



PRESS RELEASE

**Nobel Laureate Herbert A. Hauptman to Receive the  
Isaac Asimov Science Award**

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BUFFALO, NY — Dr. Herbert A. Hauptman, Buffalo's Nobel Laureate and President of the Hauptman Woodward Medical Research Institute, will be the 2006 recipient of the American Humanist Association's Isaac Asimov Science Award.

According to the American Humanist Association (AHA), the award is to "recognize a person or team of researchers whose scientific work has contributed significantly to the advancement of humanist values. It also is to recognize those scientists and advocates of science who have increased the public awareness, understanding and appreciation of science and the scientific approach."

"The spectacular advances of science and technology in the twentieth century and the current trends hold enormous promise for good and an equally great threat to our very survival. The promise is that the fruits of science will be used for the benefit of mankind, leading to never-ending improvement in the quality of life for everyone; the threat is that the fruits of science will be used for destructive purposes, leading to consequences ranging from devastating pollution of the environment to the destruction of human life by nuclear holocaust," Dr. Hauptman said. "Thus it is more important than ever that the public be aware of current scientific progress and assume the responsibility of ensuring that this progress be used for the benefit of mankind, not its destruction. The scientist can do no less."

"We also wish to honor working scientists who have advanced human knowledge and understanding of the natural universe and therefore have advanced the naturalism inherent in the Humanist outlook," Fred Edwords, editorial director, American Humanist Association, said.

This is the third time this award has been given since its creation in 2004. The first recipient was Dr. Eugenie C. Scott, executive director of the National Center for Science Education, for her work in advancing improved public school evolution education and in effectively opposing "scientific creationism" and "intelligent design" programs in the science curriculum. The second recipient was Joe Nickell, a specialist in responding in a publicly persuasive way to paranormal claims. He's a leading writer for the *Skeptical Inquirer*.

***About Dr. Hauptman***

After more than 20 years with the Naval Research Laboratory in Washington, D.C., Herbert A. Hauptman, Ph.D, joined the staff of the Hauptman-Woodward Medical Research Institute in 1970 (then known as the Medical Foundation of Buffalo). He was looking for a fresh venue in which to quietly practice his craft. Then, in 1985, he was awarded the Nobel Prize in Chemistry, changing his life forever. Although he is a mathematician by training who has taken only one chemistry course in his life, he was able to use classical mathematics to resolve an issue that had stymied chemists for decades.

Around 1950, Dr. Hauptman turned his attention to an interesting puzzle regarding the structure of crystals. Since 1912, chemists had known that a beam of X-rays directed toward a crystal is scattered when it strikes planes of atoms, and the scattered radiation forms a pattern that can be recorded on film. Although the positions of the atoms in the crystal determine the nature of this so-called diffraction pattern, the puzzle for chemists was that they could not readily work backwards from the diffraction data to the atomic arrangement. After perplexing chemists for more than forty years, this problem was finally solved by Dr. Hauptman's mathematical approach. Unfortunately, the procedures, known as "direct methods," that he developed were not immediately understood and appreciated by the chemists who study the molecular structures of solids

(crystallographers), and it was many years before he received the recognition he deserved. Today, there are more than 12,000 crystallographers worldwide, and most or all of them use these techniques.

The structures of thousands of molecules have now been solved by crystallographers using Hauptman's direct methods, and many new molecular structures are added to the list each year. As a result of the information obtained in these studies, many new drugs have been designed. In honor of Dr. Hauptman's work, as well as to honor the original donor who made the Institute a reality, the Medical Foundation of Buffalo was renamed the Hauptman-Woodward Medical Research Institute in 1994.

Dr. Hauptman's current work builds on his earlier Nobel-winning research. He and his colleagues at the Hauptman-Woodward Institute are presently working to extend the methods of structure determination to very large molecules of biological importance, including the proteins that are the targets for drug-design efforts. They have achieved new success in recent years by developing a procedure known as "Shake-and Bake" that has greatly extended the power of direct methods. He is currently serving, at age 88, as President of the research institute that bears his name and he continues his work in earnest with the hope that his latest contributions also will have an impact on health care.

### ***About Hauptman Woodward Medical Research Institute***

Founded in 1956, HWI is an independent, non-profit facility specializing in the area of fundamental biomedical research known as structural biology. The team of more than 70 staff members is committed to improving human health by studying the causes of diseases, as well as potential therapies, at their basic molecular level. HWI is located in the heart of the Buffalo Niagara Medical Campus in downtown Buffalo, New York, in a new state-of-the-art structural biology research center at 700 Ellicott Street. For more information, visit HWI's website at <http://www.hwi.buffalo.edu>.

### ***About the American Humanist Association***

The mission of the American Humanist Association is to be a clear, democratic voice for Humanism in the United States, to increase public awareness and acceptance of Humanism, to establish, protect and promote the position of Humanists in our society and to develop and advance Humanist thought and action. The AHA was founded in 1941.