

Citation: Professor James Sylvester Gates (Jnr.)

Professor James Sylvester Gates (Jnr.) also known as Jim Gates is the oldest of four siblings, was born in Tampa, Florida, USA on 15 December 1950 and from Grade 11 was educated at Jones High School in Florida which was his first experience in a segregated African American school. At high school level, his career interests were sparked by a physics course, in particular the mathematical aspects. His father urged him to apply to the Massachusetts Institute of Technology (MIT). Professor Gates received two BSc degrees (Mathematics and Physics) and his doctoral thesis was the first at MIT on supersymmetry. He was one of the earliest contributors to the fields of supersymmetry, supergravity and superstring theory contributing to the Large Hadron Collider at CERN including significant involvement in many other large-scale infrastructures in Physics, Astronomy and Cosmology. Professor Gates has co-authored the first comprehensive book on the subject of “superspace” in 1984. He has since dominated the development of these incredibly difficult research fields, the very pinnacle of abstraction and novelty in physics today.

Professor Gates was a Research Fellow at the California Institute of Technology and Harvard University between 1977 and 1982 and is currently the Director of the Brown Theoretical Physics Centre. Professor Gates is a brilliant teacher who has supervised an incredible number of postgraduate students. He has an exceptional research record who has published 217 highly cited Peer Reviewed Papers, 24 Chapters in Books, 4 Authored Books, 2 edited books and 9 invited review articles. Professor Gates holds 8 Honorary Doctorates: Brown University (2018); University of Pennsylvania (2016); Memorial University of Newfoundland (2015); Polytechnic Institute of New York University (2013); Morgan State University (2010); University of Western Australia (2010); Loyola University Chicago (2005) and Georgetown University (2001). Professor Gates has honorary positions as Professor Emeritus, University of Maryland; Winthrop Professor and Professor-at-Large, University of Western Australia; Fellow, Stellenbosch Institute for Advanced Studies and Professor Extraordinary in Physics, Stellenbosch University, South Africa. In addition, he has held 5 Chair and Directorship positions and 10 Visiting Professorships at very eminent institutions.

Professor Gates is a celebrated scientist who has received many accolades and awards during his illustrious career notably: The 21st Century Initiative Award, Howard University and Charter Fellow, National Society of Black Physicists (1992); National Technical Achiever of the Year and Physicist of the Year, National Technical Association (1993). President of the National Society of Black Physicists (1994 – 1996); Fellow of the American Physical Society, APS (1995); Elected as a Fellow of the American Association for the Advancement of Science (2003); Presented with “The Key to the City” of Orlando and a mayoral proclamation declaring April 22, 2005 as the “Sylvester James Gates, Jr. Day”; Endowed with the Klopsteg Award, American Association of Physics Teachers (2003); Recipient of the Public Understanding of Science & Technology Award, American Association for the Advancement of Science (2007); Member of the American Academy of Arts & Science (2011); Recipient of the "2012 Outstanding Community Service Award"; Bestowed with the Presidential Awards for Excellence in Mathematics and Science Teaching, White House (2012); Named as the “University System of Maryland Regents Professor”, only the sixth person to be so recognized since 1992 (2012); Awarded the National Medal of Science: the highest recognition given by the USA to scientists (2013); Conferred with the Mendel Medal by Villanova University (2013); Elected into the National Academy of Sciences (2013), becoming the first African-American physicist so recognized in its 150-year history; Received the “Scientist of the Year Award from the Harvard Foundation” (2014); Inducted into the Orange County Public Schools Hall of Fame, Orlando, Florida (2018) and Honoured as a “Maryland Research Excellence Honoree”, University of Maryland College Park (2020). Professor Gates was elected to the Presidential Line of the American Physical Society, APS (2018) and is the current President of the APS. Professor Gates served on the former President Barack Obama's Council of Advisors on Science and

Technology (2009-2016). Professor Gates was inducted as a Fellow of the South African Institute of Physics, SAIP (2021) for his outstanding contributions to developing and supporting physics on the African continent.

Professor Gates has an exceptional professional record who has served in numerous committees as a member, executive, director, chair, advisor, consultant, panellist, motivational speaker, commentator, scientist and promoter for development. In 2007, he was an invited plenary speaker at the Annual Conference of the SAIP held at the University of the Witwatersrand. Professor Gates's involvement with Physics and Science in Africa is well contextualised in his delivery of 300 odd colloquia and seminars: 250 odd non-technical lectures and over 100 media appearances, citations and quotes. Professor Gates' extensive role in the Public Understanding of Science is well-documented in TV and radio interviews, on the world-wide web and in international scientific reports. He has made outstanding contributions to public life and the scientific society at large, demonstrating leadership with extensive roles within Africa, and in particular South Africa, as a referee for the South African National Research Foundation and as an international expert on the "Shaping the Future of Physics" in South Africa. In addition, he is a true role model and an inspiration to emerging researchers, of all ethnic backgrounds.

Over his lifetime's contribution to science, he has one of the most exceptional CVs, and he may well be described as a genius. Professor Gates' achievements is of an extraordinary scientist, his outstanding intellectual lifetime contributions to science, his distinguished standing within the community and his advances to the discipline internationally, in Africa and in particular, South Africa, a great ambassador will be the most deserving recipient of the University of the Witwatersrand's Honorary Doctorate award.