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Bio

Meta-research to drive improvements of the modelling of human diseases

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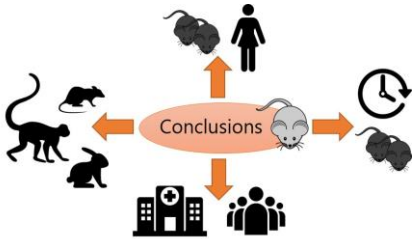
Disclosures

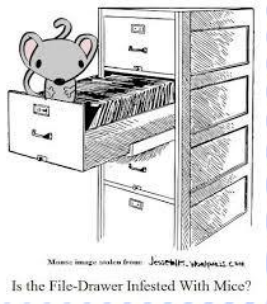
- Editor-in-Chief of **BMJ Open Science**

- Convenor of the Collaborative Approach to Meta-Analysis and Review of Animal Data from Experimental Studies (**CAMARADES**)

My background

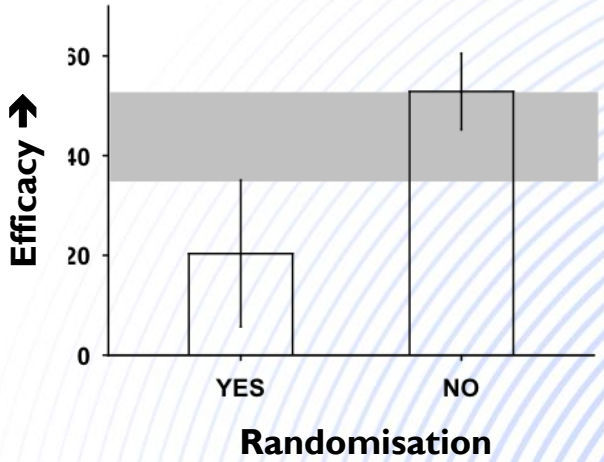
- Meta-research scientist with a background in pharmacology and neuroscience
- Approach is based on systematic review & meta-analysis





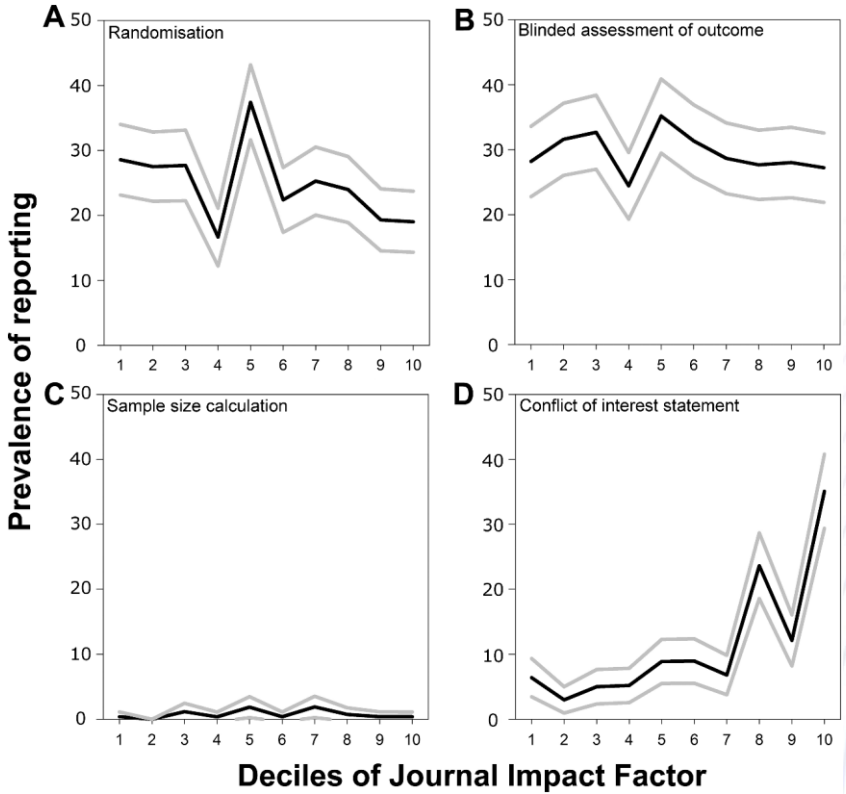
It’s a problem…..

	Randomisation	Blinded Outcome Assessment
Stroke	36%	29%
MND	31%	20%
AD	15%	25%
PD	12%	15%
EAE	8%	15%
Glioma	14%	0%



Sena et al, TiNS 2007

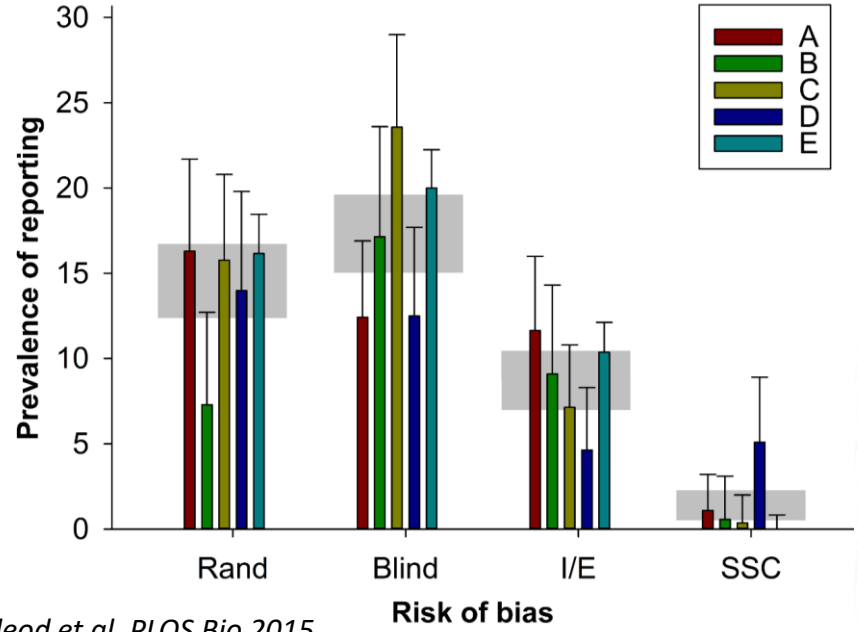
Good ‘quality’ journals



Macleod et al, PLOS Bio 2015

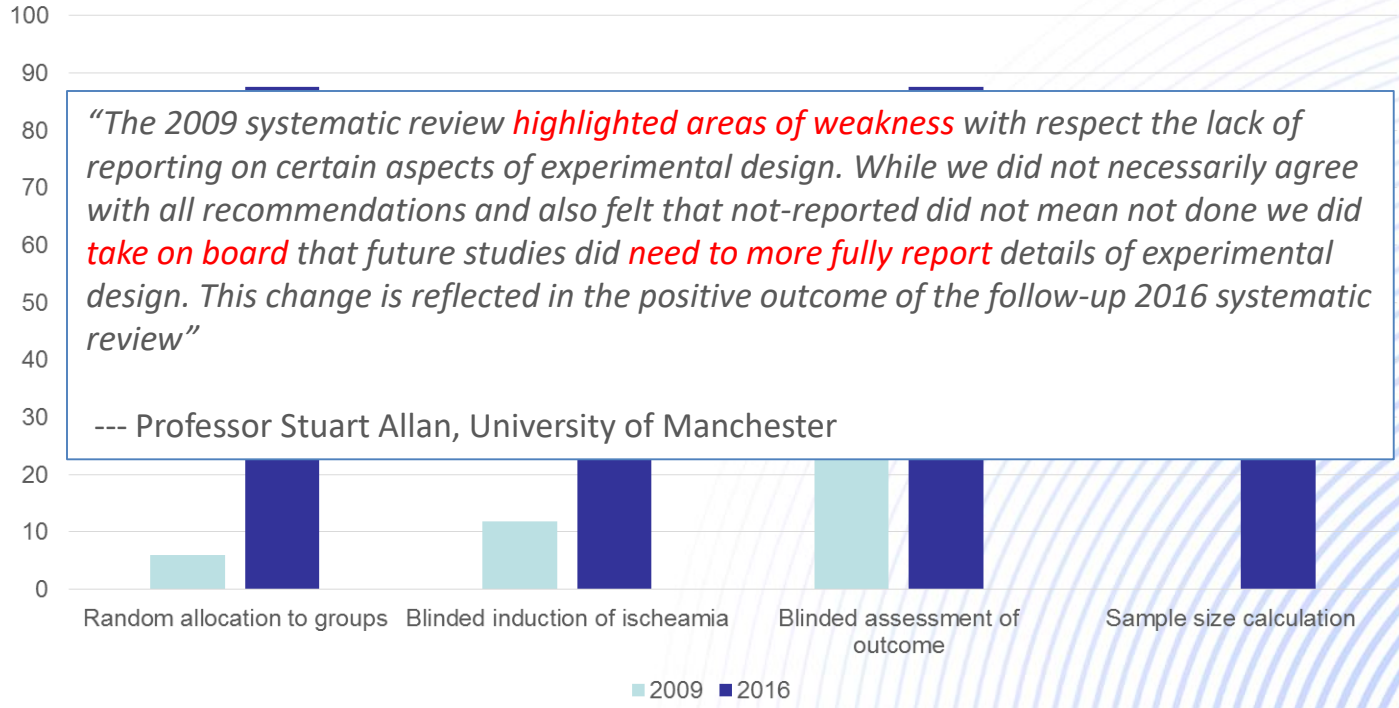
It’s not just a neuroscience problem

- The “best” UK institutions
- RAE – 1,173 studies



Macleod et al, PLOS Bio 2015

Things are improving

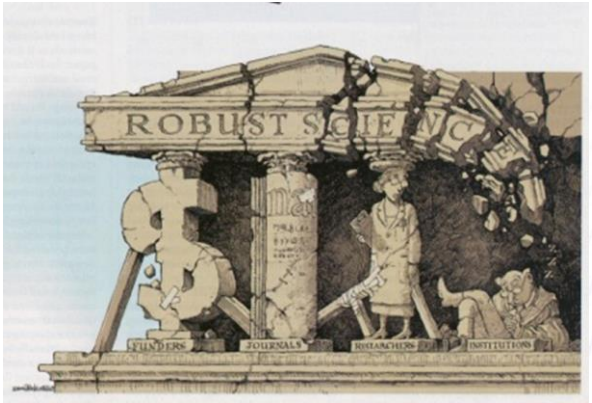


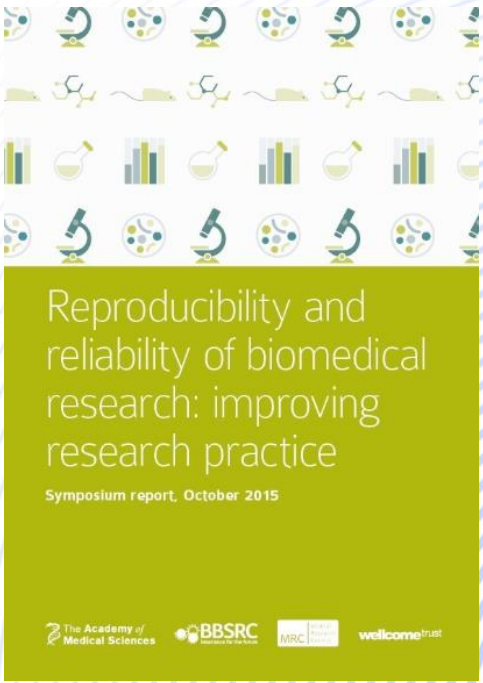
"The 2009 systematic review highlighted areas of weakness with respect the lack of reporting on certain aspects of experimental design. While we did not necessarily agree with all recommendations and also felt that not-reported did not mean not done we did take on board that future studies did need to more fully report details of experimental design. This change is reflected in the positive outcome of the follow-up 2016 systematic review"

--- Professor Stuart Allan, University of Manchester

McCann SK, Cramond F, Macleod MR, Sena ES (2016).
Translational stroke research **7**(5)**:** 395-406.

Conclusions





NC 3Rs

We are extending this programme of work to develop guidance to support improved reporting of *in vitro* research. These guidelines (working title, the *RIVER* guidelines - reporting *In Vitro* Experiments Responsibly) will optimise the reproducibility of *in vitro* studies and improve confidence in their validity to support wider uptake.

Thanks to……

Stroke association

Wissenschaftskolleg zu Berlin
INSTITUTE FOR ADVANCED STUDY

NC 3Rs National Centre for the Replacement Refinement & Reduction of Animals in Research

wellcome

MRC Medical Research Council

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