

Scientific Collaboration and Collective Knowledge

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Book Summary

In 2001, nearly three thousand scientists coauthored a single paper for the journal *Nature*. Although the sheer number of coauthors was unusual, the project from which the paper stemmed was not: over the last century, the size, complexity, and frequency of collaboration in the sciences have all increased rapidly. For example, hundreds of scientists contribute to the intricate climate models from which predictions about global warming and environmental policy decisions are derived. No single researcher has the empirical knowledge, mathematical training, and programming abilities to construct the models of clouds, precipitation, tidal movements, glacier movement, etc. that are employed in such climate studies. Similar remarks apply to large-scale projects in particle physics and the biological sciences including, for instance, the human genome project which produced the above-mentioned paper in *Nature*. And even when research does not require hundreds of participants, small collaborations are now the norm in science; single-authored papers are extremely rare.

Despite its growing prevalence and importance, there is relatively little philosophical work analyzing collaborative research in the sciences. What are the benefits and costs of such collaborations, and are current practices for encouraging collaborations optimal? How should credit for discovery and responsibility for error be attributed to large collaborative groups of scientists? How ought collaborating scientists summarize their findings if they disagree about the interpretation of their results? That is, philosophical methods are especially suited to answering (i) *conceptual* questions about the ways in which scientific collaborations might take place, and (ii) *normative* questions about how scientific institutions ought to be organized in light of such possibilities. This book gathers contributions from internationally-recognized philosophers, dedicated to such questions about scientific collaboration.

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