

## NC State Professor Earns UNC System Humanitarian Award

By Administrator

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Dr. Ruben G. Carbonell, the Frank Hawkins Kenan Distinguished Professor of Chemical Engineering at NC State University, is the recipient of the 2018 Oliver Max Gardner Award presented by the University of North Carolina System. The award, established by the will of former North Carolina Governor O. Max Gardner in 1947, recognizes faculty who have “made the greatest contribution to the welfare of the human race.” The winner is selected by the UNC Board of Governors and also receives a \$20,000 stipend. The Gardner award is the highest honor the system confers on faculty and is the only award for which all faculty members across all of its 17 campuses are eligible. Carbonell is the 31st faculty member from NC State University to receive the award since its inception.

“One of our challenges in higher education is to put what we know in the scholarly world in to practice to create jobs and make it real for all North Carolinians, but Dr. Carbonell is the best example of someone who is thinking and doing,” said UNC System President Margaret Spellings. “Dr. Carbonell’s commitment as an innovator, a scholar, a teacher and a collaborator has paid big dividends for our state, and for that we are grateful.”

Dr. Carbonell joined NC State in 1984, after 10 years in the Chemical Engineering Department at the University of California, Davis, and was department head of Chemical Engineering at NC State from 1994 to 1999. Professor Carbonell was co-director of the NSF Science and Technology Center for Environmentally Responsible Solvents and Processes from 1999 to 2008 and director of that center’s industrial consortium on the Utilization of Carbon Dioxide in Manufacturing.

His main areas of research have included molecular recognition processes for biological molecules using ligands derived from combinatorial libraries, and their applications to separations, detection and pathogen removal. He has been an invited speaker at numerous leading universities, national and international meetings, and he has served as a consultant or board member for several centers, institutes, corporations and national laboratories.

As Director of the Kenan Institute at NC State University, Dr. Carbonell established the Kenan Fellows Program for Teacher Leadership, an innovative program to nurture teacher-leaders through a yearlong mentorship with university faculty and industry partners aimed at developing novel curriculum tools to bring groundbreaking research to K-12 students.

Professor Carbonell was born in Cuba, moved to the United States in 1958, and earned a bachelor of science degree in chemical engineering from Manhattan College in 1969 and a

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doctorate in chemical engineering from Princeton University in 1973. He has advised over 80 master's and doctoral students and 42 postdoctoral students and visiting faculty. Dr. Carbonell has published over 240 papers, is an inventor on more than 40 patents and is co-founder of two company start-ups, Ligamar, Inc. and PRDT, Inc.

He is a member of the prestigious National Academy of Engineering, and a Fellow of the National Academy of Inventors, the American Institute of Chemical Engineers, the American Chemical Society's Industrial and Engineering Chemistry Division, as well as numerous other groups and fellowships.

"Throughout his distinguished and highly decorated career, Ruben's inspiring work has continued to address some of the nation's most challenging needs and have tremendous positive impact on people's lives," said NC State University Chancellor Randy Woodson. "NC State, the UNC System and the State of North Carolina greatly benefit from Ruben's leadership, expertise and success."

Dr. Carbonell is the chief technology officer of the National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL), and was one principal drivers behind its founding. Major funding for the institute was provided by a grant, made possible by a \$70 million commitment from the National Institute of Standards and Technology (NIST) for the next five years, which Carbonell lead the effort to secure. This includes over \$160 million in cost shares from industry, academic institutions, states and non-profit organizations. NIIMBL works to accelerate innovation in biopharmaceutical manufacturing and to develop a workforce whose focus is to treat patients suffering from chronic and deadly diseases throughout the world.