

**2014 PSBR High School Essay Contest**  
*Finalist*

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A boy is laying in his rocket ship bed when he wakes up in a cold sweat; dizzy and burning up. In five weeks' time, his bed is traded for a broad, white slate and the robust, lively child is replaced with a sickly being. When he looks in the mirror, he sees a much different person. He sees a being sewn together by bones and skin and pale as a ghost. The top of his head is like a ghastly sphere without any of the wispy blond locks that protruded from his scalp thanks to rigorous rotations of chemotherapy among other treatments. Though the whole image and his life for the next few months are rather frightening for such a young kid, he will make it through relatively unscathed. The reason that this boy will live past his bout with leukemia is because of research completed that enlisted the assistance of mice. Without the use of animals in the past, the medication and cure for his frightening condition may have not been discovered for years to come. Many others can live with otherwise life-threatening illnesses due to research conducted with the help of animals in the laboratory. The range of cures and advances span the spectrum from the use of dogs and fish to discover insulin in biomedicine to polio vaccines discovered using mice and monkeys. Overall, research conducted using animals reap many positive benefits that affect all audiences and are a great vehicle to learn more about biomedical science.

As in the use of any valuable resources whether it be the use of petroleum in vehicles or the use of natural gas when powering many American homes, alternatives are pursued to alleviate stress on the use of precious or less accessible resources. Animal use in biomedical research is no different, and despite the fact that many alternatives can take the place in some experiments, the utilization of living and breathing organisms is necessary to provide desired results in many experiments. A major draw to the use of animals is the complex organization and numerous systems inside cells that must work in sync inside the body. Computer models, which can often simulate animals in certain situations, cannot simulate living cells, which is often what is studied in such trials. Additionally, most animals contain many complex levels of organization such as organ and organ systems that all must work in unison. As before, mere simulations cannot predict nor physically react to new and unique manipulations as well as a living, breathing organism would.

A misconception concerning animal research is that it is a one way street for animals where only humans gain from the research. A commonly overshadowed benefit to the use of animals in biomedical research is that the animals also benefit from such research. When research is conducted on animals, scientists must manipulate the results that are gathered from the test subjects in order to develop any sort of new technology or technique that is fit for human use. Meanwhile, if it has been proven that certain ailments found in a certain organism can be assuaged by measures proven by existing test results, it is logical to assume that it takes little to no extra experimenting to work out the kinks and can be used in the future. Over 80 treatments that were a result of animal experimentation and developed for human use are now used to treat many different animals of many different ailments and conditions. For example, thanks to

numerous vaccines, leukemia in cats can be fought as well as rabies in cats and dogs. Apart from an individual level, the preservation of nearly extinct species has been attained due to new information and techniques gathered from animal research. The tamarins of Brazil and the California condor have both benefited greatly from “new reproductive techniques” which have helped to revive the minute population remaining of these creatures.

Animal use in biomedical research is crucial to continue making monumental steps in our scientific knowledge as a society as a whole. Extending from numerous vaccines to social and behavioral patterns, animals are fundamental in discoveries in all domains of science. Such advancements can affect human kind on a plethora of levels and are a cornerstone in what science is today. This knowledge touches countless lives from all walks of life. In essence, it is a decision between life and death of innocent people, and the use of animal research gives them life.

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