

Princeton Center for Theoretical Science

The Princeton Center for Theoretical Science is dedicated to exploring the frontiers of theory in the natural sciences. Its purpose is to promote interaction among theorists and seed new directions in research, especially in areas cutting across traditional disciplinary boundaries.

The Center is home to a corps of Center Postdoctoral Fellows, chosen from nominations made by senior theoretical scientists around the world. A group of senior Faculty Fellows, chosen from science and engineering departments across the campus, are responsible for guiding the Center. Center activities include focused topical programs chosen from proposals by Princeton faculty across the natural sciences. The Center is located on the fourth floor of Jadwin Hall, in the heart of the campus "science neighborhood". The Center hopes to become the focus for innovation and cross-fertilization in theoretical natural science at Princeton.

Faculty Fellows

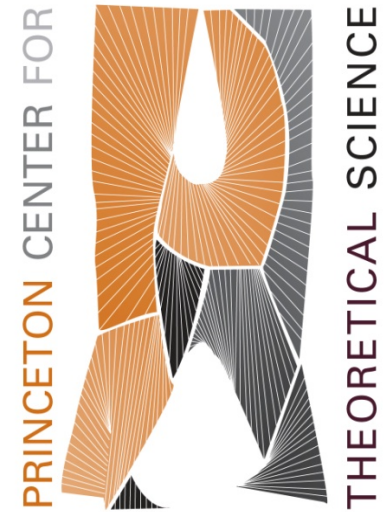
Paul Steinhardt, Director
Igor Klebanov, Associate Director
Adam Burrows
Curtis Callan
Garnet Chan
Pablo Debenedetti
David Huse
Jeroen Tromp

Center Postdoctoral Fellows

Ian Abel 2013-2016
Daniel Harlow 2012-2015
Yoav Kallus 2011-2014
Samuel Lee 2012-2015
Yi Li 2013-2016
David Limmer 2013-2016
Joseph Maciejko 2011-2014
Elisabetta Matsumoto 2011-2014
Rahul Nandkishore 2012-2015
Titus Neupert 2013-2016

To find out more about Center Postdoctoral Fellowships and Programs see:

<http://pcts.princeton.edu/pcts>



Searching for Simplicity

12-15 May 2014

Jadwin Hall, Room 407

Organizers

Neil Turok, Perimeter Institute
Paul Steinhardt, Princeton University

Searching for Simplicity

Monday, May 12, 2014

12:30-2:00 Lunch at PCTS

Introduction/Overview

2:00-3:00 "The Stability of the Electroweak Vacuum"
Jose Ramon Espinosa Sedano, IFAE

3:00-4:00 "Overview of Alternatives to Cosmological Inflation"
Robert Brandenberger, McGill University

4:00-4:30 Coffee

4:30-5:30 "Current and Future CMB Polarization Data: An Experimentalist's View"
Suzanne Staggs, Princeton University

5:30 pm Light Supper: Pizza and Drinks at PCTS

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Tuesday, May 13, 2014

Higgs

9:00-10:00 "The Origin of the Higgs Mass"
Christopher Hill, Fermilab
Commenter: Mariangela Lisanti, Princeton University

10:00-11:00 "The Higgs and dark matter"
Joseph Lykken, Fermilab
Commenter: Burt Ovrut, University of Pennsylvania

11:00-11:30 Coffee

11:30-12:30 "New physics without new energy scale"
Mikhail Shaposhnikov, Ecole Polytechnique Federale De Lausanne, Switzerland
Commenter: Itzhak Bars, University of Southern California

12:30-2:00 Lunch at PCTS

Eternal Inflation

2:00-3:00 "A Corpuscular Theory of Inflation."
Gia Dvali, NYU
Commenter: Paolo Creminelli, IAS/ICTP

3:00-4:00 Infinity, tuning and probability in the multiverse.
Andreas Albrecht, UC Davis
Commenter: Jean-Luc Lehners, Max Planck Institute for Gravitational Physics

4:00-4:30 Coffee

4:30-5:30 "On Quantum Tunneling"
Neil Turok, Perimeter Institute
Commenter: Robert Brandenberger, McGill University

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Wednesday, May 14, 2014

Conformal Symmetry

9:00-10:00 "Some Cosmological Consequences of Conformal Symmetry"
Itzhak Bars, University of Southern California
Commenter: Anna Ijjas, Princeton University

10:00-11:00 "Conformal Standard Model and the stability of the electroweak scale"
Krzysztof Meissner, University of Warsaw, Poland
Commenter: Igor Klebanov, Princeton University

11:00-11:30 Coffee

11:30-12:30 "Renormalization and Weyl invariance"
Roberto Percacci, SISSA
Commenter: Neil Turok, Perimeter Institute

12:30-2:00 Lunch at PCTS

Other Approaches

2:00-3:00 "Revisiting the no-boundary proposal for inflationary and ekpyrotic cosmology"
Jean-Luc Lehners, Max Planck Institute for Gravitational Physics
Commenter: Alex Dahlen, UC Berkeley

3:00-4:00 "Non-Commutative Geometry, Non-Associative Geometry and the Standard Model of Particle Physics"
Latham Boyle, Perimeter Institute
Commenter: Herman Verlinde, Princeton University

4:00-4:30 Coffee

4:30-5:30 "Toward an Entropic Theory of Dark Matter."
Erik Verlinde, University of Amsterdam
Commenter: Justin Khoury, University of Pennsylvania

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Thursday, May 15, 2015

9:30-11:00 Special Event

11:00-11:30 Coffee

11:30-12:30 Brainstorming

12:30-2:00 Conclusion and Lunch at PCTS