

The Physics of The Universe Summit, POTUS2014

Information, Entanglement & The Dark Universe (NYU/CUSP 19-21 September 2014)



Friday, 19 September 2014

19:00 - 21:30 POTUS [Reception & Dinner](#) (sponsored by Nick and Susan Pritzker)
Location: Andaz Wall Street, Bar/Wall & Water Lounge

Saturday, 20 September 2014

07:00 - 08:20 [Breakfast](#), Andaz Wall Street, Wall & Water Lounge

08:30 - 09:00 Buses to NYU, Kimmel Center Location: Andaz Wall Street (Foyer)

09:00 **Welcome to NYU**

09:10 - 12:30 From CMB to inflation and Gravitational Waves: *observations and theories*
Convener: Michael Turner (Convener), Lyman Page (Convener), Discussants Paul Steinhardt, Matias Zaldarriaga, Neil Turok, Raphael Bousso

Location: NYU Kimmel Center 5th Floor (Colloquium Room)

09:10 **BICEP2 : Update & Perspective 25'**
Speaker: Jeff Filippini

09:40 **Planck : Update & Perspective 25'**
Speaker: Dick Bond

10:05 [Coffee Break 20'](#)

10:25 **Implications of the CMB Polarization Data 25'**
Speaker: Raphael Flauger

10:55 **The Range of r in String Theory 25'**
Speaker: Eva Silverstein

11:20 **Convener & Discussant Remarks/Audience Discussion 1h0'**
Speaker: Michael, Lyman, Matias, Paul, Neil

12:30 - 13:30 [Lunch](#) Kimmel Center 5th Floor (Colloquium Room Foyer)

13:30 - 15:00 Policy Roundtable: Models of International Collaboration

Convener: Maria Spiropulu, Discussants: David Gross, Jim Siegrist, Steve Koonin, Bill Colglazier, Joe Lykken, Harvey Newman, Angela Olinto, Roky Kolb, Roger Blandford, Michael Turner, Steve Binkley, Nima Arkani-Hamed, Elena Aprile

Location: Kimmel Center 5th Floor (Colloquium Room)

15:10 - 16:30 Gravity & Quantum Entanglement

Convener: David Gross

Location: Kimmel Center 5th floor (colloquium Room)

15:10 **Entanglement & Space-Time Emergence 25'**
Speaker: Juan Maldacena

15:40 **Einstein Equations From Quantum Entanglement 25'**
Speaker: Brian Swingle

16:10 **Discussion 20'**
Speaker: David Gross, Erik Verlinde, Raphael Bousso, Gia Dvali

16:30 - 16:45 [Coffee Break](#)

16:45 - 18:00 Dark Matter Perspectives (I)

Convener: Kathryn Zurek

16:50 **New Directions in Searching for the Dark Universe 25'**
Speaker: Surjeet Rajendran

17:20 **Dark Matter Puzzles 30'**
Speaker: Jerry Ostriker

18:10 - 18:30 Buses from Kimmel Center to Andaz Wall Street
Location: Kimmel Center

19:00 - 22:00 POTUS2014 [Gala](#) (sponsored by Marty & Sarah Flug) Location: Andaz Wall Street Wall & Water Lounge & Restaurant

Sunday, 21 September 2014

07:00- 08:20 [Breakfast](#) Andaz Wall Street, Wall & Water Lounge

8:30 - 09:00 Buses to CUSP

09:00 **Welcome to CUSP (Steven Koonin)**

09:10 - 10:30 **Dark Matter Perspectives (II)**

Convener: Joe Lykken

Location: CUSP, Jacobs Room

09:10 **Direct DM Detection: Perspective on Future Challenges and Opportunities** 25'

Speaker: Elena Aprile

09:35 **Dark Matter: Theory New Perspectives** 25'

Speaker: Kathryn Zyrek

10:00 [Coffee Break](#) 15'

10:30 - 12:15 **Dark Matter & the Galactic Center**

Convener: Neal Weiner

Location: CUSP Jacobs Room

10:30 **Anatomy of the 3.5 keV Line Signal** 25'

Speaker: Maxim Markevitch

10:55 **The GeV Excess Around the Galactic Center** 25'

Speaker: Tracy Slayter

11:20 **Galactic Center Results from Fermi** 25'

Speaker: Simona Murgia

11:45 **Discussion** 30'

Speaker: Doug Finkbeiner, Tim Tait, Michael Turner

12:15 - 13:15 [Lunch](#) CUSP Pantry

13:15 - 16:15 **Black Holes, Entanglement and our Quantum Universe**

Convener: Daniel Harlow, Eva Silverstein

Location: CUSP Jacobs Room

13:15 **Lessons from the Firewall Debate (I)** 25'

Speaker: Raphael Bousso

13:45 **Lessons from the Firewall Debate (II)** 25'

Speaker: Herman Verlinde

14:15 **Discussion** 25'

Speaker: Daniel Harlow, Eva Silverstein

14:45 **Topological Order & Emergence of Light and Electrons** 25'

Speaker: Xiao-Gang Wen

15:15 **Emergent Gravity & The Dark Universe** 25'

Speaker: Erik Verlinde

15:45 [Coffee Break](#) 30'

16:15 - 17:45 **Data & The City (NY) -- Data & The Universe**

Convener: Maria Spiropulu

Location: CUSP Jacobs Room

16:15 **The Data Wave: Applications and Impact from Astro- to Bio** 20'

Speaker: Joshua Bloom

16:45 **Big Data and Exoplanets** 20'

Speaker: David Hogg

17:15 **Better Cities through Imaging** 20'

Speakers: Steven Koonin, Greg Dobler

17:45 - 19:00 [Closing Reception](#) Location: CUSP Pantry

19:00 - 19:30 Buses to Andaz Wall Street

POTUS2014 is supported by The Kavli Foundation, Caltech's Physics Math and Astronomy, NYU & David Iakobashvili, Nick & Susan Pritzker and Marty & Sarah Flug