

Bhanu P Jena, Ph.D. (dr. hc. mult.)**George E. Palade University Professor & Distinguished Professor**

Department of Physiology

Wayne State University School of Medicine

5245 Scott Hall

540E Canfield Avenue

Detroit, MI 48201-1928

Email/Phone: Lab: <https://www.jenalaboratory.com>
 (313) 577-1532; Cell: 248-885-3640
bjena@med.wayne.edu

Bhanu P Jena was born in Jajpur on November 1, 1955. He graduated from BJB College in Bhubaneswar, Odisha, India in 1975 and completed his Masters degree from Utkal University, Odisha in 1978, as well as receiving the Prasant Ku Memorial Prize and the Utkal University Gold Medal. In 1988, Jena obtained his doctorate in Molecular Endocrinology from Iowa State University. Following postdoctoral experience as a Fellow of the Yale University School of Medicine, CT, USA, he became an assistant professor and then, in 2000, a tenured professor in the Department of Physiology, Wayne State University School of Medicine, MI, USA, where he founded and directed the Institute of NanoBioScience. In 2004, he was given the titles of Distinguished Professor and the George E. Palade Professor. In addition, Professor Jena has held a number of posts in hospitals and schools of medicine in affiliated institutions, as listed below.

Professor Jena is a cell biologist and chemist, who has extensively unravelled the mysteries of cell secretion with his pioneering discovery of the 'porosome', the secretory machinery in cells. His optimization of atomic force microscopy for the nanoscale imaging of cellular structure led to his discovery of the supramolecular secretory portal, the 'porosome'. This discovery has revealed the molecular mechanism that underpins the secretory process that is involved in cell-to-cell communication and homeostasis in living organisms. Many diseases such as cystic fibrosis, diabetes, neurological disorders and cancers result from defects in this secretory process. These can now be better understood, leading to the prospect of the development of new drugs and novel therapies for their treatment. In addition, Professor Jena has contributed to our understanding of the regulated transport of water through the bidirectional water transporting aquaporin (AQP) channels in cells.

Recognition of Professor Jena's achievement is illustrated by the following awards received by Prof. Jena. These are the 2024 Camurus Lipid Science Prize, the Distinguished Scientist Award from the Society for Experimental Biology and Medicine, the Swedelius Cancer Research Award, the Hallim Distinguished Award Lecture (joint with Prof. Ahmed H. Zewail), the Sir. Aaron Klug Award, the ASAS Basic Biological Science Award, the Ranbaxy Basic Research in Medical Sciences Award and the George E. Palade Gold Medal. In addition, he has been elected as Foreign Member of the Georgian National Academy of Science, fellow of the American Association for the Advancement of Science, foreign Member of the Korea Academy of Science & Technology, foreign Member of the National Academy of Medicine, Romania, member of the European Union Academy of Science, and the Academy of Scholars at Wayne State University. He has been awarded six Honorary Doctorates, including one from Babes-Bolyai University, Romania, jointly with Professors George E. Palade and Günter Blobel. He has also received the title of Distinguished Visiting Professor in a number of other institutions.

As well as in his own institution, Professor Jena has been widely involved in establishing academic and research institutions globally and translating his work to benefit society, as listed below:

1998-2000	Yale University School of Medicine	Drug and Discovery Centre	Founding Director
1999-2000	Yale University School of Medicine	Yale Cancer Centre	Full Member
2002-2006	Co-founding Director	Asian/Korean Inst. Nanosci.	Pusan National Univ.
2002	Distinguished Visiting Professor	Cell Biology	Vasile Goldis Univ.
2002-2005	Distinguished Visiting Professor	Molecular Biology	Pusan National Univ.
2002	Distinguished Visiting Professor	Physics	Vinca Research Inst.
2003	Distinguished Visiting Professor	Biology	Babes-Bolyai Univ.
2006	Distinguished Visiting Professor	Nanoscience	Agharkar Res. Inst.
2014	Honorary Professor	-	Târgu Mureş Univ.
2016	Visiting Professor	-	Aligarh Muslim Univ.
2016	Distinguished GIAN Professor	Life Sciences	Jawaharlal Nehru Univ.

2016-now	Member Advisory Board	-	Vedanta University
2016-now	Advisor	Cellular Neuroscience	Ilia State University Romania
2018-2021	President & Cofounder	QPathology LLC	Boston MA
2018-now	President & Cofounder	Porosome Therapeutics, Inc.	Boston MA
2021-now	President & Director	Molecular Medicine Inst.	Cambridge MA

Professor Jena has been honored by the institutions below:

2002	Honorary Doctorate	Vasile Goldis University, Romania
2002	Foreign Member	Korean Academy of Science and Technology
2002	Honorary Doctorate	Pusan National University, Korea
2003	Honorary Doctorate	Iuliu Hatieganu University of Medicine & Pharmacy, Romania
2003	Honorary Doctorate	Babes-Bolyai University, Romania
2003	Honorary Doctorate	Institute of Physiology, Georgian Academy of Sciences
2005	Honorary Doctorate	Carol Davila University, Bucharest, Romania
2006	Foreign Member	Romanian Academy of Medical Sciences
2012	Foreign member	Georgian National Academy of Science
2014	Honorary Professor	Târgu Mureş University, Romania
2017	Honorary Professor	University of Delhi
2017	Honorary Scientist	Victor Babes Institute. Romania
2018	Foreign member	European Union Academy of Science
2023	Honorary Professor	Maharaja Surajmal Brij University, India

Professor Jena has received prizes for his research, a selection of which is listed below:

1992	Swedish Cancer Research Award	for role of phosphatases in cell secretion
1993	Swedish Cancer research Award	for role of GTP-binding in cell secretion
1995	OHSE award, Yale University	monomeric GTP-binding proteins on cell secretion
1996	OHSE award, Yale University	monomeric GTP-binding proteins on cell secretion
2002	Hallim Distinguished Award	for porosome discovery (Korean Academy of Science)
2003	Wise and Burroughs Foundation Award	for porosome discovery (Iowa State University)
2005	Sir Aaron Klug award	mechanism of cell secretion (Mississippi State university)
2005	George E Palade award	for Porosome Discovery (Wayne State University)
2006	Maharashtra Association India	contributions to science
2006	George E Palade gold medal	excellence in medicine (Carol da Vila Univ. Romania)
2007	Basic biological science award	American Society of Animal Science
2009	Ranbaxy award	Basic research in medical science (Ranbaxy, India)
2024	Lipid Science Prize	porosome discovery, Camurus Research Foundation, Lund, Sweden

A recent article in the journal Discoveries in 2023 summarizes Professor Jena's contribution to science as follows

https://static.s123-cdn-static-d.com/uploads/5744411/secure/normal_6539c9b2a5bef.pdf

A recent dialogue with Sir. Richard: <https://youtu.be/u2jfRTyOXqg>

Nobel Prize Dialogue: <https://www.youtube.com/watch?v=2-f-TuHoX2w>

Bhanu P. Jena's discovery has had an immense impact on modern cell physiological research. Secretion is a highly regulated fundamental cellular process in living organisms, from yeast to cells in humans. Cellular cargo such as neurotransmitters in neurons, insulin in beta cells of the endocrine pancreas, or digestive enzymes in the exocrine pancreas, are all packaged and stored in membrane-bound secretory vesicles that dock and fuse at the cell plasma membrane to release their contents during secretion. The prevailing view for over 70 years was that secretory vesicles completely merge with the cell plasma membrane, emptying the entire vesicular contents outside the cell during secretion. The attention given to this all-or-none complete vesicle merger mechanism of cell secretion, held back progress in the field, even though there had been accumulating evidence favouring fractional release. For decades, the generation of partially empty secretory vesicles had been observed in electron micrographs in cells following a secretory episode, suggesting fractional release of intra-vesicular contents during cell secretion. How fractional release of intra-vesicular contents during cell secretion is accomplished with great precision, was finally elucidated by the pioneering studies by Bhanu P. Jena. This was a major breakthrough and a paradigm shift in our understanding of the secretory process in cells.