

Dean Kamen is an inventor and physicist who holds more than 440 U.S. and foreign patents, many of them for innovative medical devices that have expanded the frontiers of health care worldwide. Mr. Kamen has received numerous awards including the National Medal of Technology from President Clinton, and was inducted into The National Inventors Hall of Fame in May 2005.

Why should we care about an event or a person from centuries ago? This question has probably been asked millions of times in different forms, but the answer is a fairly simple one. We study the past to better understand the present and provide us with a guide for the future. In the words of Mark Twain, “the past does not repeat itself, but it rhymes.”

Take a popular example, for instance: The Founding Fathers. In 1787 at the State House in Philadelphia—the same location where the Declaration of Independence had been signed 11 years earlier—55 delegates from several states met to frame a Constitution for a federal republic that would last into “remote futurity.” In order to do so they undertook a deep study of ancient Greece and Rome and other republics and democracies—without this knowledge they would not have understood the necessity for checks and balances, separation of powers, etc.

The study of history is also crucial in science, too. As an inventor and physicist, I have often turned to the past for inspiration and guidance. One of the greatest scientists in history, Albert Einstein, began reading complex books at the age of eleven.

Upon reading about Pythagoras’ theorem he became determined to prove it and spent weeks in this pursuit. After much effort he succeeded in proving this theorem on the basis of the similarity of triangles and commented “for anyone who experiences [these feelings] for the first time, it is marvelous enough that man is capable at all to reach such a degree of certainty and purity in pure thinking as the Greeks showed us for the first time to be possible in geometry.” Much like the Founding Fathers he used the work of previous scientists and mathematicians to build a base of knowledge that would guide him during life.

On a personal level I have been working on a project involving Stirling engine designs. My goal is to create two machines: one that would convert almost any fuel into electrical power and clean heat, and one that would be able to convert almost any source water into safe drinking water. These generators and water purifiers would then be distributed to people who do not have reliable access to electricity or water—a group that makes up a shocking two-thirds of the world’s population (four billion people)!

The Stirling engine is not a new invention; it was first patented in 1816 by Robert Stirling, a Scottish minister. The original engine runs in simple fashion: a chamber fills with gas then expands when heated. It then contracts when it is cooled. The benefit of the Stirling is that it can rely on cheap and locally available fuels to power the engines. The development of a marketable Stirling device on a mass scale has proven elusive due to a variety of problems.

However, as we move forward with our model that will produce electricity instead of mechanical power, we have carefully examined the history of the Stirling so that we know of the successes and failures of previous scientists. We are not creating this in a vacuum; there has been plenty of money spent and experimentation done on it previously. And it’s critical for us going forward to understand this in order for us to make our own discoveries.

The world faces many large-scale problems such as energy, the environment, and flu pandemics that will take great efforts to solve—efforts that need to come through technological innovation. And to produce this technological innovation we must be able to understand the lessons of the past and build upon the foundations already in place.

In history there is truly something for everyone. History is political, artistic, social, economic, athletic, scientific, cultural, religious, technological, philosophical, and mathematical. We are all a part of history, whether we realize it or not.

Most importantly, the study of history builds the critical skills students need to become responsible citizens and effective leaders. The abilities to research and discover new information and then communicate this information effectively are skills that are essential for the students of today who will be our future business leaders, politicians, and scientists.