

Approved by the Board of Trustees
January 16, 2020

Board Meeting
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AWARD HONORARY DEGREES, URBANA

Action: Award Honorary Degrees

Funding: No New Funding Required

The University of Illinois at Urbana-Champaign Senate has nominated the following persons for conferral of honorary degrees at the Commencement exercises in May 2020. The Chancellor, University of Illinois at Urbana-Champaign, and Vice President, University of Illinois recommends approval of these nominations.

James Delany, Commissioner, Big Ten Conference -- the honorary degree of Doctor of Humane Letters

James Delany is only the Big Ten's fifth commissioner since its founding in 1896. He has led the Big Ten Conference, from 1989 until his retirement in 2019. The Big Ten has grown to 14-member institutions during Delany's tenure, including the additions of Penn State in 1991, Nebraska in 2011, and Maryland and Rutgers in 2014. With the conference's footprint now stretching from the Colorado border to the Atlantic Ocean and more than five million alumni across the country, Delany continues to work toward strengthening traditional relationships while building a presence in a new region.

Commissioner Delany has been a tireless advocate for students, especially student athletes. He has increased the opportunities for many students, including many "first in the family", to attend college. His work to increase the participation by women in sports and his long-standing and unwavering support for gender equity through Title IX has increased scholarship and participation opportunities for women in Big Ten institutions. This was accomplished by the Delany initiated Gender Equity Action Plan in 1992. The Big Ten leads all conferences with more

than 4,600 female students playing sports. Big Ten institutions have claimed more than 120 national titles in women's sports.

Delany and the Big Ten have been active in the community, creating the school outreach program SCORE (Success Comes Out of Reading Everyday). For more than 25 years, the conference has partnered with Chicago elementary schools to improve reading performance. The Big Ten has also established numerous community programs surrounding its men's and women's basketball tournaments and football championship game.

Jim Delany has supported the welfare of student athletes by initiating 4-year guaranteed scholarships at Big Ten institutions well before the national initiative by the NCAA. He also championed providing three meals per day for all student athletes not just those on scholarship. This program has provided nutritious meals to countless students at our Big Ten Institutions.

Delany has been a tireless advocate for gender equity and racial equality. He has led the Big Ten conference's diversity and inclusion efforts where they have become a point of pride — and results — for the league's membership and particularly for Delany, who has directed the Big Ten since 1989. For those who have come through the conference's Chicago office, they cite the league's pipeline of diverse talent that's been created by a series of mentoring relationships. One relationship begot another and a pattern of diversity evolved.

Finally, Delany has spear-headed a number of academic initiatives in Big Ten institutions including the Big Ten-Ivy League Traumatic Brain Injury (TBI) Research Collaboration to study TBI not only in athletes, but in soldiers and others with traumatic head injuries. This has resulted in research funding support by the NIH, NFL, and Department of Defense. Delany has also been instrumental in organizing, coordinating, and financially supporting the Big Ten Cancer Centers at the various Big Ten Institutions, and he has also been supported by the Big Ten Academic Alliance (formerly the CIC).

In summary, it is altogether fitting that the University of Illinois award the honorary Doctor of Humane Letters degree to James E. Delany in recognition of a lifetime commitment to higher education; his devotion to the academic, athletic, and personal excellence of the student athlete; and his many contributions to college sports and the hundreds of thousands of students who participate in them.

Mario Molina, Professor, Department of Chemistry and Biochemistry, Scripps Institution of Oceanography, University of California, San Diego -- the honorary degree of Doctor of Science

Dr. Mario Molina is a pioneer and one of the main scientists in the world dedicated to atmospheric chemistry. Together with Frank Sherwood Rowland, he co-authored the 1974 original article predicting the depletion of the ozone layer as a direct consequence of the emissions of certain industrial gases, chlorofluorocarbons (CFCs), earning them the 1995 Nobel Prize in Chemistry, which made Molina the first Mexican-born scientist to receive a Nobel Prize in Chemistry. His research and publications on the subject led to the United Nations Montreal Protocol, the first international treaty that has faced with effectiveness an environmental problem of global scale and anthropogenic origin. Professor Molina and his research team published a series of articles between 1976 and 1986 that identified the chemical properties of compounds that play an essential role in the breakdown of the stratospheric ozone layer. Subsequently, they demonstrated in a laboratory the existence of a new class of chemical reactions that occur in the surface of ice particles including those that are present in the atmosphere. They also proposed and demonstrated in the lab a new sequence of catalytic reactions that explain a major part of the destruction of the ozone in the polar stratosphere.

Dr. Molina obtained a chemical engineering degree from the Autonomous University of Mexico (UNAM) in 1965. He then conducted postgraduate training at the University of Freiburg in Germany in 1967. He conducted his formal graduate studies in the U.S. and received a Ph.D. degree in Physical Chemistry from the University of California-Berkeley in 1972. Soon after joining the University of California Irvine, Dr. Molina (with Professor Sherwood Rowland) determined that the chlorine atoms produced from the decomposition of industrially-produced CFCs, being used as refrigerants and for other uses, would act as a catalyst for the destruction of stratospheric ozone. This phenomenon could start a seriously damaging chain reaction to reduce the ozone layer, with resulting concerns about increased ultraviolet radiation effects on human health. They published their findings in 1974 in the *Journal Nature*. Because of their work, new regulations have been established in several countries, following the Montreal Protocol, to protect the ozone layer by regulating the use of CFCs.

Molina is a member of the National Academy of Sciences and the Institute of Medicine in the United States, and for eight years he was one of the 21 scientists that served on President Barack Obama's Committee of Advisors on Science and Technology (PCAST); he also previously served on President Bill Clinton's PCAST. He is a distinguished member of the Vatican's Pontifical Academy of

Sciences, the National College of Mexico, Mexican Academy of Science, and the Mexican Academy of Engineering, among others.

Rahul Pandharipande, Professor of Mathematics, Swiss Federal Institute of Technology Zurich -- the honorary degree of Doctor of Science

Rahul Pandharipande is an eminently distinguished and prolific mathematician who has been the driving force in the central field of Modern Enumerative Geometry for more than 20 years, a field which he largely created. He has garnered many prestigious awards for his research, which continues to have high impact in theoretical physics as well. His influence extends far beyond his own exceptional work, as his former Ph.D. students are going on to remarkable careers of their own. As value added, he grew up in Urbana and has deep ties to our campus.

Professor Pandharipande was one of only 21 mathematicians worldwide invited to give a plenary address at the most recent meeting of the International Congress of Mathematicians, held once every four years. The plenary addresses are for mathematicians who are making the most significant contributions to all of mathematics, irrespective of subfield. The Compositio Prize is awarded to exactly one research paper every 3 years which is published in the top tier Journal *Compositio Mathematicae*. Professor Pandharipande received the award for a paper connecting modern enumerative invariants to theoretical physics. The Clay Research Award is awarded annually to one to three mathematicians worldwide. When Professor Pandharipande won the award in 2013, he was the only recipient. This was in fact one of only two years when there was a single recipient of the Clay Research Award. The only other time was in 1999 when Andrew Wiles garnered the award following his celebrated proof of Fermat's Last Theorem.

The field of Enumerative Geometry was reborn in the 1990s following an influx of new ideas from theoretical physics, with Pandharipande at the helm in laying out the structure of the field and developing the formalism which is now standard. The field is a subfield of the larger field of algebraic geometry, the study of the solutions to systems of polynomial equations.

Rather than focus on the solutions themselves, Pandharipande's focus is on understanding the structure of the solutions of entire families of systems of equations. He has repeatedly extracted hidden structures from this approach, and applied these insights to repeatedly solve major unsolved problems in the field.

While Professor Pandharipande's research is in mathematics, he has frequently drawn on inspiration and ideas from theoretical physics over the course of the last two decades. He has found proofs of deep structures expected from mathematical

physics. More generally, his work is uniformly of the highest caliber. He has published more than 100 papers, at least nine of which are published in the elite Mathematics journals *Annals of Mathematics* and *Inventiones Mathematicae*.

The Board action recommended in this item complies in all material respects with applicable State and federal laws, University of Illinois *Statutes, The General Rules Concerning University Organization and Procedure*, and Board of Trustees policies and directives.

The Executive Vice President and Vice President for Academic Affairs concurs with this recommendation.

The President of the University recommends approval.