

BREAKTHROUGH PRIZE IN FUNDAMENTAL PHYSICS

Koret Taube Conference Center, SIEPR
Monday, November 10, 2014

AGENDA

11:00 a.m. **WELCOME**
Peter Michelson, *Chair, Department of Physics, Stanford University*

SESSION I: COSMOLOGY

Session chaired by Yasunori Nomura, *University of California, Berkeley*

11:05 a.m. **Andrei Linde**, *"Inflation and de Sitter Vacua in Supergravity and String Theory"*

11:20 a.m. **Question and Answer Session**

11:25 a.m. **Uros Seljak**, *"Mining Cosmological Data in Search of Fundamental Physics"*

11:40 a.m. **Question and Answer Session**

11:45 a.m. **Juan Maldacena**, *"Quantum Mechanics in the Early Universe"*

12:00 p.m. **Question and Answer Session**

12:05 p.m. **LUNCH**

SESSION II: QUANTUM INFORMATION

Session chaired by Xiaoliang Qi, *Stanford University*

1:00 p.m. **Joe Polchinski**, *"Spacetime versus Quantum Mechanics"*

1:20 p.m. **Question and Answer Session**

1:25 p.m. **John Preskill**, *"Emergent Quantum Mechanics"*

1:40 p.m. **Question and Answer Session**

1:45 p.m. **Patrick Hayden**, *"It from Qubit (Part 1): Geometry as Compression"*

2:00 p.m. **Question and Answer Session**

2:05 p.m. **BREAK**

SESSION III: QUANTUM GRAVITY AND PARTICLE PHYSICS

Session chaired by Raphael Bousso, *University of California, Berkeley*

2:25 p.m. **Nati Seiberg**, *“What is Quantum Field Theory?”*

2:40 p.m. **Question and Answer Session**

2:45 p.m. **Steve Shenker**, *“Holographic Chaos”*

3:00 p.m. **Question and Answer Session**

3:05 p.m. **Alexei Kitaev**, *“Hidden Correlations in the Hawking Radiation and Thermal Noise”*

3:20 p.m. **Question and Answer Session**

3:25 p.m. **Nima Arkani-Hamed**, *TBD*

3:40 p.m. **Question and Answer Session**

3:45 p.m. **BREAK**

4:05 p.m. **PANEL DISCUSSION**

Introduction by Peter Michelson, *Stanford University*

The three joint-winners of the 2015 Breakthrough Prize in Fundamental Physics will speak with moderator and Breakthrough Prize Founder, Yuri Milner.

5:00 p.m. **CLOSING REMARKS**