About the Axelrod Lectures

Dr. Bernard Axelrod served as Head of the Department of Biochemistry and is currently Professor Emeritus. His efforts were instrumental in founding the biochemistry program at Purdue University. On the occasion of his 70th birthday, colleagues and friends established this lectureship in honor of Dr. Axelrod's many contributions to the field of biochemistry and its community of scientists.

Previous Speakers in the Bernard Axelrod Lecture Series

2010	Robert T. Sauer	Massachusetts Institute of Technology
2009	Lee Hood	Institute for Systems Biology
2008	Jasper Rine	University of California, Berkeley
2007	Olke Uhlenbeck	Northwestern University
2005	Carol Greider	Johns Hopkins University of Medicine
2003	Stephen Kent	University of Chicago
2001	Winslow Briggs	Carnegie Inst. of Washington at Stanford University
2001	Gregory A. Petsko	Brandeis University
1997	Klaus Hahlbrock	Max Planck Institute, Germany
1997	Aziz Sancar	University of North Carolina
1995	Paul Nurse	Imperial Cancer Research, London
1995	Danny Reinberg	Robert Wood Johnson Medical School

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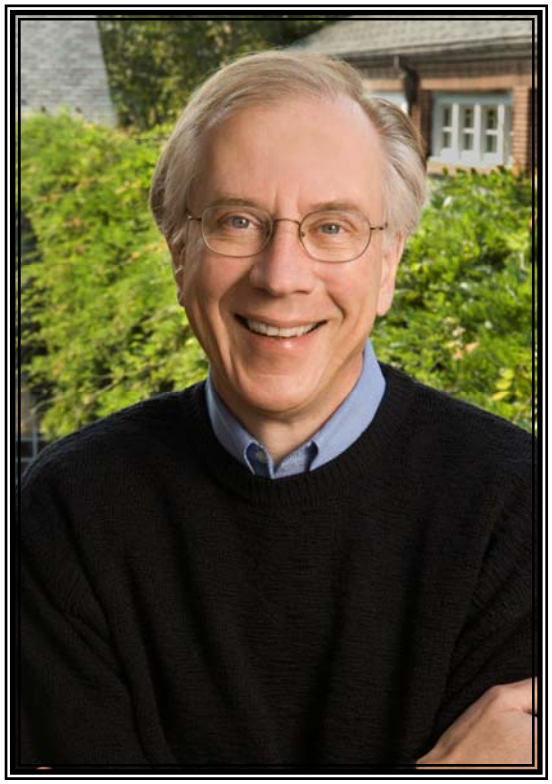
PURDUE UNIVERSITY

The Department of Biochemistry

Presents

The Bernard Axelrod Lecture

March 7, 2011



Thomas R. Cech

Howard Hughes Medical Institute

University of Colorado-Boulder

PURDUE UNIVERSITY

Brief Biography

Distinguished Professor, University of Colorado-Boulder
Director, Colorado Initiative in Molecular Biotechnology
Investigator, Howard Hughes Medical Institute

Dr. Cech was raised and educated in Iowa (B.A. in chemistry from Grinnell College, 1970). He obtained his Ph.D. in chemistry from the University of California, Berkeley, and then engaged in postdoctoral research in the department of biology at the Massachusetts Institute of Technology in Cambridge, Massachusetts. In 1978 he joined the faculty of the University of Colorado-Boulder, where he became a Howard Hughes Medical Institute investigator in 1988 and Distinguished Professor of Chemistry and Biochemistry in 1990. In 1982 Dr. Cech and his research group announced that an RNA molecule from *Tetrahymena*, a single-celled pond organism, cut and rejoined chemical bonds in the complete absence of proteins. Thus RNA was not restricted to being a passive carrier of genetic information, but could have an active role in cellular metabolism. This discovery of self-splicing RNA provided the first exception to the long-held belief that biological reactions are always catalyzed by proteins. In addition, it has been heralded as providing a new, plausible scenario for the origin of life; because RNA can be both an information-carrying molecule and a catalyst, perhaps the first self-reproducing system consisted of RNA alone. In January 2000, Dr. Cech moved to Maryland as president of the Howard Hughes Medical Institute, which is the nation's largest private biomedical research organization. In addition, HHMI has an $80 million/year grants program that supports science education at all levels (K-12 through medical school) and international research. In April 2009, Dr. Cech returned to full-time research and teaching at the University of Colorado-Boulder, where he also directs the Colorado Initiative in Molecular Biotechnology.

Dr. Cech's work has been recognized by many national and international awards and prizes, including the Heineken Prize of the Royal Netherlands Academy of Sciences (1988), the Albert Lasker Basic Medical Research Award (1988), the Nobel Prize in Chemistry (1989), and the National Medal of Science (1995). In 1987 Dr. Cech was elected to the U.S. National Academy of Sciences and also awarded a lifetime professorship by the American Cancer Society.

"Crawling Out of the RNA World: From Ribozymes to Telomerase"

Monday, March 7 at 4:00 PM
Deans Auditorium, PFEN

Dr. Cech will describe the events that led to the discovery of the first catalytic RNA, or ribozyme. The finding that RNA could be a biocatalyst fueled speculation about a primordial RNA World, where RNA replicated itself. How, then, would life evolve beyond RNA to encompass proteins and eventually DNA? Dr. Cech will describe more recent work on ribonucleoprotein (RNP) enzymes that may provide clues about how life "crawled out" of the RNA World to the present situation, where catalysis is carried out mostly by protein enzymes but also by RNP enzymes. The experimental system is telomerase, the RNP enzyme that replicates the ends of eukaryotic chromosomes.