RESOLVED, that the City College of New York award both Dr. Robert E. Kahn ’60 and Professor Harold A. Scheraga ’41, the degree of Doctor of Science *honoris causa*, at the City College 2016 annual Commencement Ceremony on June 3, 2016.

EXPLANATION: Dr. Robert Kahn is a graduate of the Grove School of Engineering, Class of 1960. He is considered one of America's Internet pioneers—an information revolutionary who set the stage for the 21st century, and continues to influence it profoundly. An engineer and computer scientist, he co-invented the transmission Control Protocol (TCP) and the Internet Protocol (IP), the fundamental communication protocols at the heart of the Internet, and conceived the idea of open architecture networking. Dr. Kahn is Chairman, CEO and President of the Corporation for National Research Initiatives (CNRI), which he founded in 1985 after spending thirteen years at the U.S. Defense Advanced Research Projects Agency (DARPA). There Dr. Kahn was responsible for the system design of ARPANET, the first packet-switched network, interconnecting four universities that evolved into a global network linking millions of computers in more than 190 countries. At DARPA he initiated the United States government's billion dollar Strategic Computing Program, the largest computer research and development program ever undertaken by the federal government. In his recent work, Dr. Kahn has been developing the concept of the Digital Object Architecture, which provides a framework for interoperability across heterogeneous information systems. After receiving a B.E.E. from City College, Dr. Kahn earned M.A. and Ph.D. degrees from Princeton University in 1962 and 1964 respectively. He is a recipient of the 1997 National Medal of Technology, the ACM Turing award, the 2004 Presidential Medal of Freedom, the Japan Prize in 2008, and the Queen Elizabeth Prize for Engineering in 2013.

EXPLANATION: Professor Harold A. Scheraga is the George W. and Grace L. Todd Professor of Chemistry, Emeritus at Cornell University, a giant in the field of macromolecular physical chemistry, and one of City College’s most prominent alumni, Class of 1941. Remarkably, at the age of 94, Professor Scheraga runs an active lab at Cornell University to carry on his lifelong interest in applying the principles of chemistry and physics to the study of proteins. A grantee of the National Institute of Health and the National Science Foundation for more than half a century, Professor Scheraga is a seminal figure in the 20th century sea change in our understanding of the nature of the protein molecule. His many contributions fall into three broad categories: the hydrodynamic behavior of proteins, theoretical and experimental analysis of proteins, and the structure of water associated with hydrophobic interactions. These research achievements are matched by the fact that Professor Scheraga has mentored dozens of scientists and influenced and inspired countless others through his work, including students here at City College, where he has presented exciting lectures to undergraduates.
THE CITY COLLEGE OF NEW YORK
2015 HONORARY DEGREE NOMINEE FOR

Doctor of Science

ROBERT E. KAHN '60

CCNY Alumnus Robert E. Kahn, Grove School of Engineering Class of 1960, is considered one of America's Internet pioneers – an information revolutionary who set the stage for the 21st century, and continues to influence it profoundly. An engineer and computer scientist, he co-invented the transmission Control Protocol (TCP) and the Internet Protocol (IP), the fundamental communication protocols at the heart of the Internet, and conceived the idea of open architecture networking – the initiative to ensuring unbundled, equal access to all users of the basic network.

After receiving a B.E.E. from City College and M.A. and Ph.D. degrees from Princeton University in 1962 and 1964 respectively, Dr. Kahn began his stellar career at the U.S. Defense Advanced Research Projects Agency (DARPA). There he was responsible for the system design of ARPANET, the first packet-switched network that connected four universities online. From this relatively modest beginning, what we now call the Internet—a global network linking millions of computers in more than 190 countries—evolved. At DARPA he initiated the United States government's billion dollar Strategic Computing Program, the largest computer research and development program ever undertaken by the federal government.

Dr. Kahn is currently Chairman, CEO and President of the Corporation for National Research Initiatives (CNRI), which he founded in 1986 after 13 years at the U.S. Defense Department. In his recent work at CNRI, created as a not-for-profit organization to provide funding and leadership for research and development of the National Information Infrastructure, Dr. Kahn has been developing the concept of the Digital Object Architecture as a key component of the National Information Infrastructure. This notion is providing a framework for interoperability across heterogeneous information systems, and is currently used in applications such as the Digital Object Identifier. He is a co-inventor of Knowbot programs, programs that automatically search Internet sites and gather information from them according to user-specified criteria.

Robert Kahn is a recipient of the 1997 National Medal of Technology, the ACM Turing award, and the 2005 Presidential Medal of Freedom, presented by President George W. Bush for "outstanding contributions to science and for improving the lives of all Americans." He was inducted into the National Inventors Hall of Fame in May 2006, and awarded the Japan Prize for his work in "Information Communication Theory and Technology" in 2008, as well as the Queen Elizabeth Prize for Engineering in 2013.

Dr. Kahn has received honorary degrees from Princeton University, University of Pavia, ETH Zurich, University of Maryland, George Mason University, the University of Central Florida and the University of Pisa, and an honorary fellowship from University College, London.
Professor Harold A. Scheraga is the George W. and Grace L. Todd Professor of Chemistry, Emeritus at Cornell University and a prominent alumnus of City College (1941). Remarkably, at the age of 94, Professor Scheraga runs an active lab at Cornell University to carry on his lifelong interest in applying the principles of chemistry and physics to the study of proteins.

A grantee of the National Institute of Health and the National Science Foundation for more than half a century, Dr. Scheraga is a seminal figure in the 20th century sea change in our understanding of the nature of the protein molecule. His many contributions fall into three broad categories: the hydrodynamic behavior of proteins, theoretical and experimental analysis of proteins, and the structure of water associated with hydrophobic interactions. These research achievements are matched by the fact that Professor Scheraga has mentored dozens of scientists and influenced and inspired countless others through his work, including students here at City College, where he has presented exciting lectures to our undergraduates.

One of the more fascinating stories of 20th century science is the sea change that occurred in our understanding of the nature of the protein molecule. An initial, incorrect, representation of proteins as colloidal collections of amino acids gave way to the accurate view that proteins are large molecules composed of a linear chain of amino acids with defined three-dimensional structures. As historians write the chapter of the history of science in the 21st century associated with this story, one additional name that will certainly be added to the above list of superstars of protein science is that of Harold A. Scheraga.

The creative sparks that propelled Professor Harold Scheraga's career in science came from an early interest in Latin and Mathematics while in high school in Brooklyn. As a student at City College of New York, he decided to focus his studies on chemistry for which he received a bachelor's degree in 1941. Professor Scheraga continued his academic work in Chemistry with Paul Gross (also a graduate of City College, 1916) at Duke University, where he obtained a Ph.D. in 1946. After completing his doctorate, Scheraga's interests transitioned from the chemical to the biochemical. He performed post-Doctoral studies with Professor John Edsall at Harvard Medical School (John Edsall was a founding father of the field of protein biochemistry). This experience led to a life-long interest in applying the principles of chemistry and physics to the study of proteins.

Professor Scheraga's scientific achievements have earned him numerous awards, including membership in the National Academy of Sciences (1966), the American Academy of Arts and Sciences (1967), the ACS award in Colloid or Surface Chemistry (1978), the Linderstr0m-Lang Medal (1983), ACS Repligen Award for Chemistry of Biological Processes (1990), and the Stein and Moore Award, Protein Society (1995). City College has also recognized the distinguished contributions of Professor Scheraga by awarding him the Townsend Harris Medal (1970) and the City College Chemistry Alumni Scientific Achievement Award Medal (1977). Conversely, he has maintained keen and supportive interest in the department from which he received his B.S. degree.