Paul Montgomery
Professor of Social Intervention
p.x.montgomery@bham.ac.uk
Behavioural/Social Scientists live in exciting times

• **UK What Works Network**
  – Create, share, and use high-quality evidence on policy programs and practices which combined receive public spending of more than £200 billion
  – Public health, social care, education, crime reduction, and economic growth

• **US Social and Behavioral Science Team**
  – Assists federal agencies in applying behavioural science insights to policies and operations
  – Improve public welfare, programme outcomes, and cost effectiveness
The White House
Office of the Press Secretary

For Immediate Release
September 15, 2015

Executive Order – Using Behavioral Science Insights to Better Serve the American People

EXECUTIVE ORDER
---

USING BEHAVIORAL SCIENCE INSIGHTS TO

BETTER SERVE THE AMERICAN PEOPLE

A growing body of evidence demonstrates that behavioral science insights -- research findings from fields such as behavioral economics and psychology about how people make decisions and act on them -- can be used to design government policies to better serve the American people.

Most published research may be false

- We have problems reproducing psychological science (Open Science Collaboration, 2015)
  - Replications of 100 experimental and correlational studies
  - 97% of original studies vs 36% of replications had significant results
  - Mean effect size was half the magnitude of the mean effect size of the original effects
  - “There is still more work to do to verify whether we know what we think we know”
85% of biomedical research funding ($210 Billion) is being avoidably wasted

Several stages of research production may lead to waste (Moher 2015)

1 Questions relevant to users of research?
   - Low priority questions addressed
   - Important outcomes are not assessed
   - Over 50% of studies are designed without reference to systematic reviews of existing evidence

2 Appropriate research design, conduct, and analysis?
   - Over 50% of studies do not take adequate steps to reduce biases
   - Inadequate statistical power
   - Inadequate replication of initial observations

3 Efficient research regulation and management?
   - Hyper-regulation of research
   - Inefficient delivery of research
   - Poor reuse of data
   - Do not promote evaluative research as an integral element of good clinical practice

4 Accessible, full research reports?
   - More than 50% of studies are never published in full
   - Biased under-reporting of studies with disappointing results
   - Biased reporting of data within studies

5 Unbiased and useable reports?
   - More than 30% of trial interventions are not sufficiently well described
   - More than 50% of planned study outcomes are not reported
   - Most new research not interpreted in the context of systematic assessment of other relevant evidence

Research waste
How to make more published research true

• Some research practices that may help increase the proportion of true research findings (Ioannidis 2014):
  – Large-scale collaborative research
  – Adoption of replication culture and reproducibility practices
  – Registration (studies, protocols, analysis codes, datasets, raw data)
  – Sharing (data, protocols, materials, software, and other tools)
  – Containment of conflicted sponsors and authors
  – More appropriate statistical methods
  – Standardization of definitions and analyses
  – More stringent thresholds for claiming discoveries or “successes”
  – Improvement of study design standards
  – Improvements in peer review, reporting, and dissemination of research
  – Better training of scientific workforce in methods and statistical literacy
This session

- Establishing a Research Agenda for Behavioural Trials: Results from the IBTN Prioritisation Project
  - Prof Molly Byrne

- The Painful Truth about Behavioral Intervention Outcomes: Evidence Requirements for Public Policy
  - Prof Karina Davidson
This session

- Establishing a Research Agenda for Behavioural Trials: Results from the IBTN Prioritisation Project
  - Prof Molly Byrne

- The Painful Truth about Behavioral Intervention Outcomes: Evidence Requirements for Public Policy
  - Prof Karina Davidson