Description

What Is the Purpose of Science?

Answering this question in full would probably take up several volumes of a large textbook, but in laymen's terms, scientists conduct research to investigate our world in order to learn more about it than we did before the research was conducted.

Physicists, chemists, and biologists, and all their appropriate subsets, write in terms of discovering the properties of nature, but after more than two thousand years of ongoing experimentation, much of that discovery now occurs on a theoretical construct with subsequent experiments to confirm theories and identify inconsistencies.

The Scientific Method

Many researchers will gladly share fond reminiscences of their first introduction to the scientific method of research back in middle school or sometimes even earlier. Being introduced to the most basic research methodology that has formed the core of scientific discovery since the 17th century is clearly a seminal moment in a researcher's career. Learning how to make systematic observations and measurements, formulate hypotheses, and then to test and modify those hypotheses through experimentation seems to embed a formulaic approach to research that is hard to break.

Are There Controversial Subjects In Science That Shouldn't Be Touched?

For science to progress, researchers must always be asking why. Whether it's a follow-on question from a prior piece of research data, an opportunity to conduct experiments as a result of new technological capabilities, or a plan to find a practical application for theoretical data, science can only fulfill it's mission by pushing boundaries constantly forward. However, this raises the question of whether or not there are areas that science shouldn't pursue.

Ethicists would argue that the answer to that question lies in the eye of the beholder, since our guidance on right or wrong ultimately originates from a uniquely individual value system that is built on personal, religious, familial, and societal beliefs. Recent advances in both genetics and genomics, stem cells, and the ability to clone are raising similar concerns. Should that position be applied more broadly?

But Who Decides Where to Draw the Line?

As scientific research becomes increasingly dependent on funding sources outside of national governments, those who voice their concerns about the assumption of unlimited research eligibility are becoming further removed from those with the money to fund that research or the power to authorize it.

Yes, there is ethical oversight of large scale research projects, but as fans of science fiction will attest, there is always a mad scientist somewhere willing to ignore those boundaries in the name of pure research and scientific discovery.

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