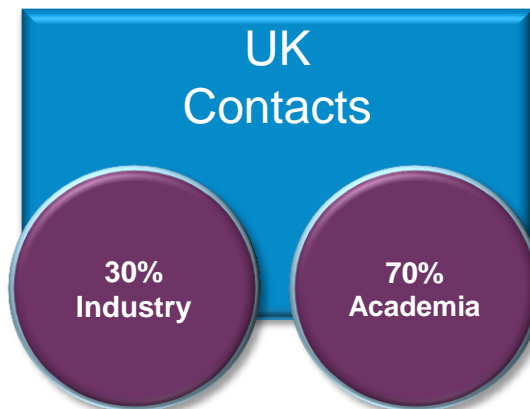
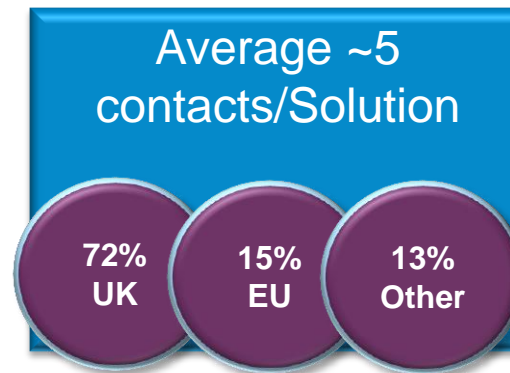
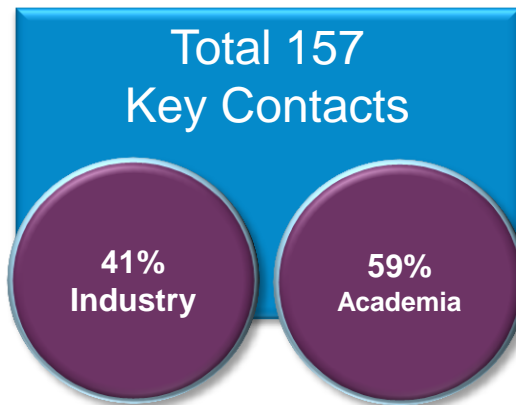
CRACK IT Solutions

Where we are now: 2012-2016



CRACK IT Solutions

Where we are now: 2012-2016



Successes!

Case study 1: Reducing animal numbers in tasks of memory

Dr Alex Easton; Durham University



The technology

A new apparatus for reducing animal use in spontaneous recognition tasks as a measure of memory

Need for collaboration

Seeking partners with (i) compound libraries, and (ii) automation expertise



CRACK IT treatment

Outcomes

Four new connections:

- GSK (Shanghai)
- BIOSEB
- Campden instruments
- Academic institution

Funding application

Industry partner to provide compounds and expertise for validation

- Matched funding from the university



Impacts

- Successfully developed a version suitable for mice – industry requirement
- Demonstrated results from this apparatus are more reliable than standard approaches
- Reduced animal use by 50%
- Further investment in the technology by GSK
- Generated interest in the technology from other sectors and users
- Now working with a biotech company with automation/commercialisation expertise

Case study 2: ZeGlobalTox: multi-organ toxicity testing in zebrafish

ZeClinics

The technology

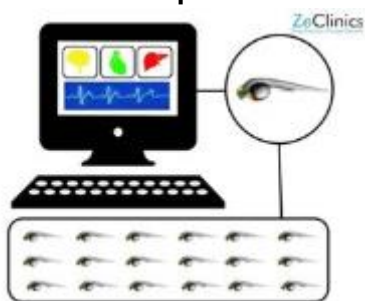
ZeClinics[®]

Drug Discovery Through Zebrafish

Preclinical zebrafish embryo screen to identify compounds with potential cardiac, hepato- and neurotoxicity in the same animal

Need for collaboration

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CRACK IT treatment

Outcomes

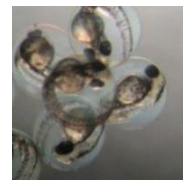
Nine new connections:

- 2 large pharma (USA)
- 2 SME (EU)
- 5 academics (EU)

Funding application

With SMEs to automate and develop for behavioural tracking, image analysis and easier integration into industry process;

- £20k leveraged from partners



Impacts

- Wider recognition of the company and technology platform
- Validation of the unique multi-organ tox assay, ZeGlobalTox
- Project with large pharma company to establish / evaluate a single organ CV model in zebrafish larvae
- ZeCardio[®] software developed and marketed to analyse ZF heart physiology

Why should potential Solution providers from academia and SMEs get involved?

- Expand and exploit their research in different areas
- Receive input from different audiences across sectors and disciplines
- Access expertise and in-kind contributions to validate their technology
- Identify and capitalise on novel market opportunities
- Apply for NC3Rs funding to support new partnerships
- Impact big business decisions as their product is taken up by large companies
- It's free!

Why should potential collaborators get involved?

- **Medium and large companies**

- Use the CRACK IT website to horizon scan for new technologies and products
- Shape the R&D of new technologies to meet their needs
- Help bridge the gap between basic and applied research to increase availability of novel research tools
- Share experience and knowledge to create new markets for 3Rs products

- **Academia and SMEs**

- Access NC3Rs funding to support new partnerships
- New opportunities to apply their own research

How to get involved

- Visit the CRACK IT Solutions webpages:
<http://www.crackit.org.uk/crack-it-solutions>
- Contact the CRACK IT Team at crackitenquiries@nc3rs.org.uk
- joanna.edwards@nc3rs.org.uk