

DIRE CONSEQUENCES

Just the financial consequences of the reproducibility crisis are enormous: a 2015 study estimated that researchers spent around \$28 billion annually in the United States alone on irreproducible preclinical research for new drug treatments.¹⁰⁷ Drug research inevitably will proceed down some blind alleys—but the money isn’t wasted so long as scientists know they came up with negative results. Yet it is waste, and waste on a massive scale, to spend tens of billions of dollars on research that scientists mistakenly believe produced positive results.

Beyond the dollars and cents, ordinary citizens, policymakers, and scientists make an immense number of harmful decisions on the basis of irreproducible research. Individuals cumulatively waste large amounts of money and time as they practice “power poses” or follow Brian Wansink’s weight-loss advice. The irreproducible research of entire disciplines distorts public policy and public expenditure in areas such as public health, climate science, and marriage and family law. The gravest casualty of all is the authority that science ought to have with the public, but which it begins to forfeit when it no longer produces reliable knowledge.

Modern science must reform itself to redeem its credibility.



Figure 17: Irreproducible
Preclinical Research

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