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## **DNA Discoverer**

### **Nobel Prize-Winning Scientist to Address Convocation Marking Illinois Wesleyan's 150th Birthday**

BLOOMINGTON, Ill.--The Nobel Prize-winning scientist, who played a pivotal role in the discovery of DNA, the substance that is the basis of heredity, will keynote the President's Convocation next month at Illinois Wesleyan University, marking the campus' 150th anniversary.

James D. Watson, whose pioneering work with two colleagues led to a 1962 Nobel Prize in medicine, will address IWU's President's Sesquicentennial Convocation at 7 p.m. on Sept 27 (Wednesday) and receive an honorary Doctor of Laws degree. His address--The Human Genome--will take place in the Shirk Center, 302 E. Emerson, Bloomington. Watson's wife, Elizabeth--a noted historic preservationist--will receive an honorary Doctor of Human Letters degree.

Watson's address comes just three months after scientists announced the successful mapping of the human genome, a 10-year, multi-billion-dollar effort that has been dubbed biology's equivalent to the moon landing or splitting the atom. Watson directed the Human Genome Project in its early years.

Watson joins a growing list of Nobel Prize winners who have visited IWU in recent years: Mairead Maguire, the 1977 peace-prize winner; Oscar Arias, former president of Costa Rica and the 1987 peace-prize laureate; Jean-Marie Lehn, the 1987 chemistry-prize winner; and Derek Walcott, the 1992 literature laureate. Civil-rights leader Martin Luther King, Jr., the 1964 peace-prize laureate, visited IWU twice in the 1960s.

### **The Watsons' Itinerary**

Following Watson's convocation address, there will be a festive party in the Shirk Center for students, faculty, staff, and others--featuring IWU's Jazz Ensemble--to commemorate IWU's 150th anniversary.

Watson will kickoff his IWU visit with a 5 p.m. presentation in Evelyn Chapel, 1301 N. Park St., Bloomington, on Sept. 26 (Tuesday), entitled, "The Pursuit of Happiness."

Watson's wife, Elizabeth--who won the 1999 New York State Historic Preservation Award--will headline a special 4 p.m. presentation, Sept. 27 (Wednesday), in Evelyn Chapel entitled, "Preservation of Cultural Landscapes."

The programs featuring the Watsons are open to the public, free of charge.

**James D. Watson**

James D. Watson, who was born in Chicago in 1928, is a geneticist and biophysicist. In 1953, Watson and Francis Crick proposed the double helical structure for DNA, a feat described by Sir Peter Medawar as "the greatest achievement of science in the 20th century."

For this work, Watson, Francis Crick, and Maurice Wilkins were awarded the 1962 Nobel Prize in Medicine.

Watson enrolled at the University of Chicago at age 15, graduating in 1947 with a bachelor's degree in zoology. He received a Ph.D. in zoology from Indiana University in 1950.

During the 1950s, Watson was a researcher at the University of Copenhagen, the Cavendish Laboratory at Britain's Cambridge University, and the California Institute of Technology.

He joined the Harvard University faculty in 1956, rising through the ranks to professor of biology in 1961. Watson remained at Harvard until 1976, when he became the director on a full-time basis of the Cold Spring Harbor Laboratory, a post he held until 1994. For the last half-dozen years, he has served as president of the Long Island, N.Y.-based facility. Under his direction, the renowned institution was revitalized, steering its research into the field of tumor virology. This research led to new understandings of oncogenes (cancer genes) and the molecular basis of cancer.

Cold Spring Harbor also conducts research into plant-molecular biology, cell biochemistry, and neuroscience. The laboratory also operates as a postgraduate university on DNA science. About 5,000 scientists from around the world annually are drawn to Cold Spring Harbor for professional meetings and advanced courses.

Watson served as associate director of the National Center for Human Genome Research at the National Institutes of Health in 1988-89 and director from 1989-92.

He has received many honors, including the Albert Lasker Prize from the American Public Health Association, John J. Carty Gold Medal of the National Academy of Sciences, Copley Medal of the British Royal Society, and the Lomonosov Medal from the Russian Academy of Sciences. Other honors bestowed upon Watson by the U.S. government include the Presidential Medal of Freedom, the nation's highest civilian honor, in 1977, and the National Medal of Science, which was awarded to him by President Bill Clinton in 1997.

Watson, who has received honorary degrees from about 22 universities, also is the author of five books: *Molecular Biology and the Gene*, *The Double Helix*, *The DNA Story*, *Molecular Biology of the Cell*, and *Recombinant DNA: A Short Course*.

He is married to the former Elizabeth Lewis, with whom he has two sons, Rufus and Duncan.

## **DNA**

According to a Watson biography, published by the Cold Spring Harbor Laboratory, the trio of scientists proposed in their Nobel Prize-winning work "that the DNA molecule takes the shape of

a double helix, an elegantly simple structure that resembles a gently twisted ladder. The rails of the ladder are made of alternating units of phosphate and the sugar deoxyribose; the rungs are each composed of a pair of nitrogen-containing nucleotides."

This pioneering research stressed a concept crucial to the emerging field of molecular biology: understanding the structure of a molecule can give clues about how it functions.

"Because each nucleotide within a rung of the DNA ladder is always paired with the same complementary nucleotide," the Watson biography explained, "one half of the molecule can serve as a template for the construction of the other half. This complementary pairing explains how identical copies of parental DNA can be passed on to two daughter cells.

"During cell division," the article added, "the DNA helix 'unzips,' and two new molecules are formed from the half-ladder templates. Later research showed that the precise sequence of nucleotide rungs of the DNA ladder directs the manufacture of proteins and determines the identity of a living organism. Research on DNA-protein interactions launched a revolution in biology . . . "

DNA is shorthand for deoxyribonucleic acid.

James Watson's visit to IWU comes on the heels of the Human Genome Project, an effort that virtually completed assembly of what has been called "the book of life," an endeavor Associated Press described as "nature's genetic instruction manual for making and maintaining human beings."

President Bill Clinton described the Human Genome Project as giving science "an immense new power to heal" by grappling with illness "at its genetic roots." Because of the new genetic knowledge forthcoming from the project, Clinton said, "our children may know cancer only as a constellation of stars" and not a deadly disease.

When scientists announced in Washington, D.C., that they had successfully completed the Human Genome Project, President Clinton also paid homage to Watson. The president described Watson, who attended the ceremony, as one of the trailblazing pioneers whom "first discovered the elegant structure of our genetic code."

### **Elizabeth L. Watson**

Elizabeth L. Watson, an architectural historian, is a Radcliffe College graduate. She received a master's degree in historic preservation from Columbia University and a master of library-science degree from Long Island University.

She has worked as an architectural historian and archivist for the Planting Fields Foundation in Oyster Bay, N.Y., Royal Institute of British Architects, Historic District Board in Roslyn, N.Y., National Museum of American History, and the Archives of American Art.

Elizabeth Watson is the author of *A Limner's View: An Architectural Odyssey* (1993) and *Houses for Science: A Pictorial History of Cold Spring Harbor Laboratory* (1991). *Houses for Science* traces the unique architectural and scientific evolution of Cold Spring Harbor from a whaling village, to "summer camp" for biologists, to a world-renowned research and educational institution. The Cold Spring Harbor Laboratory has a 100-year heritage of superlative basic research in genetics and an architectural patrimony that spans nearly two centuries.

### **IWU's 150th Birthday**

The President's Convocation is an annual campus-wide assembly of students, faculty, staff, and others that inaugurates the new school year. The 2000-2001 academic year marks IWU's 150th year.

Classes began at IWU on Oct. 29, 1850, with two teachers and a handful of students in Bloomington's Methodist church. Attendance soared to 135 by the end of the second year. The university's first building, the College Building (also known as Old North) opened in 1854. IWU President Clinton W. Sears also wanted a "substantial sidewalk" constructed, linking the school with Bloomington--and spent \$500 of his own money to build the walkway.

Since the fledgling campus' early years with "one building, one sidewalk" it has grown to about 2,025 students in a College of Liberal Arts, and individual schools of Music, Theatre Arts, Art, and Nursing.

Since 1994, these facilities have been added to the IWU campus: a \$15-million athletics and recreation center, a \$25-million science center, a \$6.8-million residence hall, a \$5.1-million Center for Liberal Arts, and a \$1.65-million baseball stadium. A \$26-million library and a \$6-million student center are under construction.

As IWU approached its sesquicentennial, it won several national accolades. U.S. News & World Report ranks it among the nation's most selective liberal-arts campuses. It's ranked 12th nationally by Kiplinger's Personal Finance Magazine among private colleges and universities in terms of delivering high-quality education at an affordable cost. It's ranked the 8th "most wired" college in the nation by Yahoo! Internet Life. Men's Health magazine ranks IWU among the 10 "most male-friendly colleges in America."