

# Feb. 18, Dr. Alexander Szalay, The Fourth Paradigm: How Big Data is Changing Science



## SYNOPSIS:

This talk will describe how science is changing as a result of the vast amounts of data we are collecting from gene sequencers to telescopes and supercomputers. This "Fourth Paradigm of Science," predicted by Jim Gray, is moving at full speed, and is transforming one scientific area after another. The talk will present various examples on the similarities of the emerging new challenges and how Jim Gray's vision is realized by the scientific community. Scientists are increasingly limited by their ability to analyze the large amounts of complex data available. These data sets are generated not only by instruments but also computational experiments; the sizes of the largest numerical simulations are on par with data collected by instruments, crossing the petabyte threshold this year. The importance of large synthetic data sets is increasingly important, as scientists compare their experiments to reference simulations. All disciplines need a new "instrument for data" that can deal not only with large data sets but the cross product of large and diverse data sets. There are several multi-faceted challenges related to this conversion, e.g., how to move, visualize, analyze, and in general interact with petabytes of data.

[Session details...](#)

## BIO:

Alexander Szalay is a Bloomberg Distinguished Professor of Astronomy and Computer Science at the Johns Hopkins University. Dr. Szalay is the Director of the Institute for Data Intensive Science. He is a cosmologist, working on the statistical measures of the spatial distribution of galaxies and galaxy formation. He is a Corresponding Member of the Hungarian Academy of Sciences, and a Fellow of the American Academy of Arts and Sciences. In 2004 Dr. Szalay received an Alexander Von Humboldt Award in Physical Sciences and, in 2007, the Microsoft Jim Gray Award. In 2008 he became Doctor Honoris Causa of the Eotvos University, Budapest. He enjoys playing with Big Data.

## SUMMARY:


**Topic:** The Fourth Paradigm: How Big Data is Changing Science

**Speaker:** Dr. Alexander Szalay

**Date:** Wednesday, February 18, 2015

**Time:** 11 AM – 12 PM ET

You are invited to listen to Dr. Szalay's presentation in Room 2W910-912 in the NCI Shady Grove Building on Medical Center Drive or via WebEx.

**Presentation:** View the [presentation slides](#). A screen cast of the presentation will be available for viewing after the event on the [NCI CBIIT Speaker Series YouTube Playlist](#) 

## *About the NCI CBIIT Speaker Series:*

The National Cancer Institute (NCI) Center for Biomedical Informatics and Information Technology (CBIIT) Speaker Series is a bi-weekly knowledge-sharing forum featuring both internal and external speakers on topics of interest to the biomedical informatics and research communities. For additional information, including past speaker series presentations, visit the [CBIIT Speaker Series page](#).

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