

Can Cancer Experts Accurately Forecast the Replication of Cancer Biology Experiments?

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INTRODUCTION

The replicability of experimental findings is a key tenant of science. There is mounting evidence that many findings in the basic and preclinical literatures cannot be reproduced. This has important policy and ethical implications- particularly in the context where nonreproducible findings are used to launch clinical trials, costly research initiatives, or where they are used to support policy. The cancer biology reproducibility project (Errington, et al. 2015) is currently conducting several direct replications of recent, key findings in top tier science and biology journals to estimate the replication rate in cancer biology. This study investigates researchers' beliefs about reproducibility in this field.

DESIGN

We are conducting a study of researcher forecasts in a naturalistic setting of active replication experiments. We will collect forecasts from cancer experts on a) replication studies that are currently in progress and b) the overall replication rate. Specifically, we will test what sorts of experts can formulate an accurate understanding of replication of pre-clinical cancer studies. We will compare forecasts based on the forecasters' relationship with the project (whether they are independent, an original author, or supportive of the reproducibility project), and we collect cognitive and demographic variables to determine which types of researchers have the best and worst understanding of reproducibility.

PROTECTIONS FOR PARTICIPANTS

Our protocol has been reviewed and approved by McGill's Institutional Review Board (IRB). Questionnaires will be sent initially by email. Positive responses will be interpreted as consent. When responses are received, the predictions will be automatically recorded in our database. Participant names will be retained for follow-up purposes only and will be destroyed at the time of final analysis. No identifying information will be published.

WHO WE ARE

This study is being led by [Jonathan Kimmelman](#), head of the STREAM research group and associate professor in the Biomedical Ethics Unit / Social Studies of Medicine department at McGill

University. The project manager is Daniel Benjamin, a postdoctoral fellow in the Biomedical Ethics Unit at McGill University.

Questions

Should you have questions or concerns about our study, please contact jonathan.kimmelman@mcgill.ca or Daniel.benjamin2@mail.mcgill.ca.