

# Revealing the Nature of the Cosmos



## David Weinberg

Henry L. Cox Professor of Astronomy and Distinguished Professor of Mathematical and Physical Sciences, Astronomy

### CURRENT RESEARCH

#### Maps of the cosmos provide new insights about dark energy and galaxy formation

Can you recall looking into the sky on a clear, dark night? Perhaps you were awed by the fullness of the moon, the sparkling of innumerable stars, or the faint glow of the Milky Way. It doesn't take long for the magnitude of the night sky to inspire searching questions. How old is the universe? How did it begin? How far does it go? What is it made of? How will it end? Dr. David Weinberg, of Ohio State University, studies the formation of cosmic structure, investigating how the universe went from being full of smoothly distributed hot gas to being filled with galaxies and giant structures of galaxies that extend to hundreds of millions of light years. His research addresses some of humanity's most ancient questions, once the subject of philosophical speculation but now firmly in the realm of empirical science. These questions, and the search for answers, inspire new generations of scientists, including Dr. Weinberg's ever-growing family of former students.

A central goal of Dr. Weinberg's research is to understand why the expansion of the universe is speeding up instead of slowing down. The startling phenomenon of cosmic acceleration, discovered in the 1990s, is the deepest mystery of contemporary cosmology, implying that even "empty" space is filled by an exotic "dark energy" that exerts repulsive gravity. With precise measurements from enormous cosmological surveys, Dr. Weinberg and his collaborators aim to pin down the properties of dark energy and explain why it pervades the cosmos. The complementary goal of Dr. Weinberg's work is to trace the history of galaxy formation, from tiny fluctuations of dark matter in the infant universe through to the giant pinwheels of stars that are the basic element of...

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### AFFILIATION



Ohio State University

### EDUCATION

- B.S. in Astronomy, 1985  
Yale University
- Ph.D. in Astronomy, 1989  
Princeton University

### AWARDS

- AAS Lancelot M. Berkeley-New York Community Trust Prize, 2015
- Fellow of the American Association for the Advancement of Science, 2009
- Ohio State University Distinguished Scholar Award, 2006
- Porter Ogden Jacobus Fellowship, Princeton University, 1989
- DeForrest Pioneers Award for creative achievement in physics, Yale University, 1985

### RESEARCH AREAS

Technology, Space, Space

### FUNDING REQUEST

Your contributions will support the continued research of Dr. David Weinberg as he researches some of the oldest questions in science. Funding of \$40K supports a graduate student and \$80K supports a postdoctoral researcher for a year. Even a few \$K contribution is valuable, enabling students to travel to conferences or collaboration meetings to present their work and meet other researchers. In choosing to support Dr. Weinberg's research, you will play a role in revealing the history of the universe.