

DEPARTMENT OF PHYSICS COLLOQUIA

Fall 1999 Schedule

August 30

Randall D. Kamien - University of Pennsylvania

Title: Liquid Crystalline Phases of DNA

September 6

Sara A. Solla – Northwestern University

Title: The Dynamics of Learning from Examples

September 13

Anton Zeilinger - University of Vienna, Austria

Title: Quantum Teleportation and the Nature of Information

September 20 – The Thomas Gold Lecture Series

Bohdan Paczynski – Princeton University

Title: Gravitational Microlensing and the Search for Dark Matter

September 27

Carlos Rovelli – University of Pittsburgh and Centre de Physique Theorique de Luminy, France

Title: Non Perturbative Quantum Gravity

October 4

Eric Siggia – Cornell University

Title: Theory and the Yeast Genome

October 11 – FALL BREAK

October 18

Edward Blucher – University of Chicago

Title: Investigating Difference between Matter and Antimatter

October 25

Venky Narayanamurti – Harvard University

Title: Condensed-Matter and Materials Physics: Basic Research for Tomorrow's Technology

November 1 – The Kieval Lecture

Steve Vogel – Duke University

Title: Locating Life's Limits with Dimensionless Numbers

November 8

Edward Kearns – Boston University

Title: The Mysteries of Missing Neutrino's: Latest Results from Super-K

November 15

Paul Steinhardt – University of Pennsylvania

Title: The Quintessential Universe

November 22

Dan Ralph – Cornell University

Title: Torques and Tunneling in Nano-Magnets

November 29

William Phillips – NIST

Title: Almost Absolute Zero: The Story of Laser Cooling and Trapping

Spring 2000 Schedule

January 24

Patrick Lee – Massachusetts Institute of Technology

Title: Heisenberg Model and d-wave Superconductivity: Spin Chirality Finally Coming out of Hiding

January 31

Laura H. Greene – University of Illinois at Urbana-Champaign

Title: Tunneling into High-Temperature Superconductors: Spectroscopy of Broken Symmetries

February 7

Jean Carlson – University of California at Santa Barbara

Title: Complexity and Robustness

February 14

Sue Coppersmith – University of Chicago

Title: Force Fluctuations in Granular Materials

February 21

Brian Greene – Cornell University

Title: String Theory and the Fabric of Spacetime

February 28

Ira Wasserman – Cornell University

Title: The Expansion of the Universe

March 6

Michael Devoret – Yale University

Title: Single Electron Transfer in Tunnel Junction Circuits

March 13

Sebastien Balibar – Ecole Normale Supérieure (Paris) and Harvard University

Title: Nucleation: Bubbles, Crystals and Superfluids

March 20 – SPRING BREAK

March 27

Wendy Freedman – Carnegie Observatory

Title: The Hubble Space Telescope Key Project to Measure the Hubble Constant

April 3

Joseph Veverka – Cornell University

Title: Exploring Eros: The First Detailed Spacecraft Study of an Asteroid

April 10

Sir Michael Berry – Bristol University and Andrew D. White Professor-at-Large

Title: Extreme Twinkling, and its Opposite

April 17

Lars Bildsten - University of California at Santa Barbara

Title: Gravitational Radiation from Accreting Neutron Stars: Implications for Millisecond Pulsar Formation and LIGO

April 24

Joseph D. Lykken – Fermi National Accelerator Laboratory

Title: The Search for Extra Dimensions

May 1

Dan Akerib – Case Western Reserve

Title: Looking for WIMPs in the Galactic Halo: The Cryogenic Dark Matter Search

May 8 – The Bethe Lectures

Steve M. Block – Stanford University

Title: Sensory Transduction: Clever Physics by Dumb Organisms

Fall 2000 Schedule

August 28

Hans Bethe – Cornell University

Title: Gamma-Ray Bursts and Hypernovae

September 4

Donald Umstadter – University of Michigan at Ann Arbor

Title: Ultra-High Intensity Laser-Plasma Interactions: Progress, Prospects and Applications

September 11 – The Barbara Cooper Lecture

Ellen D. Williams – University of Maryland

Title: Fluctuations and Stability of Nanostructures

September 18

Andrew Strominger – Harvard University

Title: String Theory and Black Holes

September 25 – The Thomas Gold Lecture Series

Clifford Will – Washington University

Title: Einstein's Relativity put to Nature's Test: A Turn-of-the-Century Perspective

October 2, Joint with Nonlinear Systems

Leo Kadanoff – University of Chicago

Title: Making a Splash, Breaking a Neck: The Development of Complexity in Physical Systems

October 9 - FALL BREAK

October 16

David Muller – Bell Labs, Lucent Technologies

Title: How Small is Too Small? Understanding the Electronic Structure of Atomic-Scale Transistors

October 23

Z. Jane Wang – Cornell University

Title: Unsteady Aerodynamics of Insect Flight

October 30

Andy Ruina – Cornell University

Title: The Possible Physics (Mechanics) of Walking

November 6

John Ruhl – University of California at Santa Barbara

Title: Cosmology from the Microwave Background: Boomerang and Beyond

November 13, Joint with Astronomy

Dave Stevenson – California Institute of Technology

Title: Origin of the Earth and Moon

November 20

Barbara Jacak – SUNY, Stonybrook

Title: High-Energy Heavy Ion Collisions: The Physics of Super-Dense Matter

November 27

Daniel P. Lathrop – University of Maryland

Title: Liquid Sodium Laboratory Models of the Earth's Outer Core

Spring 2001 Schedule

January 22

Robert F. Gilmour, Jr. – Cornell University
Title: Electrical Restitution and Cardiac Fibrillation

January 29

Eanna Flanagan – Cornell University
Title: Unstable Rossby Modes in Newly Born Neutron Stars

February 5

Francis J. DiSalvo – Cornell University
Title: The Search for New Thermoelectric Materials or How Does a Condensed Matter Physicist Exploit Chemistry

February 12

Charles Marcus – Harvard University
Title: Small Electronics and Quantum Chaos

February 19

Raman Sundrum – John Hopkins University
Title: Extra Dimensions, the Hierarchy Problem and Gravitational Resonances at Particle Colliders

March 5

Sidney Redner – Boston University
Title: The Statistical Mechanics of Popularity

Mar. 12, Joint with Peace Studies Program and Science and Technology Studies

Jeremiah Sullivan – University of Illinois at Urbana-Champaign
Title: Prospects for the Comprehensive Test Ban Treaty

March 26

Richard Galik – Cornell University
Title: Measurements of the Michel Parameters in Lepton Decays

April 2

Glennys Farrar – New York University
Title: Ultra-High Energy Cosmic Rays: Astrophysics Causing Trouble for Particle Physics, or Vice Versa?

April 9

Anupam Garg – Northwestern University
Title: Spin Tunneling: Magnetic Molecules and Mathematical Mysteries

Apr. 16 – The Bethe Lectures

Wick C. Haxton – University of Washington
Title: Solar Neutrinos and Neutrino Oscillations

Apr. 23 The Bethe Lectures

Wick C. Haxton – University of Washington
Title: Supernovae and Nucleosynthesis

April 30

Hal Evans – Columbia University

Title: The D0 Experiment: Now . . . and Later

Fall 2001 Schedule

September 3

Edwin Salpeter – Cornell University

Title: Heavy Elements in the Galaxy and Tuberculosis in the USA

September 10

Sol Gruner and Maury Tigner – Cornell University

Title: Energy Recovery Linac

September 17

Josh Klein – University of Pennsylvania

Title: The Sudbury Neutrino Observatory and the Solar Neutrino Problem

September 24

Juan Maldacena – Harvard University

Title: QCD, Strings and Black Holes: The Large N Limit of Field Theories and Gravity

October – The Salpeter Lecture Series

John Carlstrom – University of Chicago

Title: A New Measurement of Cosmic Microwave Background Anisotropy from the South Pole

October 8 - Fall Break

October 15

Sidney Redner – Boston University

Title: The Statistical Mechanics of Popularity

October 22 – The Kieval Lecture

Eric Cornell – NIST

Title: Artifice and Equilibrium: Experiments with Synthetic and Natural Vortices in a Superfluid Gas

October 29

Ray Goldstein – University of Arizona

TBA

November 5

J.C. Seamus Davis – UC Berkeley

Title: Using Individual Impurity Atoms to Study High-Tc

November 12

Richard L. Liboff – Cornell University

Title: Quantum Billiards and Quantum Chaos

November 19 – No Colloquium

November 26

A.J. Stewart Smith – Princeton University

Title: Observation of CP Violation at the B Factories

December 3

David Hammer – Cornell University

Title: Studies of Extremely High Energy Density Plasmas with Picosecond Time Resolution

Spring 2002 Schedule

January 21

Matthias Neubert – Cornell University

Title: Flavor Delicacies (A Tour Trough the Mysteries of Matter)

January 28

Riccardo Giovanelli – Cornell University

Title: Into Thin Air: The Atacama Telescope Project

February 4

Dong Lai – Cornell University

Title: Matter and Radiation in Superstrong Magnetic Fields

February 11

Barbara A. Baird – Cornell University

Title: A Biophysical View of Immune Receptor Action

February 18

Serge Lemay – Delft University

Title: Two-Dimensional Imaging of Electronic Wavefunctions in Carbon Nanotubes

February 25 – The Bethe Lectures

Stanford Woosley – UC Santa Cruz

Title: Core Collapse Supernovae

March 4 - BETHE LECTURE

Stanford Woosley – University of California at Santa Cruz

Title: Type Ia Supernovae

March 11

Hitoshi Murayama – University of California at Berkeley

Title: Big World of Small Neutrinos

March 18 – Spring Break

March 25, Joint with Cornell Libraries

Marty Blume – Editor in Chief, APS

Title: The Physical Review and Physics Publishing: Past and Future

April 1

Lawrence Krauss – Case Western Reserve University

Title: Life, the Universe, and Nothing: The Future of Life in an Expanding Universe

April 8

Csaba Csaki – Cornell University

Title: The Physics of Extra Dimensions

April 15

Susanne Arney – Bell Labs., Lucent Technologies

Title: Design for Reliability of MEMS/MOEMS for Lightwave Telecommunications

April 22 – The Thomas Gold Lecture Series

Frank Shu – President, Tsinghua University, Hsinchu, Taiwan

Title: Protostellar Winds and Jets

April 29

Karel Svoboda – Cold Springs Harbor Imaging Synaptic

Title: Function in the Brain

Fall 2002 Schedule

September 2

Katepalli Sreenivasan – Yale University

Title: Cosmic Background Radiation and Hydrodynamic Turbulence

September 9

Mark Chen – Queens University, Kingston, Ontario, Canada

Title: Solving the Solar Neutrino Problem with the Sudbury Neutrino Observatory

September 16

Paul McEuen – Cornell University

Title: Electronics and Mechanics with Single Molecules

September 23

David Huse – Princeton University

Title: Quantum Phase Transitions in Randomly Inhomogeneous Solids

September 30

Nima Arkani-Hamad – Harvard University

Title: Adventures in Theory Space

October 7 – The Bethe Lectures

Carl E. Wieman – University of Colorado at Boulder

Title: Resonant BEC

October 14 – Fall Break

October 21 – The Parratt Memorial Lecture

Stuart Raby – Ohio State University

Title: The Puzzle of Charge and Mass

October 28

Lawrence Gibbons – Cornell University

Title: Probing HEP's Bose-Einstein Condensate: The Physics Potential of a Linear e^+e^- Collider

November 4

Matthew P.A. Fisher – University of California at Santa Barbara

Title: Cuprates Amiss: Subtle Simplicity or a Matted Mess

November 11

Krishna Rajagopal – Massachusetts Institute of Technology

Title: The Condensed Matter Physics of QCD

November 18

Allen MacDonald – University of Texas at Austin

Title: Ferromagnetism in Diluted Magnetic Semiconductors

November 25

Avi Loeb – Harvard University

Title: The First Source of Light in the Universe

December 2

David DiVincenzo – IBM, T.J. Watson Research Center

Title: Prospects for Quantum Computation

Spring 2003 Schedule

January 20

Kurt Gottfried - Cornell University

Title: P.A.M. Dirac and the Discovery of Quantum Mechanics

January 27

Naomi Makins - UIUC

Title: Spin Structure of the Proton: Recent Results from HERMES

February 3

Dr. V. Sahakian - Cornell University

Title: String Theory without Equations

February 10

Paul Selvin - University of Illinois, Urbana-Champaign

Title: Nanometer Resolution with Single Molecule Fluorescence Imaging: Application to Biomolecular Motors

February 17

Henry Kelly - President of the Federation of American Scientists

Title: The Future of National Science Policy

February 24

Nitin Samarth - Pennsylvania State University

Title: Semiconductor Spintronics

March 3

Lynn Orr - University of Rochester

Title: Why is the Top Quark Special, and How Can We Exploit It?

March 10

Mats Selen - University of Illinois

Title: Education in Bulk: The Introductory Physics Courses Revisions at Illinois

March 17 - SPRING BREAK

March 24 – The Bethe Lectures

Bert Halperin - Harvard University

Title: One-Dimensional Metals in Theory and Experiment

March 31

Hasam Padamsee - Cornell University

Title: Will Superconductivity Propel the Next-Generation Accelerators?

April 7

David Spergel - Princeton University

Title: MAP First Year Results: Implications for Cosmology

April 14

Aida El Khadra - University of Illinois, Urbana-Champaign
Title: The Charm and Beauty of Lattice QCD

April 21

Daniel Gauthier - Duke University
Title: Controlling Cardiac Dynamics

April 28 – The Salpeter Lecture Series

Shri Kulkarni - California Institute of Technology
Title: Gamma-Ray Bursts: Brilliant Explosions Across the Universe

Fall 2003 Schedule

September 8

Michelle Wang - Cornell University

Title: Probing Gene Expression and Regulation at the Single Molecule Level

September 15

Stuart Freedman - University of California at Berkeley

Title: First Results from KamLAND

September 22

Eshen Ben-Jacob - Tel Aviv University

Title: Why Bacteria Go Complex: Higher Flexibility for Better Adaptability

September 29

Scott A. Diddams - National Inst of Standards, Boulder, Colorado

Title: Optical Atomic Clocks: Science and Metrology on the Femtosecond Time Scale

October 6

Martin Schmaltz - Boston University

Title: New Physics at the LHC: Maybe the Little Higgs

October 13 - FALL BREAK

October 20

Qun Shen – Cornell University

Title: X-Ray Imaging and Microscopy Applications and Future Opportunities with an ERL Source

October 27

Carlos Bustamante - University of California at Berkeley

Title: Grabbing the Cat by the Tail: Studies of the Packaging of DNA by Single Ph29 Bacteriophage Particles using Optical Tweezers

November 3

Valery Nesvizhevsky - Institute Laue - Langevin, France

Title: Quantum States of Neutrons in the Gravitational Field, Short-Range Forces and Interaction of Ultracold Neutrons with Nanoparticles

November 10

Boris Altshuler - Princeton University and NEC Laboratories-America

Title: Disorder + Interactions in Electronic Systems

November 17

Bob Ecke - Los Alamos National Laboratory

Title: Granular Chains: Knots, Random Walks and Statistical Mechanics

November 24

Jim Cordes - Cornell University

Title: The Radio Universe: Arecibo and Next Generation Radio Telescopes

December 1

Gerald Gabrielse - Harvard University

Title: Observations of Cold Antihydrogen and Fundamental Measurements

Spring 2004 Schedule

January 26

Gerry Jackson - Hbar Technologies. LLC
Title: Chasing the Dream of Antimatter Commercialization

February 2

Harold Rose - LBL - Government
Title: State and Prospects of Aberration-Corrected High-Resolution Energy-Filtering Electron Microscopes

February 9

Gabriela Gonzalez - Louisiana State University
Title: Gravitational Waves: New Eyes for Physics and Astronomy

February 16

Greg Landsberg - Brown University
Title: Out-of-This World Physics: Probing Quantum Gravity in the Lab

February 23

Abraham Stroock - Cornell University
Title: Patterning Microflows

March 1

Sivan Kartha - Stockholm Environment Institute's Climate Program
Title: The Carbon-Hydrogen Bond: How Strong is the Interaction between Global Warming and the "Hydrogen Economy?"

March 8

Subir Sachdev - Yale University
Title: Quantum Phase Transitions: From Mott Insulators to the Cuprate Superconductors

March 15

Joanna Aizenberg - Bell Laboratories, Lucent Technologies
Title: Lessons in Optics from the Deep

March 22 - SPRING BREAK

March 29 – The Thomas Gold Lecture Series

Charles Townes - University of California

April 5

Viet Elser - Cornell University
Title: Phase Retrieval with Atoms, Bits and Pixels

April 12 – The Bethe Lectures

Bruce Winstein - University of Chicago
Title: The Allure of the Neutral Kaons

April 19 – The Bethe Lectures

Bruce Winstein - University of Chicago

Title: Searching for Patterns in the Polarization of the Cosmic Microwave Background Radiation

April 26 – The Kieval Lecture

David Spergel - Princeton University

Title: WMAP and Beyond: Implications of Microwave Background Observations

May 3 – The Salpeter Lecture Series

Andrea Ghez - University of California at Los Angeles

Title: Unveiling a Supermassive Black Hole at the Center of Our Galaxy

FALL 2004 Schedule

August 30

Bruce Knuteson - Massachusetts Institute of Technology

Title: Searching for a Guaranteed Surprise: Systematic Analysis of Frontier Energy Collider Data

Sept. 6 – Labor Day, No Colloquium

September 13

Juan Carlos Campuzano - University of Illinois

Title: What Does Photoemission Tell us About the Electrons in High Temperature Superconductors?

September 20

Cumrun Vafa - Harvard University

Title: Quantum Foam and Melting Crystal

September 27

Daniel Kleppner - Massachusetts Institute of Technology

Title: Can A Boost-Phase Intercept System Assist Missile Defense?

October 4

David R. Nelson - Harvard University

Title: Spherical Crystallography: Virus Buckling and Grain Boundary Scars

October 11 -FALL BREAK

October 18 – The Bethe Lectures

Albert Libchaber - Rockefeller University

Title: Some Physical Aspects of the Origin of Life and of Artificial Cells

October 25 – The Bethe Lectures

Albert Libchaber - Rockefeller University

Title: From Physics Techniques to Biological Observation

November 1

Peter Lepage - Cornell University

Title: The Fall and Rise of Lattice QCD, Part II: High-Precision Lattice QCD Confronts Experiment

November 8

Roy Briere - Carnegie Mellon University

Title: First Results from CLEO-c and CESR-c

November 15

Michael Peskin - Stanford University

Title: The International Linear Collider: The Next Step in High-Energy Electron-Positron Physics

November 22

Sidney Nagel - University of Chicago

Title: Physics and the Breakfast Table

November 29 – The Thomas Gold Lecture Series
Geoff Marcy - University of California at Berkeley
Title: The Properties of Planetary Systems

Spring 2005 Schedule

January 24

Dung-Hai Lee - University of California at Berkeley
Title: From Landau Order to Topological Order

January 31 – No Colloquium

February 7

Ben Widom - Cornell University
Title: What's New with Gibb's Absorption Equation

February 14

Steve Squyres - Cornell University
Title: Science Results from the Mars Exploration Rover Mission

February 21

Wolfgang Ketterle - Massachusetts Institute of Technology
Title: Bose-Einstein Condensation of Atoms, Molecules, and Fermion Pairs

February 28

Alexander Szalay - Johns Hopkins University
Title: Large Scale Structure of the Universe

March 7

Jonathan L. Rosner - Enrico Fermi Institute - University of Chicago
Title: The Buzz of B's - News of the Fifth Quark

March 14 – The Kieval Lecture

Buford Price – UC Berkeley
Title: Interconnectedness of Science: 10 12 eV Neutrinos, Climate, Volcanism, and Life in Ice

March 21 - SPRING BREAK

March 28

Majorie Shapiro - UC Berkeley
Title: Why Does the W have Mass? Prospects for Uncovering the Source of Electroweak Symmetry Breaking

April 4

Matthias Troyer - Swiss Federal Institute of Technology, Zurich, Switzerland
Title: Simulating Quantum Phase Transitions: From Quantum Magnets to Ultra-Cold Atomic Gases

April 11

Ian Shipsey - Purdue University
Title: Bringing Hearing to the Deaf - Cochlear Implants: A Technical and Personal Account

April 18

Michel Devoret - Yale University
Title: The Quantronium: A Quantum-Mechanically Coherent Electrical Circuit Behaving Like An Atom

April 25

Jainendra Jain - Pennsylvania State University

Title: Composite Fermions: Why They Are and What They Do

May 2 – The Salpeter Lecture Series

Victoria Kaspi - McGill University

Title: Magnetars

FALL 2005 Schedule

September 5 – Labor Day

September 12 – The Kieval Lecture

Gary Westfall - Michigan State University

Title: Recent Results from RHIC: Towards a Better Understanding of Polymer-Induced Frag Reduction

September 19

Dung Hai Lee - University of California at Berkeley

Title: How to Block Nature's Tendency to Order

September 26

Pierre Ramond - University of Florida

Title: Sunshine at Midnight

October 3 – The Parratt Lecture

Stephen Olsen - University of Hawaii

Title: Homeless Mesons

October 10 –Fall Break

October 17 – The Bethe Lectures

Donald M. Eigler - IBM Almaden Research Center

Title: Information Transport and Computation in Nanometer-Scale Structures

October 24 – The Bethe Lectures

Donald M. Eigler - IBM Almaden Research Center

Title: Single-Atom Spin-Excitation Spectroscopy

October 31

Karin A. Dahmen - University of Illinois - Urbana-Champaign

Title: Crackling Noise and Disorder: Learning from Magnets and Earthquakes

November 7

John Spence - Arizona State University and Lawrence Berkeley National Labs

Title: Diffraction from a Beam of Laser-Aligned Proteins, and some Cavendish History

November 14

Neal Lane - Rice University

Title: The Future of U.S. Science - Storm Clouds on the Horizon

November 21

John Reppy - Cornell University

Title: The Search for the Super Solid

November 28

Paul Chaikin - New York University

Title: Jammed Ellipsoids Beat Jammed Spheres: Experiments with Candies, Colloids and Crystals

Spring 2006 Schedule

January 23

Sarah Eno - University of Maryland
Title: The LHC Adventure

January 30

Amir Yacoby - Weizmann Institute of Science, Rehovot, Israel
Title: Coherent Control and Manipulation of Two-Electron Spin States

February 6

David Weitz - Harvard University
Title: Dripping, Jetting, Drops, and Wetting: The Magic of Microfluidics

February 13 - No Seminar Today

February 20

Philip Kim - Columbia University
Title: Quantum Electrodynamics at your Pencil Tips: Dirac Fermion in Graphite

February 27

A. Douglas Stone - Yale University
Title: Einstein's Unknown Insight and the Problem of Quantizing Chaotic Motion

March 6

Amber Miller - Columbia University
Title: Peeking in Ancient Holes and Seeking the Holy Grail

March 13

Maxim Perelstein - Cornell University
Title: Electroweak Symmetry Breaking

March 20 - SPRING BREAK

March 27

Gary Horowitz - University of California at Santa Barbara
Title: Spacetime in String Theory

April 3

Barry C. Barish - California Institute of Technology
Title: Probing the Universe for Gravitational Waves

April 10

Lene Hau - Harvard University
Title: Frozen Light

April 17 – The Salpeter Lecture Series

Avi Loeb - Harvard University
Title: The Frontier of 21cm Cosmology: Probing Reionization As Well As the Inflationary Initial Conditions

April 24

Eberhard Bodenschatz - Cornell University

Title: The Cornell Experiments on Fluid Turbulence

May 1

Sunil Golwala - California Institute of Technology

Title: The Search for WIMP Dark Matter

May 8

Harold Shapiro - Princeton University

Title: Particle Physics at the Crossroads: Charting the Course for Elementary Particle Physics in the 21st Century

FALL 2006 Schedule

August 28

Bill Louis - Los Alamos National Laboratory
Title: Searching for Neutrino Oscillations with MiniBooNE

Sept. 4 – Labor Day

September 11

Mark Trodden - Syracuse University
Title: Gravitational Approaches to Cosmic Acceleration

September 18

Kerry Emanuel - Massachusetts Institute of Technology
Title: Is Global Warming Increasing Hurricane Activity?

September 25

Persis Drell -Stanford University
Title: GLAST: The Gamma Ray Large Area Space Telescope

October 2

Csaba Csaki - Cornell University
Title: Searching for the Mechanism of Electroweak Symmetry Breaking

October 9 –Fall Break

October 16 – The Bethe Lectures

David Gross - Kavli Institute for Theoretical Physics, UC at Santa Barbara
Title: The Search for a Theory of Fundamental Reality: The Theory of Elementary Particles

October 23

Ziao-Gang Wen - Massachusetts Institute of Technology
Title: An Origin of Light, Fermions, and Gravity

October 30

Henry Greenside - Duke University
Title: Songbirds and Synfire Chains

November 6

Greg Boebinger - Florida State University
Title: Levitation, Superconductivity, and the World's Largest Magnets

November 13

Michael Oppenheimer - Princeton University
Title: How Warm is Too Warm? Global Warming, Sea Level Rise, and the Future of the Polar Ice Sheets

November 20

Neil Ashby - National Institute of Standards and Technology
Title: Relativity in the Global Positioning System

November 27

Daniel Fisher - Harvard University

Title: Is Evolution Understood? Quantitative Questions from a Statistical Mechanic

Spring 2007 Schedule

January 22 - Special Physics Colloquium

Daniel Freedman - Cornell University

Title: Empirical Insights from a Physicist's Year as a Grunt in Iraq

January 29 – The Kieval Lecture

Lisa Randall - Harvard University

Title: Searching for Warped Geometry at the LHC

February 5

Saul Teukolsky - Cornell University

Title: Black Holes and Gravitational Waves

February 12

Steve Peggs - Brookhaven National Lab.

Title: Accelerator Science at the LHC Frontier

February 19

Angela Olinto - University of Chicago

Title: New Era in UHE AstroParticle Physics

February 26

Carl Bender - Washington University - St. Louis

Title: Making Sense of Non-Hermitian Hamiltonians

March 5

Lars Bildsten - UC at Santa Barbara

Title: Explosions in Accreting White Dwarfs: From Classical Novae to Supernovae

March 12 – The Bethe Lectures

Joe Polchinski - Kavli Institute for Theoretical Physics - UC at Santa Barbara

Title: Gauge/Gravity Duality: From Black Holes to the Bethe Ansatz

March 19 - Spring Break

March 26

Richard Packard - UC Berkeley

Title: Superfluid Weak Links: Physics and Applications

April 2 – The Salpeter Lecture Series

Jonathan Lunine - University of Arizona

Title: The Past, Present and Future of Methane of Titan

April 9

Matthew Pritchard - Cornell University

Title: Imaging SubCentimeter Ground Deformation from Space

April 16

Richard L. Garwin - IBM T.J. Watson Research Center

Title: A Major Expansion of Nuclear Power to Fight Global Warming? Problems and Prospects."

April 23

Michael Riordan - University of California

Title: US Big-Science Lessons from the SSC

April 30 – No Colloquium

ALTERNATIVE: Harold Varmus Subject: Science, Policy and Education

Fall 2007 Schedule

August 27

Henry Tye - Cornell University
Title: How Our Universe Began?

September 3 - LABOR DAY

September 10

William Bialek - Princeton University
Title: Physics Problems in Early Embryonic Development

September 17

Kyle Shen - Cornell University
Title: Shedding Light on Mysteries in the Solid State

September 24

David Goldhaber-Gordon - Stanford University
Title: Designer Hamiltonians in the Laboratory: Observation of Many Body Physics in a Semiconductor Nanostructure

October 1

Keith Schwab - Cornell University
Title: Quantum Mechanics with Mechanical Objects: Chasing Schrodinger's Whisker

October 8 - FALL BREAK

October 15

Geoffrey West - Santa Fe Institute
Title: Size Matters: Growth, Innovation and the Pace of Life from Cells to Cities

October 22

Robert Gilmour - Cornell University
Title: Nonlinear Dynamics of Heart Rhythm Disorders

October 23 – The Thomas Gold Lecture Series, Joint with Astronomy

Andrew Lyne - Australia

October 29

Steven Kivelson - Stanford University
Title: Electronic Liquid Crystals

November 5

Adam Burrows - University of Arizona
Title: Theories of the Explosive Death of Massive Stars

November 12

Francis Everitt - Stanford
Title: Testing Einstein in Space: Gravity Probe B & STEP

November 19

Anthony Leggett - UIUC

Title: Testing the Limits of Quantum Mechanics: Motivation, State of Play, Prospects

November 26

Neal Weiner - New York University

Title: Illuminating Dark Matter

Spring 2008 Schedule

January 21

Steven M. Girvin - Yale University

Title: Circuit QED: What is the Electric Field of a Single Photon?

January 28

Seamus Davis - Cornell University

Title: Quasiparticle Extinction Due to Mottness - the Achilles' Heel of High-Tc Superconductivity

February 4

Andrew Cohen - Boston University

Title: Electroweak Superconductivity

February 11

Suzanne Staggs - Princeton University

Title: Wringing Yet More Reality from the Cosmic Microwave

February 18

Denise Freed - Schlumberger-Doll Research

Title: The Physics of Crude Oils: What Downhole Nuclear Magnetic Resonance can tell us about Crude Oil

February 25

Erich Mueller - Cornell University

Title: Ultracold Fermions

March 3 - Special Colloquium

Mildred Dresselhaus - President APS

Title: Remarkable Nanostructured Forms of Carbon

March 10

Eric G. Adelberger - University of Washington

Title: Recent Gravitational Experiments and their Implications for Particle Physics

March 17 – Spring Break

March 24

David Nelson - Harvard University

Title: Gene Surfing in Microorganisms

March 31

Judy Franz - American Physics Society

Title: An Adventure in Physics outside the Laboratory

April 7

Markus Greiner - Stanford University

Title: Quantum Simulations with Ultracold Atoms

April 14 – The Bethe Lectures

Steve Chu - Stanford University

Title: What We Can Learn from Single Molecule Experiments of Biological Systems

April 21 – The Salpeter Lecture

Alexei Filippenko - UC at Berkeley

Title: Evidence from Type Ia Supernovae for an Accelerating Universe and Dark Energy

April 28

Elena Aprile - Columbia University

Subject: The Search for Dark Matter with the XENON Equipment

Fall 2008 Schedule

September 8

Paul McEuen - Cornell University

Title: Nano Carbon: From String Theory to Atomic Drums

September 15

John Clarke - UC Berkeley

Title: The Ubiquitous SQUID: From Cosmology to Medicine

September 22

Maxim Perelstein - Cornell University

Title: Physics Beyond the Standard Model: Questions for the LHC

September 29

Doug Glenzinski - FNAL

Title: Twilight at the Tevatron

October 6

Raman Sundrum - John Hopkins

Title: Extra Dimensions and the LHC

October 13 - Fall Break

October 20 – The Bethe Lectures

Robert Kirshner-Harvard University

Title: The Mystery of Dark Energy

October 27

Margaret Murnane - JILA & Univ. of Colorado

Title: Harnessing Attosecond Science for Coherent X-Ray Generation and Applications

November 3

Anders Ryd - Cornell University

Title: THE CMS Experiment: Meeting the LHC Challenge

November 10

John Beamish - University of Alberta, Canada

Title: Flow and Elastic Properties of Helium: Is It a "Supersolid"?

November 17

Ron Poling - University of Minnesota

Title: CESR and CLEO: Thirty Years Shaping the Standard Model

November 24

Natalie Mahowald - Cornell University

Title: Desert Dust, Climate and Biogeochemistry

December 1

Nergis Mavalvala - Massachusetts Institute of Technology

Title: Quantum Mechanics on Giant Scales

Spring 2009 Schedule

January 19

Piet Brouwer - Cornell University

Title: Quantum Transport without Planck's Constant

January 26

Andrea Liu - University of Pennsylvania

Title: The Physics of Cell Crawling

February 2 –The Kieval Lecture

Paul Doherty - Exploratorium

Title: Physics at a Science Museum

February 9

Eva Silverstein - Stanford University

Title: Inflation, String Theory, and Signatures in the CMB

February 16

Andy Ruina - Cornell University

Title: Rotation with Zero Angular Momentum: Demonstrations of the Falling Cat Phenomenon Go Sour

February 23

Young-Kee Kim - Fermilab

Title: $E = mc^2$: High Energy and Intensity Opens Windows on the World

March 2

Kurt Gottfried - Cornell University

Title: Nuclear Terrorism

March 9

Jan Zaanen - Univ Leiden, The Netherlands

Title: Planckian Dissipation

March 16 – Spring Break

March 23 – The Bethe Lectures

Paul Chu - Houston/HKUST

Title: From BCS through HTS to RTS?

March 30

Andrzej Buras - Technical University in Munich

Title: An Excursion into the Attouniverse: Probing New Physics at Very Short Distance Scales Through Rare Processes

April 6

Alex Gaeta - Cornell University

Title: Interactions of Light with Atoms and Molecules in Photonic Crystal Fibers

April 13

John Learned - University of Hawaii

Title: The Age of Neutrino Physics: A Rapid Overview and Description of a New 10 Kiloton Instrument Called Hanohano

April 20

Arjun Yodh - Univ of Pennsylvania

Title: Melting, Frustration and Aging in Temperature-Sensitive Colloids

April 27 – The Salpeter Lecture Series

Giles Chabrier - Ecole Normale Supérieure de Lyon

Title: Recent Results in Exoplanet Formation, Structure and Evolution

Fall 2009

August 31

Dan Ralph - Cornell University

Title: Putting the Electron's Spin to Work

September 7 - Labor Day

September 14

Subir Sachdev - Harvard University

Title: Quantum Criticality: from Antiferromagnets to the Cuprate Superconductors

September 21

Peter Fisher – Massachusetts Institute of Technology

Title: WiTricity: An Odd Adventure into the Real World

September 28

Itai Cohen - Cornell University

Title: Flight of the Fruit Fly

October 5

Paul Ginsparg – Cornell University

Title: Open Access: From Myth to Paradox

October 12 - Fall Break

October 19

Edward Farhi - MIT

Title: A Quantum Computer Can Determine Who Wins a Game Faster Than a Classical Computer

October 26

Wolfgang Bauer - Michigan State University

Title: Increasing the Number of Physics Majors - How Do We Do It?

November 2

Zvi Bern - UCLA

Title: Harmony of Scattering Amplitudes: From Quantum Chromodynamics to Gravity

November 9

Steve Ritz - NASA

Title: Fermi at 17 Months

November 16

Humphrey Maris - Brown University

Title: "Experiments with Single Electrons in Liquid Helium"

November 23

Jennifer Mass - Winterthur Museum

Title: Art Meets Science: Discovering Hidden Images and Vanishing Masterpieces in Paintings

November 30

Bart Selman - Cornell University

Title: Solving Large-Scale Computational Problems Using Insights from Statistical Physics

Spring 2010 Schedule

January 25

Vinay Ambegaokar - Cornell University
Title: Entropy and Time

February 1

Matthew Fisher - CalTech
Title: Quantum Crystals, Quantum Choreography and Quantum Computing

February 8

Eugene Demler - Harvard University
Title: Learning About Order from Noise

February 15

Andrew Mackenzie - University of St. Andrews
Title: Complex Oxides: A New Playground for Physics and Technology

February 22

Stan Leibler-The Rockefeller University
Title: Protein Sectors: History Versus Function

March 1

David DiVincenzo - IBM T. J. Watson Research Center
Title: Prospects for Realizing Quantum Computers

March 8

Nathan Seiberg - Institute for Advanced Study, Princeton
Title: Supersymmetry and its Breaking

March 15

Chris Polly - Fermilab
Title: Precision precession: How the history of g-2 wound its way to Fermilab

March 22 - Spring Break

March 29

Yuval Grossman - Cornell University
Title: Flavor Physics

April 5

Chad Orzel - Union College
Title: My Dog About Science: Why Public Communication of Science is Important , and How Social Media Can Help

April 12

Jiwoong Park - Cornell University
Title: Accurate Carbon Nanostructures

April 19

Chris Myers -Cornell University

Title: The Curiosity of Dimensionality in Systems Biology

April 26

Persis Drell - Stanford

Title: The Turn On of LCLS: The X-Ray Free-Electron Laser at SLAC

May 3

Kathryn Moler - Stanford University

Title: Mesoscopic Magnetic Measurements

May 10 – The Salpeter Lecture

David Spergel – Princeton

Title: The Cosmic Microwave Background as a Probe on the Very Early Universe

Fall 2010 Schedule

August 30

Sol Gruner - Cornell University

Title: Biomolecules Under Pressure: Why it Matters

September 6 - Labor Day

September 13

Steve Strogatz - Cornell University

Title: Writing About Math for The New York Times

September 20

Alyssa Apsel - Cornell University

Title: Firefly Radios: Biologically Inspired Ultra-low Power Radio Networks

September 27

Louis Taillefer - Sherbrooke University

Title: The Two Mysteries of Superconductivity

October 4

Daniel Schrag - Harvard University

Title: A Path Forward on Climate and Energy

October 4 – 8 - Messenger Lecture Series

The Future of Fundamental Physics

Nima Arkani-Hamed - IAS Princeton

October 4: Setting the Stage: Space-Time and Quantum Mechanics

October 5: Our “Standard Models” of Particle Physics and Cosmology, and Their Discontents

October 6: Space-Time is Doomed; What Replaces It?

October 7: Why is There a Macroscopic Universe?

October 8: A New Golden Age of Experiments: What We Might Know By 2020

October 11 - Fall Break

October 18

Andrew Millis - Columbia University

Title: Materials with Strong Electronic Correlations: The (Theoretical) End of the Beginning?

October 25

Holger Mueller - UC Berkeley

Title: Gravitational Redshift, Equivalence Principle, and Matter Waves

October 27 – The Thomas Gold Lecture, Special Joint Physics-Astronomy Colloquium

Rashid Sunyaev - Max Planck Institute for Astrophysics, Garching, Germany

Title: The Richness and Beauty of the Physics of Cosmological Recombination

November 1

Richard Schnee - Syracuse University

Title: What's the Matter in the Universe? Direct Searches for WIMP Dark Matter

November 8

Csaba Csaki - Cornell University

Title: Electroweak Symmetry Breaking and the Physics of the TeV Scale

November 15

Peter Wittich - Cornell University

Title: CMS: The LHC Era Begins

November 22

Charles Marcus - Harvard University

Title: Building Schrödinger's Chip

November 29

David Meyerhofer - University of Rochester

Title: Inertial Confinement Fusion: On the Path to Ignition

Spring 2011 Schedule

January 24

Ben Kilminster - Fermilab

Title: Massive Search Pushes Higgs Particle into Corner at Fermilab

January 31

Aaron Pierce – University of Michigan

Title: Developments in the Hunt for the Identity of the Dark Matter

February 7

Henry Chapman – Center for Free-Electron Laser Science DESY

Title: Femtosecond X-Ray Protein Nanocrystallography

February 14

Michael Lawler – SUNY Binghamton / Cornell University

Title: Electronic Liquid Crystal Correlations in the Pseudogap States of High Tc Superconductors

February 21 – The Krumhansl Lecture

Nynke Dekker – Kavli Institute of NanoScience, TU Delft

Title: Single-Molecule Torque Spectroscopy for Biophysical Investigations

February 28 – The Cooper Lecture

Wim Leemans – Lawrence Berkeley National Laboratory

Title: Laser Plasma Accelerators: From Dream Towards Reality

March 7 – Cancelled

March 14 – The Salpeter Lectures

Sara Seager - MIT

Title: Exoplanet Mass, Radius, and the Physics of Exoplanetary Interiors

March 21 - Spring Break

March 28

William Bertsche – Swansea University

Title: Trapped Antihydrogen

April 4

Anders Ryd – Cornell University

Title: First Year of CMS Operation: Operational Experience and First Physics Results

April 11 – The Bethe Lectures

Wolfgang Ketterle - MIT

Title: Superfluid Gases Near Absolute Zero Temperature

April 18

Matias Zaldarriaga – IAS Princeton

Title: The Initial Conditions of the Hot Big Bang

April 25

Lars Bildsten – KITP UC Santa Barbara

Title: Diverse Energy Sources for Supernovae

May 2 - Cancelled

Fall 2011 Schedule

August 29

David Mermin – Cornell University

Title: What has quantum mechanics to do with factoring? Things I wish they had told me about Shor's algorithm.

September 5 – Labor Day

September 12 – Cooper Lecture

Thomas Mason – UCLA

Title: Entropy and Geometry: From Directed Self-Assembly to Phase Behavior of Custom-Shaped Colloids

September 19

Julia Thom – Cornell University

Title: The First Year of LHC Data: What We've Found and What We Haven't

September 26 – The Bethe Lectures

Paul Alivisatos – Lawrence Berkeley National Laboratory

Title: The Science of Nanocrystals in Six Easy Pieces

October 3

Matthias Liepe – Cornell University

Title: RF Superconductivity. What Makes the Cornell ERL Go?

October 10 – Fall Break

October 17

Christian Ott – Caltech

Title: Stellar Collapse, Core-Collapse Supernovae, and the Formation of Stellar-Mass Black Holes

October 24

Charles Kane – University of Pennsylvania

Title: From Topological Insulators to Majorana Fermions

October 31 – The Kieval Lecture

Sean Carroll – UCLA

Title: The Origin of the Universe and the Arrow of Time

November 7

Jonathan Feng – UC Irvine

Title: Dark Particles: WIMPS and Beyond

November 14 – Cancelled

November 21

Roberto Car – Princeton University

Title: Quantum Mechanics and Hydrogen Bonds

November 28

Stewart Prager – Princeton Plasma Physics Laboratory

Title: The Path to Magnetic Fusion Energy

Spring 2012 Schedule

January 23

Liam McAllister – Cornell University

Title: Cosmological Windows on Planck-Scale Physics

January 30

Michael Crommie – UC Berkeley

Title: The Electrons in Your Pencil: Observations of a Carbon Flatland

February 6

Yanbei Chen – Caltech

Title: Kilogram-scale Mirrors as Quantum Objects

February 13

Charles Bennett – IBM Research

Title: Quantum Information, the Ambiguity of the Past, and the Complexity of the Present

February 20

Alex Gaeta – Cornell University

Title: Temporal Magnification, Compression, and Cloaking of Light

February 27

Rafael Lang – Purdue University

Title: Dark Matter and How To Discern It

March 5 – The Parratt Lecture

Carl Lineberger – JILA/CU Boulder

Title: Energy Flow and Sequestration in Partially Solvated ICN and ICN-:
Small molecules trying to act large

March 12 – The Salpeter Lecture

Eliot Quataert – UC Berkeley

Title: Searching for the Electromagnetic Counterparts to Gravitational Wave Sources

March 19 – Spring Break

March 26

Michael Peskin – Stanford University

Title: The Search for New Elementary Particles at the CERN Large Hadron Collider

April 2

Vivek Sharma – UC San Diego

Title: The Hunt for the Higgs Boson at CERN

April 9 – The Thomas Gold Lecture

Maria Zuber – MIT

Title: The Geophysics of Mercury from the MESSENGER Mission

April 16

Doug Smith – UC San Diego

Title: Single-molecule studies of polymer physics and viral DNA packaging

April 23 – Cancelled

April 30 – The Bethe Lectures

Lisa Randall – Harvard University

Title: Particle Physics Today

Fall 2012 Schedule

August 27

John A. Johnson – Caltech

Title: Hot on the Trail of Warm Planets Orbiting Cool M Dwarfs

Host: Eanna Flanagan

September 3 – Labor Day

September 10

Sean Hartnoll – Stanford University

Title: Ohm's Law and Black Holes

Host: Liam McAllister

September 17

Kyle Shen – Cornell University

Title: Teaching Electrons New Tricks in Artificial Quantum Materials

September 24

Markus Luty – UC Davis

Title: The Higgs Confronts Three Universes at the LHC

Host: Csaba Csaki

October 1

Ivan Bazarov – Cornell University

Title: Cornell High Brightness Photoinjector: Beyond the “Star Wars”

October 8 – Fall Break

October 15 – The Bethe Lectures

John Carlstrom – University of Chicago

Title: Cosmological Physics with the Cosmic Microwave Background: New results from the South Pole Telescope

Host: Ira Wasserman

October 22

Michael Brenner – Harvard University

Title: Linear Algebra and the Shape of Bird Beaks

Host: Jane Wang

October 29 – Cancelled

November 5

Kyle Cranmer – New York University

Title: Discovery! How we did it and what we know so far

Host: Jim Alexander

November 12

Jonathan Lunine – Cornell University

Title: Saturn's Moon Titan From the Inside Out

November 19

Lisa Whitehead – University of Houston

Title: Neutrino Mixing and the Daya Bay Experiment

Host: Julia Thom-Levy

Spring 2013

January 21 – The Cooper Lecture

Robert Beichner – North Carolina State University

Title: The SCALE-UP Classroom

Host: Rob Thorne

January 28

Tim Healey – Cornell University

Title: Nonlinear Problems for Thin Elastic Structures and the Ubiquitous Isola Bifurcation

Host: Andre LeClair

February 4 – The Thomas Gold Lectures

David Jewett – UCLA

Title: Comets and the Origin and Evolution of the Solar System

Host: Jonathan Lunine

February 11

Abhay Pasupathy – Columbia University

Title: Is Magnetism Important in the Pnictide Superconductors?

Host: Séamus Davis & Dan Ralph

February 18

Jesse Thaler – MIT

Title: The Shape of Jets to Come: Boosting the Search for New Physics at the LHC

Host: Maxim Perelstein

February 25

Zahid Hasan – Princeton University

Title: Topological Surface States: Discovery and Recent Results

Host: Kyle Shen

March 4

Harold Hwang – Stanford University

Title: Emergent Phenomena at Oxide Interfaces

Host: Kyle Shen

March 11

Frank Guerts – Rice University

Title: Putting Hot Matter on a Map

Host: Peter Wittich

March 18 – Spring Break

March 25 – The Bethe Lectures

Gordon Baym – University of Illinois at Urbana-Champaign

Title: Two slit diffraction with highly charged particles: Niels Bohr's consistency argument that the electromagnetic field must be quantized.

Host: Erich Mueller

April 1

Senthil Todadri – MIT

Title: How might a Fermi surface die?

Host: Eun-Ah Kim

April 8

Shamit Kachru – Stanford University

Title: New Horizons in Black Hole Physics and Holography

Host: Liam McAllister

April 15 – The Salpeter Lecture

Eve Ostriker – University of Maryland, College Park

Title: Salpeter Lecture - Self-Regulation of Star Formation in Disk Galaxies

Host: Jonathan Lunine

April 22

Suchitra Sebastian - Cambridge University

Title: Quantum oscillations as a tool to crack the mystery of unconventional superconductivity

Host: n/a Faculty Candidate

April 29

François Bouchet - Institut d'Astrophysique de Paris

Title: Planck Main Cosmological Results

Host: Liam McAllister

Fall 2013

September 9

Eun-An Kim – Cornell University

Title: Recent Theoretical Advances in the Study of High-Tc Superconductivity using a 'Middle-top/down' Approach

September 16

James Lattimer – SUNY Stony Brook

Title: Measuring Neutron Stars

Host: Saul Teukolsky

September 23

Michelle Wang – Cornell University

Title: Solving Mysteries of Biology – The Power of One

September 30 – A.D. White Professor – At – Large Lectures

Nima Arkani-Hamed – IAS Princeton

Title: Space-Time, Quantum Mechanics and Scattering Amplitudes

Host: Csaba Csaki & Yuval Grossman

October 7

J.C. Seamus Davis – Cornell University

Title: How Supermassive Electrons Reveal the Magnetic Mechanism of Correlated Superconductivity

October 14 – Fall Break

October 21

Nigel Goldenfeld – University of Illinois at Urbana – Champaign

Title: Phase Transitions in Early Life: Clues from the Genetic Code

Host: Carl Franck

October 28

Zhirong Huang – Stanford University

Title: Free-Electron Lasers: from Star Wars to Molecular Movies

Host: Georg Hoffstaetter

November 4

Robert J. Lang – Lang Origami

Title: From Flapping Birds to Space Telescopes: The Mathematics of Origami

Host: Itai Cohen

November 11 – The Bethe Lectures

Fabiola Gianotti – CERN

Title: Challenges and Accomplishments of the ATLAS Experiment at the Large Hadron Collider

Host: Anders Ryd

November 18

Enectali Figueroa – MIT

Title: What's the Matter with the Universe?

Host: Michael Niemack

November 25

Dam Thanh Son – University of Chicago

Title: Viscosity, Quark Gluon Plasma, and String Theory

Host: Maxim Perelstein

December 2 – The Ralls Lecture

Ann Nelson – University of Washington

Title: Uses of the Higgs

Host: Csaba Csaki

Spring 2014

January 27

Frans Pretorius – Princeton University

Title: Black Holes: Probes of the Cosmos and Fundamental Physics

Host: Eanna Flanagan

February 3 – The Cooper Lecture

Catherine Kallin – McMaster University

Title: Topological Superconductivity

Host: Eun-Ah Kim

February 10

Tom Kinoshita – Cornell University

Title: Tenth-Order QED Contribution to the Electron $g - 2$ and High Precision Test of QED and Standard Model

February 24 – The Kieval Lecture

Peter Schiffer – University of Illinois at Urbana-Champaign

Title: Frustration by Design: Artificial Spin Ice

Host: Seamus Davis

March 3

Giorgio Gratta – Stanford University

Title: The EXO Program and the Quest for Majorana Neutrino Masses

Host: Jim Alexander

March 10

Peter Galison – Harvard University

Title: Wastelands and Wilderness: Nuclear Lands

Hosts: Jim Sethna/Katheel Vogel

March 17 – The Krumhansl Lecture

Michael Devoret – Yale University

Title: Superconducting Artificial Atoms: The Quest for Unlimited Qubit Coherence

Host: Paul McEuen

March 24

Mukund Vengalattore – Cornell University

Title: Imprinting the Quantum: Measure still for Measure

March 31 – Spring Break

April 7 – The Bethe Lectures

David Awschlaom – University of Chicago

Title: Beyond Electronics: Abandoning Perfection for Quantum Technologies

Host: Jeevak Parpia

April 14 – The Gold Lecture

J. Richard Bond – Canadian Institute for Theoretical Astrophysics

Title: Unveiling Fundamental Physics from the First Light, Revealing Simplicity & Complexity in the Universe at Large

Host: Ira Wasserman

April 21 – The Salpeter Lecture

Adam Showman – University of Arizona

Title: Weather on Remote Worlds: The Atmospheric Circulation of Exoplanets

Host: Dong Lai

April 28 – The Messenger Lecture

Lenny Susskind – Stanford University

Title: The Birth of the Universe and the Origin of Laws of Physics

Host: Paul Ginsparg

May 5

Liam McAllister & Mike Niemack – Cornell University

Title: Quantum Gravity in the Sky? CMB Measurements as a Window on Planck-Scale Physics

Fall 2014

September 8

Maxim Perelstein – Cornell University

Title: What Can We Learn from the Higgs?

September 15

Subir Sachdev – Harvard University

Title: Unveiling the Order of the High Temperature Superconductors

Host: Eun-Ah Kim

September 22 – The Bethe Lectures

Juan Maldacena – Institute for Advanced Study

Title: Quantum Mechanics and the Geometry of Spacetime

Host: Liam McAllister

September 29

Itai Cohen – Cornell University

Title: Bringing Physics into the Fold: Origami Inspired Mechanical Meta-materials

October 6

Chris Henley – Cornell University

Title: How to Trigger Left-Right Asymmetry in Organisms: Snails, Roots, and Maybe your Brain

October 13 – Fall Break

October 20

Erich Mueller – Cornell University

Title: The Search for Modulated Superconductivity

October 27

Anders Ryd – Cornell University

Title: The CMS Detector Upgrade for the High Luminosity LHC

November 3 – The Gold Lecture (CANCELLED)

Reinhard Genzel–Univ. of California Berkeley and Max Planck Institute for Extraterrestrial Physics

Title: The Galactic Center Massive Black Hole

Host: Gordon Stacey

November 10

Duncan Brown – Syracuse University

Title: Gravitational Waves: A New Frontier in 21st Century Astronomy and Astrophysics

Host: Eanna Flanagan

November 17

Raymond Ashoori – Cornell University

Title: A New Method for Electron Tunneling Spectroscopy of Semiconductors, Insulators, and Graphene

Host: Paul McEuen

November 24

Matthew Reece – Harvard University

Title: Supersymmetry After the LHC's First Run

Host: Csaba Csaki

December 2 (CANCELLED)

Simona Murgia – UC Irvine

Title: Indirect Detection of Dark Matter with Gamma Rays: Constraints and Intriguing Hints

Host: Maxim Perelstein

Spring 2015

January 26

Lawrence Gibbons – Cornell University

Title: Taking the Muon for a Spin (in the World's Largest Penning Trap)

February 2

John Bush – MIT

Title: Hydrodynamic Quantum Analogs: Droplets Walking on the Impossible Pilot Wave

Host: Itai Cohen

February 9

Daniel Harlow – Princeton University

Title: Black Holes, Quantum Information, and the Emergence of Spacetime

Host: Eanna Flanagan

February 16 No Colloquium – February Break

February 23 – The Salpeter Lecture

Daniel Eisenstein – Harvard

Title: A New Decade of Cosmic Structure

Host: Rachel Bean

March 2

Christopher Tully – Princeton University

Title: One Second after the Big Bang

Host: Jim Alexander

March 9

Simona Murgia – UC-Irvine

Title: Indirect Detection of Dark Matter with Gamma Rays

Host: Maxim Perelstein

March 16 – The Bethe Lectures

William Bialek – Princeton University

Title: Are Biological Networks Poised at Criticality?

Host: Sol Gruner

March 23

Brad Marston – Brown University

Title: The Quantum and Fluid Mechanics of Global Warming

Host: Cyrus Umrigar

March 30 – No Colloquium Spring Break

April 6

Dong Lai – Cornell University

Title: Astrophysics of Extreme Exoplanetary Systems

Host: Eanna Flanagan

April 13

Steve Kivelson – Stanford University

Title: High Temperature Superconductivity Near a Nematic Quantum Critical Point

Host: Eun-Ah Kim

April 20

Ian Spielman – University of Maryland and NIST

Title: Gauge Fields in Multi-level Atoms: Magnetism and Synthetic Dimensions

Host: Erich Mueller

April 27 – The Cooper Lecture

Michael Roukes – Caltech

Title: Integrated Neurophotonics: Toward Massively-Parallel Mapping of Brain Activity

Host: Jeevak Parpia

May 4 (CANCELLED)

Fall 2015

August 31

Leslie Rosenberg – University of Washington
Title: Searching for Dark-Matter Axions
Host: Lawrence Gibbons

September 7 – No Colloquium Labor Day

September 14

Chao-Lin Kuo – Stanford University
Title: The BICEP/Keck Program and the Search for Inflationary Gravitational Waves
Host: Mike Niemack

September 21

Kathryn Zurek – Lawrence Berkeley National Lab
Title: New Theories for Dark Matter: Hunting Beyond the WIMP
Host: Csaba Csaki

September 28 – The Gold Lecture

Reinhard Genzel – Univ. of California, Berkeley and Max Planck Institute
Title: The Galactic Center Massive Black Hole
Host: Gordon Stacey

October 5

Frank de Groot – Utrecht University
Title: In-situ X-ray Spectromicroscopic Experiments
Host: Ken Finkelstein

October 12 – No Colloquium Fall Break

October 19 – The Bethe Lectures

Hitoshi Murayama – UC Berkeley
Title: When a Symmetry Breaks
Host: Csaba Csaki

October 26 – The Cooper Lecture

Zhi-Xun Shen – Stanford University
Title: High Temperature Superconductivity – Insights from Einstein's Electrons
Host: Kyle Shen

November 2 – The Krumhansl Lecture

Ana Maria Rey – JILA, NIST, and University of Colorado, Boulder
Title: Building with Crystals of Light and Quantum Matter: From Clocks to Computers
Host: Erich Mueller

November 9

Dunghai Lee – UC Berkeley
Title: A Novel Nematic Quantum in Iron-based Superconductor
Host: Seamus Davis

November 16

John Terning – UC Davis

Title: Quantum Phase Transitions and the Higgs

Host: Csaba Csaki

November 23

Angela Olinto – University of Chicago

Title: News from the Extreme Energy Cliff

Host: Ira Wasserman

November 30 – The Kavli Lecture

Leo Kouwenhoven – Delft

Title: Majorana Fermions: From Particle Physics on a Chip to Topological Quantum Computing

Host: Paul McEuen

Spring 2016

February 1

Claudia de Rham – Case Western Reserve
Title: Our Accelerating Universe and Modified Gravity
Host: Liam McAllister

February 8 – Kristin Ralls Memorial Lecture

Gabriel Orebi Gann – UC Berkeley
Title: Here Be Dragons: Mysteries of the Neutrino
Host: Peter Wittich

February 15 – No Colloquium February Break

February 22 – Parratt Lecture

R. J. Dwayne Miller – Max Planck Institute and the University of Toronto
Title: Mapping Atomic Motions with Ultrabright Electrons: The Chemists' Gedanken Experiment Enters the Lab Frame
Host: Ritchie Patterson

February 29

André LeClair – Cornell University
Title: A New Approach towards a Proof of the Riemann Hypothesis

March 7 – Kieval Lecture

Erik Demaine – MIT
Title: Folding Paper: Visual Art Meets Mathematics
Host: Paul McEuen

March 14

Oliver Bruening – CERN
Title: The LHC and the HL-LHC Upgrade Project
Host: Ralf Eichhorn

March 21 – The Bethe Lectures

Francis Halzen – University of Wisconsin-Madison
Title: IceCube: The Discovery of High-Energy Cosmic Neutrinos
Host: Yuval Grossman

March 28 – No Colloquium Spring Break

April 4

Martin Wegener – Karlsruhe Institute of Technology
Title: Transforming and Cloaking with Metamaterials: Optics, Mechanics, and Thermodynamics
Host: Itai Cohen

April 7 – Terzian Lecture – Joint Astronomy and Physics Colloquium

Kip Thorne – Caltech

Title: Probing the Warped Side of our Universe with Gravitational Waves and Computer Simulations

Host: Saul Teukolsky

April 11

Jim Sethna – Cornell University

Title: Sloppy Models, Differential Geometry, and How Science Works

April 18 – A.D. White Professors-at-Large

Nima Arkani-Hamed – Institute for Advanced Study, Princeton, New Jersey

Title: The Future of Collider Physics, on the Earth and in the Sky

Host: Yuval Grossman

April 25 – Thomas Gold Lecture

Simon White – Max Planck Institute for Astrophysics in Garching, Germany

Title: The Planck Satellite Mission: Full Mission Results on Cosmology and Cosmic Structure Formation

Host: Ira Wasserman

May 2 – Salpeter Lecture

Fiona Harrison – Caltech

Title: A New View of the High Energy Universe: Science Highlights from the Nuclear Spectroscopic Telescope Array (NuSTAR) Mission

Host: Dong Lai

May 9

Michael Shelley – NYU

Title: Self-assembly and Collective Behavior in Active Matter Systems

Host: Itai Cohen

Fall 2016

August 29

Adam Cohen – Harvard University
Title: Bringing Bioelectricity to Light
Host: Itai Cohen

September 5 – No Colloquium Labor Day

September 12

Douglas Stone – Yale University
Title: Einstein and Quantum Mechanics: It's Not What You Think
Host: Peter Wittich

September 19

Stephen Quake – Stanford University
Title: Single Cell Genomics
Host: Katja Nowack

September 26

Liam McAllister – Cornell University
Title: The Discrete Character of Physical Law from String Theory to the CMB

October 3

Itai Cohen – Cornell University
Title: Using a Confocal Rheoscope to Investigate Soft Squishy Materials

October 10 – No Colloquium Fall Break

October 17 – Parratt Lecture

John Rogers – Northwestern University
Title: Soft, Biocompatible Optoelectronic Interfaces to the Brain
Host: Itai Cohen

October 24

Hidenori Takagi – Max Planck Institute for Solid State Research and Department of Physics, Univ. of Tokyo
Title: Spin-orbit Coupling meets with Electron Correlations – A Guided Tour to Exotic Electronic States of 5d Transition Metal Oxides
Host: Kyle Shen

October 31

Carl Haber – Lawrence Berkeley National Lab
Title: The Restoration of Early Sound Recordings using Optical Scanning and Image Analysis
Host: Peter Wittich

November 7 – Kristin Ralls Memorial Lecture

Anette Hosoi – MIT
Title: Marine Mammals and Fluid Rectifiers: The Hydrodynamics of Hairy Surfaces
Host: Itai Cohen

November 14

Dimitri Basov – Columbia University

Title: Quantum Materials: Insights from Near Field Nano-Optics

Host: Kyle Shen

November 21

Herbert Dreiner –Universität Bonn

Title: The Bonn Physics Show—By Students for Kids, an Exciting Outreach and Education Project

Host: Csaba Csaki

November 28 – The Bethe Lectures

Anton Zeilinger – University of Vienna

Title: Quantum Communication with Entangled Photons

Host: David Mermin

Spring 2017

January 30

Peter Wittich – Cornell University

Title: The Future of the Large Hadron Collider

February 6

Séamus Davis – Cornell University

Title: Emergence of Electronic Liquid Crystal Phases in Correlated Superconductors

February 13

Gennady Shvets – Cornell University

Title: Science and Applications of Optical Metamaterials

February 20 – No Colloquium February Break

February 27

Natasha Holmes – Cornell University

Title: From Cookbook to Authentic Research: Rethinking Introductory Physics Lab Courses

March 6 – Krumhansl Lecture

Vidya Madhavan – University of Illinois at Urbana-Champaign

Title: Massless and Massive Electrons: Relativistic Physics in Condensed Matter Systems

Host: Kyle Shen

March 13

Mariangela Lisanti – Princeton University

Title: Hunting for Dark Matter in the Gamma-Ray Sky

Host: Csaba Csaki

March 20 – Cooper Lecture

Kent Irwin – Stanford University

Title: Searching for Axion and Hidden Photon Dark Matter with Electromagnetic Resonators: The Dark Matter Radio Experiment (DM Radio)

Host: Mike Niemack

March 27 – The Henley ‘Non-Spherical Cow’ Lecture

Joseph Curtin – Joseph Curtin Studios, LLC

Title: Can Stradivari’s Sound be Measured?

Host: Peter Wittich

April 10 – The Terzian Lecture

Shri Kulkarni – Caltech

Title: The Restless Universe (Palomar Transient Factory)

Host: Ira Wasserman

April 17

Georg Hoffstaetter – Cornell University

Title: A New Kind of Particle Accelerator: The Cornell-BNL ERL Test Accelerator for eRHIC Prototyping and Bright-Beam Applications

April 24 – The Bethe Lectures

Joshua Frieman – Fermilab and the University of Chicago

Title: Probing Cosmic Acceleration with the Dark Energy Survey

Host: Jim Alexander

May 1 – Kieval Lecture

Justin Khoury – University of Pennsylvania

Title: New Approaches to Dark Matter

Host: Eanna Flanagan

May 8 – Thomas Gold Lecture

Adam Burrows – Princeton University

Title: The Multi-Dimensional Core-Collapse Supernova Mechanism

Host: Lisa Kaltenegger

May 9 – First Distinguished Carl Sagan Lecture

Lord Martin Rees – The United Kingdom's Astronomer Royal

Title: Real and Counterfactual Universes

Host: Lisa Kaltenegger

Fall 2017

August 28

Sid Redner – Santa Fe Institute

Title: Is Basketball Scoring just a Random Walk?

Host: Jim Sethna

September 4 – No Colloquium Labor Day

September 11 – Cancelled

September 18

Andy Ruina – Cornell University

Title: Why Don't Bicycles Fall Over?

September 25

Brad Ramshaw – Cornell University

Title: Weyl Fermions: New Ingredients for Correlated States of Matter

October 2 – Salpeter Lecture

Alyssa Goodman – Harvard University

Title: The Dark Web of Star Formation

Host: Lisa Kaltenegger

October 9 – No Colloquium Fall Break

October 16 – Bethe Lecture

Margaret Murnane – University of Colorado

Title: Science at the Timescale of the Electron: Coherent X-ray Beams from Tabletop Femtosecond Lasers

Host: Katja Nowack

October 23 – Kieval Lecture

David Poland – Yale University

Title: Critical Phenomena and the Conformal Bootstrap

Host: Tom Hartman

October 30

Michael Niemack – Cornell

Title: Probing Fundamental Physics and Cosmic Structure with Current and Future CMB Surveys

November 6 – Ralls Lecture

Nadya Mason – UIUC

Title: Designing Superconductivity: Manipulating Interactions in Arrays of Superconducting Islands

Host: Kyle Shen

November 13 – Henley Lecture

Heinrich Jaeger – University of Chicago

Title: Granular Streams

Host: Itai Cohen

November 20 – Kieval Lecture

Julia Thom-Levy – Cornell University

Title: Cathedrals of Modern Physics: A Guided Tour through a Particle Detector

November 27 – Messenger Lectures

Scott Aaronson – University of Texas, Austin

Title: Complexity-Theoretic Foundations of Quantum Supremacy Experiments

Host: Paul Ginsparg