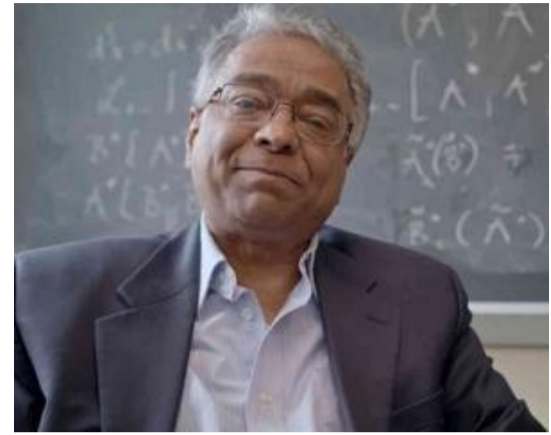


In addition to Ashtekar and Andrews, James Kasting from the College of Earth and Mineral Sciences has also been named an Atherton Professor.

Abhay Ashtekar

Ashtekar is Emeritus Holder of the Eberly Family Chair in Physics and was the founding director of the Penn State **Institute for Gravitation and the Cosmos**, which he led from 1992 to 2021.

"Abhay has had enormous influence in making Penn State an internationally recognized center of excellence for fundamental studies in gravitational physics and cosmology," said Nitin Samarth, George A. and Margaret M. Downs brough Department Head and professor of physics. "I look forward to his continued engagement as a creative scholar advancing the frontiers of fundamental theory and as an ambassador representing Penn State's leadership to the broader scientific community."



Ashtekar is a widely recognized leader in theoretical physics and focuses his research on classical general relativity and quantum gravity. Ashtekar's most prominent and creative contribution to physics is his seminal reformulation of Einstein's theory of general relativity as a gauge theory. The central piece of this reformulation is his discovery of a new set of canonical variables, now known as Ashtekar variables, that provided a powerful representation of canonical general relativity and led to an important branch of fundamental theory known as "loop quantum gravity." Thanks to his groundbreaking work, loop quantum gravity—a quantum theory of spacetime—has become a leading approach to the unification of general relativity and quantum physics that is being pursued by dozens of research groups worldwide. The Institute for Gravitation and the Cosmos that Ashtekar created at Penn State is a focal point for research worldwide into all aspects of the theory of gravity, including quantum gravity.

Renowned as one of the most-cited researchers in the field of relativity, Ashtekar has given over 200 plenary lectures at national and international conferences and workshops. Ashtekar was honored at the Loops 11 Conference "Celebrating 25 years of Loop Quantum Gravity," which in 2011 commemorated the 25th anniversary of the publication of his landmark scientific paper about loop quantum gravity that sparked a revolution within the field of spacetime physics. His previous awards and recognitions include honorary doctoral degrees from the Université de la Méditerranée in Aix-Marseille, France, in 2010, and from the Friedrich Schiller University in Jena, Germany, in 2005. In addition, in 2004, he received a Forschungspreis Award from the Alexander von Humboldt Foundation in Germany. He has written or co-written 290 scientific papers and written or co-edited nine scientific books. He has served on the editorial boards of all the major journals in his field.

Ashtekar was honored with the Einstein Prize from the American Physical Society, which recognizes outstanding accomplishments in the field of gravitational physics, in 2018. Also in 2018, he was named an Evan Pugh Professor at Penn State. In 2016, he was elected as a member of the National Academy of Sciences, one of the highest honors accorded to U.S. scientists or engineers by their peers. Ashtekar is a Fellow of the American Association for Advancement of Science and the American Physical Society. He is one of only 51 Honorary Fellows of the Indian Academy of Sciences drawn from the community of scientists living outside of India. He has held the Krammers Visiting Chair in Theoretical Physics at the University of Utrecht, Netherlands; a Senior Visiting Fellowship of the British Science and Engineering Research Council; and the Sir C. V. Raman Chair of the Indian Academy of Science. In addition, he holds a visiting professorship at the Beijing Normal University and at the Inter-University Center for Astronomy and Astrophysics in Pune, India.

Ashtekar's research also has been described widely in popular and semi-popular media, sometimes as cover stories. Publications and media outlets that have reported on his research include Nature, Science, The Economist, U.S. News and World Report, The New York Times, New Scientist, Fox News, MSNBC, and many other international publications and news sources. In addition, Ashtekar was featured in the 2008 German documentary Kosmos, which was prepared in celebration of German physicist Max Planck's 150th birthday. He also was featured prominently in a documentary shown at the year-long Berlin Einstein Exhibit in 2005. A **YouTube video on the research carried out in his group in loop quantum cosmology** has received over 400,000 views.

Ashtekar has mentored 28 Ph.D. students and over 78 post-doctoral scholars through his career. More than 60 of his advisees hold faculty positions all over the world, many holding prestigious chairs. Before joining the faculty at Penn State, Ashtekar held positions as professor, distinguished professor, and the Erastus Franklin Holden Professor of Physics at Syracuse University from 1984 to 1993. Previously, he was professor and held the chair of gravitation at the University of Paris VI in France.

Following his retirement from Penn State, Ashtekar is continuing to actively pursuing his research on theoretical aspects of general relativity and quantum gravity, focusing on four fundamental issues. He will be speaking at conferences and workshops, writing monographs and review articles, and continuing to serve on editorial boards of journals, such as an associate divisional editor at Physical Review Letters and an editor-in-chief at Advances in Theoretical and Mathematical Physics.