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Celebrating the unity of Science



PUBLIC LECTURE AND PANEL DISCUSSION

The Usefulness of Useless Knowledge

ABRAHAM FLEXNER

With a companion essay by
ROBBERT DIJKGRAAF

PUBLIC LECTURE

In 2017, Princeton University Press published *The Usefulness of Useless Knowledge*, in which Dijkgraaf and IAS founding Director Abraham Flexner articulate how essential basic research and original thinking are to innovation and societal progress – a belief that has informed the mission of the Institute for nearly ninety years.

In his classic essay, *The Usefulness of Useless Knowledge*, Abraham Flexner, the founding director of the Institute for Advanced Study in Princeton and the man who helped bring Albert Einstein to the United States, describes a great paradox of scientific research. The search for answers to deep questions, motivated solely by curiosity and without concern for applications, often leads not only to the greatest scientific discoveries but also the most revolutionary technological breakthroughs. In short, no quantum mechanics, no computer chips. Robbert Dijkgraaf, the Institute's current director, explains how Flexner's defense of the value of 'the unobstructed pursuit of useless knowledge' may be even more relevant today than it was in the early twentieth century. Dijkgraaf describes how basic research has led to major transformations in the past century and explains why it is an essential precondition of innovation and the first step in social and cultural change.



ROBBERT DIJKGRAAF
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Robbert Dijkgraaf, Director of the Institute for Advanced Study and Leon Levy Professor since July 2012, is a mathematical physicist who has made significant contributions to string theory and the advancement of science education.

His research focuses on the interface between mathematics and particle physics. In addition to finding surprising and deep connections between matrix models, topological string theory, and supersymmetric quantum field theory, Dijkgraaf has developed precise formulas for the counting of bound states that explain the entropy of certain black holes. For his contributions to science, Dijkgraaf was awarded the Spinoza Prize, the highest scientific award in the Netherlands, in 2003. He was named a *Knight of the Order of the Netherlands Lion* in 2012 and is a member of the American Academy of Arts and Sciences and the American Philosophical Society.

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