

Some Benefits of High Energy Physics

1. Answers **questions** about the structure and origin of the universe
People have asked these questions for at least 2500 years and we are presently finding some definitive answers.
2. Leads to **future technology**
Technological advances can only be made when the underlying physical principles are understood. For example, scientists had to first understand electricity and semi-conductors before we could have applications like the light bulb or computers. We don't yet know what advances will be developed from today's new scientific discoveries, but they will only come if we do basic science now.



3. Creates **spin-off** applications

Technologies developed in high energy physics to accelerate, collide, and detect particles and to analyze data have led to the development of CT scans, proton therapy to cure cancer, the World Wide Web, and more.

4. Builds a **foundation** for other areas of science

Advances in biological and other science depend on what has been learned in basic physical science.



5. Develops an educated **work force**

Many people trained in high energy physics go on to have careers in other fields like medicine, engineering, computer science, teaching, and politics.

6. Produces **economic** benefits

Studies shows that money invested in pure research gives about a 30% return on the investment.