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Nationally Recognized Evolutionary Biologist Named VP for Science Education

The Howard Hughes Medical Institute today announced that Sean Carroll, an award-winning scientist, author, and educator, will become the Institute's vice president for science education.

Carroll will be responsible for directing HHMI's portfolio of science education activities when he succeeds Peter J. Bruns in September. Bruns, a geneticist and former Cornell University faculty member, announced his retirement last year after nine years in the post.

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Carroll, an HHMI investigator since 1990 on the faculty of the University of Wisconsin-Madison, studies the development and evolution of animal form and is considered a leader in the field of evolutionary developmental biology, or evo-devo. By utilizing the tools of modern molecular biology and genetics, Carroll and his colleagues have revealed how changes in gene regulation

during development shape the evolution of body parts and body patterns.

The 49-year-old Carroll is also widely known as a speaker and writer about scientific subjects for the general public. He is the author of six books, including *Remarkable Creatures: Epic Adventures in the Origins of Species*, a finalist for the 2009 National Book Award in non-fiction. He writes a monthly column (also called “Remarkable Creatures”) for the science section of *The New York Times* and has served as a consulting producer for the public television program NOVA distributed by WGBH in Boston. In March, Carroll received the 2010 Stephen Jay Gould Prize in recognition of his efforts to advance public understanding of evolutionary science.

“HHMI has had a big impact in shaping how science is taught, particularly at the undergraduate level. Colleges and universities are shaking up what they teach and HHMI has been a catalyst for that change. That’s a great legacy to join,” said Carroll.

HHMI is the nation's largest private supporter of science education. It has invested more than \$1.6 billion to reinvigorate life science education at research universities, liberal arts colleges, and undergraduate-focused institutions, as well as to engage the nation's leading scientists in teaching through the HHMI professors program. Other notable initiatives include the Science Education Alliance, launched in 2007 as a national resource for the development and distribution of innovative science education materials and methods, and the Exceptional Research Opportunities Program (EXROP), which offers mentored research experiences to select undergraduates.

“I want to help other people have as much fun as I have,” said Carroll in describing his decision to take on the new role at HHMI. “That requires thinking about how to foster creativity and innovation on a larger scale. We all need inspiration, but how do we nourish curiosity and inspire an interest in science, particularly among young people? These are crucial challenges and I hope to promote the very positive role that science can play in our culture.”

Carroll traces his own fascination with science to a childhood interest in collecting snakes, noting in an interview with the journal *Nature* that they inspired both his first experiments (their choice of food) and sense of beauty (the patterns of their skin). Today, Carroll’s laboratory uses fruit flies—*Drosophila melanogaster* and its relatives—as models for understanding how new body patterns evolve over time.

In a series of studies published over the last several years, Carroll and his colleagues have traced the origin of new and complex body color patterns and pinpointed the mutations in gene regulatory elements responsible for changing when and where in the body genes are used. “We are now able to trace the genetic steps of evolution in unprecedented detail. What our work has revealed is that, in general, body parts and body patterns evolve through ‘teaching old genes new tricks,’ that is, using very old genes in new way,” he

said.

Carroll is recognized as an exemplary teacher and last year received the Viktor Hamburger Outstanding Educator Prize from the Society for Developmental Biology. The prize, established in 2002 in honor of a major figure in embryology, honored Carroll's contributions to the field but singled out his leadership as a mentor and educator. He is also a recipient of the Distinguished Service Award from the National Association of Biology Teachers. Along with David Kingsley, a fellow HHMI investigator, Carroll delivered the Institute's 2005 Holiday Lectures on Science, "Evolution: Constant Change and Common Threads."

A member of both the National Academy of Sciences and the American Academy of Arts and Sciences, Carroll graduated summa cum laude from the Washington University in St. Louis, Missouri, and received a Ph.D. in immunology from Tufts University, where he worked in David Stollar's laboratory. Carroll did his postdoctoral research at the University of Colorado, Boulder, in the laboratory of Matt Scott (now an HHMI investigator at the Stanford University School of Medicine) where he began his explorations in embryology and the study of genes that control body organization in the developing fruit fly.

Carroll joined the faculty of the University of Wisconsin-Madison in 1987, and became a full professor in 1995. He is the Allan Wilson Professor of Molecular Biology, Genetics, and Medical Genetics. Carroll plans to maintain his laboratory at the University of Wisconsin-Madison.

The Howard Hughes Medical Institute plays a powerful role in advancing scientific research and education in the United States. Its scientists, located across the country and around the world, have made important discoveries that advance both human health and our fundamental understanding of biology. The Institute also aims to transform science education into a creative, interdisciplinary endeavor that reflects the excitement of real research.