Surveys of current status in biomedical science grant review: funding organisations' and grant reviewers' perspectives

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What do we know about biomedical grant review?

Cochrane review on biomedical grant review, Demicheli et al 2007
10 studies, none assessing the effect of peer review on quality, relevance, ethics, and importance of funded research

Does panel review select the best grant applicants? Bornmann et al 2008
Appraised grant-winners' publications up to 8 years after funding by two European molecular biology organisations and concluded the answer was yes

How many reviewers are needed to meet NIH quality standards? Kaplan et al 2008
To reliably and repeatably score NIH grant proposals takes at least four reviewers

Potential bias in grant applications to Australian RC, Marsh et al 2008
Unreliable process. Most obvious bias was that applicant-nominated reviewers were too generous

Gender bias in grant review, Bornmann et al 2007
Meta-analysis showing that male grant applicants men have significantly greater odds of receiving grants than women by about 7%

The Starling group

"Find the best of men, give them what equipment you can afford, and leave them alone"

Ernest Starling 1924

Is biomedical grant review in trouble?

Funders' survey:

To describe

- typical workloads of funding organisations worldwide
- current barriers to efficient grant review
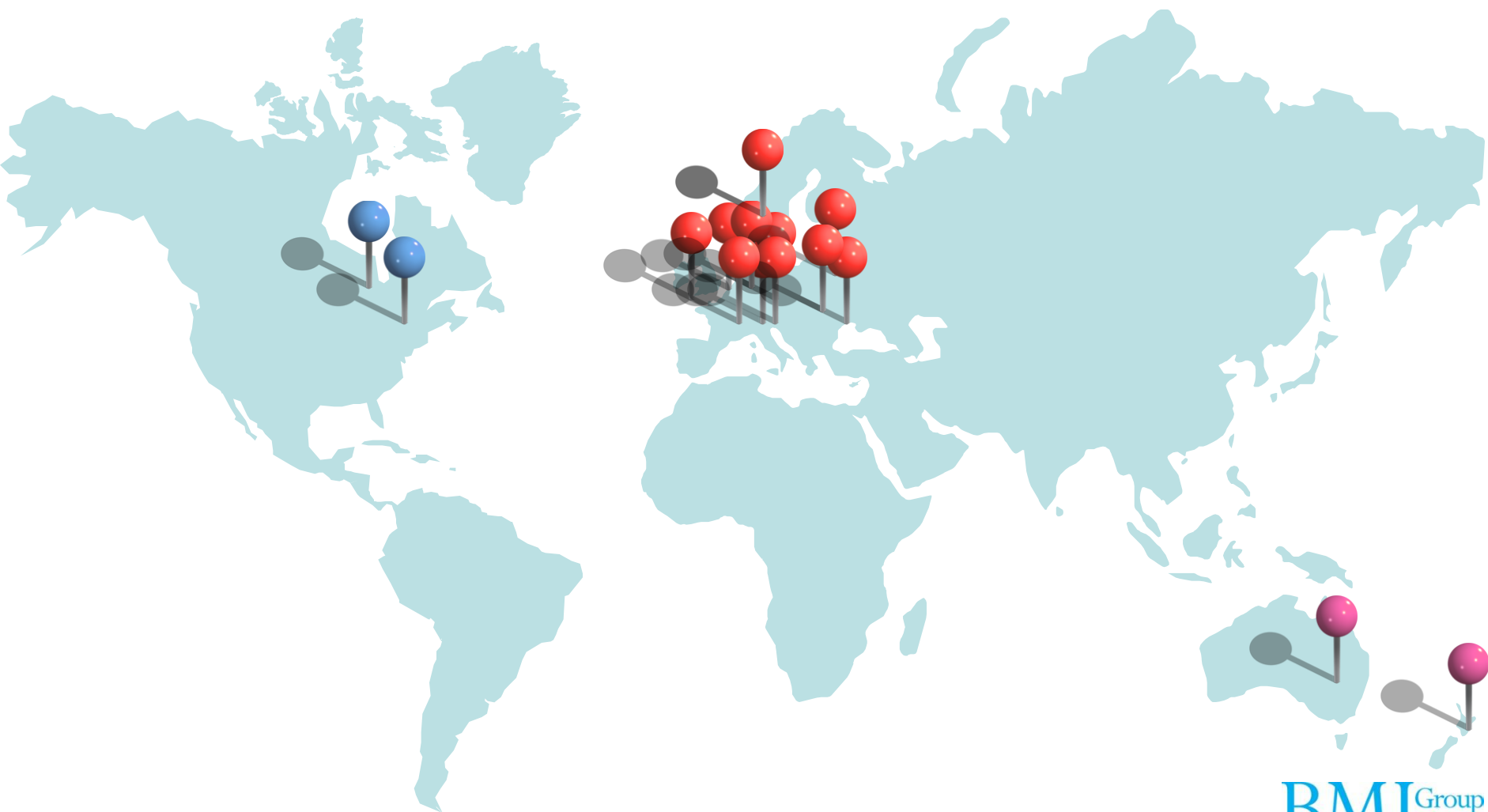
Reviewers' survey:

To describe

- workload of a sample of these funders' reviewers
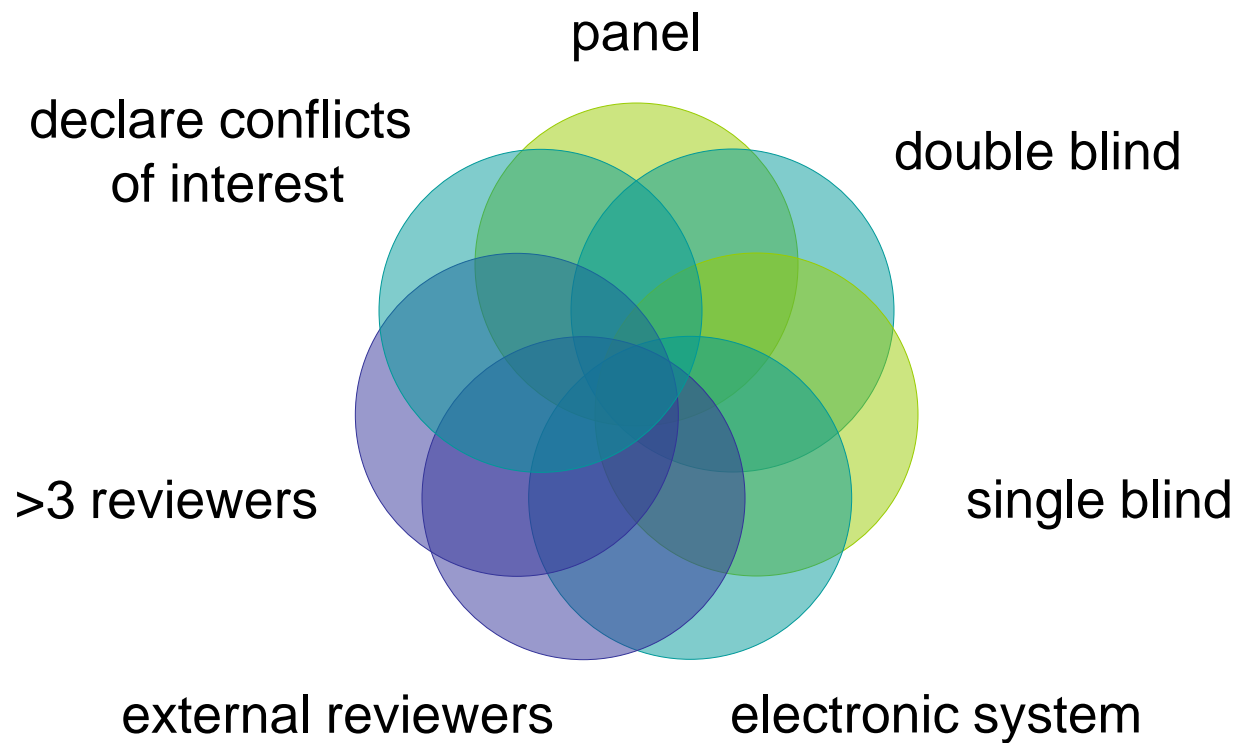- explore barriers to taking on grant review

29/57 (51%) biomedical research funding organisations in 19 countries, recruited by Starling group through snowballing

9 organisations surveyed random samples of their reviewers and 258/418 (62%) responded

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Funders

Peer review processes
n=29 (51%) in 19 countries

panel

double blind

declare conflicts of interest

single blind

>3 reviewers

external reviewers

electronic system

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Funders' problems with peer review

	Very frequent or frequent (n=29**)**
Reviewers declining to review	16
Receiving late reviewers' reports	10
Too many grant applications in the system	15

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How do funders inform and reward reviewers?

N=29

give board/panel's decision   16
- in detail   3

give feedback
- on usefulness of reviews   7
- on quality of reviews   8

name reviewers on website   8

tell reviewers' institutions they review for them   6

pay reviewers   12

Reviewers' survey
n=258/418 (62%); 22 countries; 66% male; 62% 41-60y

	%
Main role:	
• researcher	77
• practising clinician	31
• scientist	17
reviewed for ≥3 organisations in past year	44
reviewed at least 10 journal articles in past year	100
reviews grant applications in own time	72
not recognised for conducting grant review	74
has had peer reviewer training	9
hasn't and would like some	64

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Why do reviewers agree to review grant applications?

	Extremely or Very important (%)
Desire for fairness in decision making by committees	51
Sense of professional duty	47
Relevance of the topic	46
Desire to keep up to date with advances	43
Support for innovation	40
Opportunity to learn something new	36
Desire to help pay back the efforts of others	32
Reputation of the funding organisation	19
Need to enhance CV and career prospects	9

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Funders' interest in uniform requirements
n=29

	Yes	No	Not sure
For grant review process?	18	0	11
For grant proposals?	18	2	9

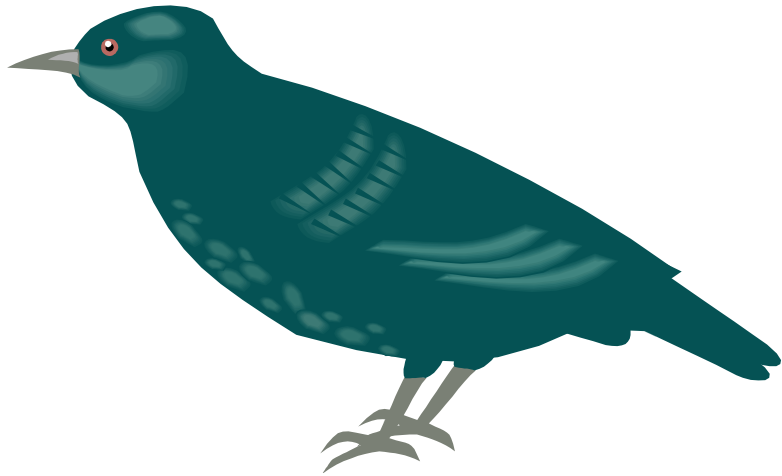BMJ Group

Enhanced peer review at NIH 2009-11

Engage and keep accomplished, broad-thinking, creative reviewers
- select them more carefully, with professional societies' help
- improve their training
- make workload more flexible
- online system using higher bandwidth

Increase quality and transparency of reviews
- minimise bias
- use 1-9 scoring system to rate applications
- templates to structure reviews

Make applications more concise, better matched to review criteria

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Thanks

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