Cosmo 08 - PROGRAM

MONDAY, August 25, 2008 **PLENARY PROGRAM**

	PLENARY Particle Physics & Cosmology Room: Lecture Hall	**Session Chair: Wendy Freedman, Carnegie Observatory**
8:30-8:45	**Michael Ramsey Musolf** *(Univeristy of Wisconsin - Madison)* Welcome	
8:45-9:25	**Rocky Kolb** *(University of Chicago)* Dark Matter, Dark Energy, and Inflation: The Cosmological Triple Crown	No abstract available
9:25-10:05	**Dan Hooper** *(Fermilab)* Direct and Indirect Dark Matter Searches	There is currently a wide array of experimental programs being carried out which represent major steps forward in the hunt for particle dark matter. I will discuss the latest results and prospects of direct detection experiments such as CDMS and XENON, as well as indirect detection experiments, such as GLAST, PAMELA and ICECUBE. If dark matter in fact consists of weakly interacting massive particles as often envisioned, many of these experiments are quite likely to detect such particles in the near future. I will also discuss some of the signals which have been interpreted as detections of dark matter, including the DAMA/LIBRA signal and the WMAP Haze.
10:05-10:45	**Uwe Oberlack** *(Rice University)* Direct Searches for WIMP Dark Matter	Baryonic matter makes up less than 5% of the universe, which is dominated by Dark Matter (~25%) and Dark Energy (~70%) instead. These components, inferred from redundant astrophysical observations, are unexplained in the framework of Standard Model physics. A natural explanation for the bulk of matter in the universe is provided by non-relativistic, massive, relic particles. This talk will focus on the search for Weakly Interacting Massive Particles (WIMPs), predicted in particular by theories invoking supersymmetry. The nuclear recoils from elastically scattering WIMPs should be detectable with sensitive low background experiments. I will review the current status of direct Dark Matter searches, and elaborate on the XENON suite of experiments. The XENON Dark Matter program reached a major milestone with the operation of its first Dark Matter detector, XENON10, at the Gran Sasso underground laboratory in Italy, providing the world-best limits on spin-independent WIMP-nucleon cross-sections last year. Meanwhile we are building the next generation detector XENON100 at the same location, with ten-fold greater fiducial mass and 100 times reduced background. I will report on the status of XENON100 and its projected sensitivity, and co
10:45-11:15	**COFFEE BREAK** *(outside Lecture Hall)*	
11:15-11:55	**Lisa Gerhardt** *(Lawrence Berkeley National Laboratory)* Searching for High Energy Neutrinos with IceCube	High energy neutrinos offer a unique view of distant, energetic astrophysical objects, as they are neither bent by ambient magnetic fields nor absorbed by the interstellar medium. Some possible sources of neutrinos include active galactic nuclei, gamma ray bursts, the highest energy cosmic rays, and interactions of exotic objects. The IceCube neutrino observatory uses the ice at the South Pole as a Cherenkov medium for the detection of high energy neutrinos. It is composed of an in-ice, three-dimensional array of photomultiplier tubes and a surface air shower array. As of February, 2008 half of the detector has been deployed, bringing the instrumented volume to roughly 0.5 cubic kilometers. Recent results from IceCube will be presented as well as results from AMANDA, a denser, smaller array that is IceCube's predecessor. The future capability of the full IceCube detector will also be discussed.
11:55-12:35	**Sean Carroll** *(Caltech)* The Origin of the Universe and the Arrow of Time	Over a century ago, Boltzmann and others provided a microscopic understanding for the tendency of entropy to increase. But this understanding relies ultimately on an empirical fact about cosmology: the early universe had a very low entropy. Why was it like that? Cosmologists aspire to provide a dynamical explanation for the observed state of the universe, but have had very little to say about the dramatic asymmetry between early times and late times. I will argue that the search for a natural explanation for the observed breakdown of time-reversal symmetry in cosmology leads us directly to interesting conclusions about inflation, quantum gravity, and the multiverse.
12:45-2:00	**LUNCH** *(Community Terrace)* Buffet: Bucky's Tailgate (vegetarian options available)	

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MONDAY, August 25, 2008 **PARALLEL PROGRAM**

	Parallel 1 *Inflation* *Session Chair: Marco Peloso* Room: Lecture Hall	**Parallel 2** *Cosmic Rays, Neutrinos, & Astrophysics* *Session Chair: Hasan Yuksel*	**Parallel 3** *Dark Energy & Modified Gravity* *Session Chair: Nissan Itzhaki* Room: Hall of Ideas Room I	**Parallel 4** *Dark Matter* *Session Chair: Xerxes Tata* Room: Hall of Ideas Room G
2:00-2:20	**Adam Brown** *(Columbia University)* Boom and bust inflation: a graceful exit via compact extra dimensions	**Theresa Brandt** *(Ohio State University)* CREAM: at the High Energy Cosmic Ray Frontier	**Alexander Vikman** *(New York University)* K-Essence, superluminal propagation, causality and emergent geometry	**Andrew Zentner** *(University of Pittsburgh)* Supernova Cosmology Beyond Luminosity Distances
2:20-2:40	**Adrienne Erickcek** *(CalTech)* How to Generate a Cosmological Power Asymmetry	**Cecilia Lunardini** *(Arizona State University)* Neutrinos from Oxygen-Neon-Magnesium supernovae: oscillation signatures	**Antonio De Felice** *(Louvain University)* Regular DGP in the core of a hyper-monopole	**Annika Peter** *(CalTech)* Dynamics of WIMPs in the Solar System and Implications for Direct and Indirect Detection
2:40-3:00	**Anders Basbøll** (*University of Aarhus)* Non-perturbative particle production from SUSY flat directions – a spoiler of delayed thermalisation?	**Doug Spolyar** *(U.C. Santa Cruz)* The Particle Physics of First Stars	**Daniel Sunhede** *(University of Jyväskylä / Helsinki Institute of Physics)* Stars and Solar System constraints in extended gravity theories	**Aravind Natarajan** *(Universitaet Bielefeld)* The effect of early dark matter halos on reionization
3:00-3:20	**Anupam Mazumdar** *(Lancaster University / University of Copenhagen)* Testing inflationary paradigm at the LHC	**Gabriele Sirri** *(INFN - Istituto Nazionale di Fisica Nucleare)* First events from the OPERA detector at Gran Sasso	**Fabian Schmidt** *(University of Chicago)* Precision Probes of Modified Gravity with Weak Lensing	**Huitzu Tu** *(University of California - Irvine)* Thermal Relics in Hidden Sectors: the WIMPless miracle
3:20-3:40	**Burak Himmetoglu** *(University of Minnesota)* Early Stage of Anisotropic Inflation Driven by a Vector Field	**Maurizio Giannotti** *(Los Alamos National Laboratories)* New Physics and Stellar Evolution	**Gong-Bo Zhao** *(Simon Fraser University)* Searching for modified growth patterns with tomographic surveys	**Tonia Venters** *(University of Chicago)* Studies of the Extragalactic Gamma-ray Background: Modeling Blazars to Constrain
3:40-4:00	**COFFEE BREAK** *(outside Lecture Hall)*			
4:00-4:20	**Cristian Armendariz-Picon** *(Syracuse University)* Constraining deviations from statistical isotropy in the primordial perturbations	**Kimberly J. Palladino** *(Ohio State University)* ANITA and Gamma Ray Burst Neutrinos	**Iain Brown** *(ITP, Heidelberg)* Cosmological Backreaction from Scalar Fields and Perturbations	**Gabriella Sciolla** *(MIT)* DM-TPC: a novel approach to directional Dark Matter detection
4:20-4:40	**Diana Battefeld** *(Helsinki Institute of Physics)* Preheating after mulfi-field Inflation	**Miguel Mostafa** *(Colorado State University)* Latest results from the Pierre Auger Observatory	**Ignacy Sawicki** *(New York University / CCPP)* Structure Formation in f(R) Gravity Consistent with Solar-System Tests	**Jennifer Siegal-Gaskins** *(University of Chicago)* Revealing dark matter substructure with anisotropies in the diffuse gamma-ray
4:40-5:00	**Eric West** *(Syracuse University)* Preheating in Derivatively-Coupled Inflation Models	**Jason Goon** *(Louisiana State University)* Results from Phase III of the Sudbury Neutrino Observatory	**Dejan Stojkovic** *(SUNY at Buffalo)* Can dark energy have a color?	**Kalliopi Petraki** *(UCLA)* The role of sterile neutrinos in cosmology and astrophysics
5:00-5:20	**Ilya Gurwich** *(Ben-Gurion University)* Radiation Driven Inflation		**James P. Zibin** *(University of British Columbia)* Restraining void models for acceleration	**Xinjie Qiu** *(University of Minnesota)* The Cryogenic Dark Matter Search
5:20-5:40	**Louis Leblond** *(Texas A&M University)* Tachyon Mediated non-Gaussianity		**K. Wyatt Merritt** *(Fermilab)* Overview of the Dark Energy Survey	**Chung-Lin Shan** *(Seoul National University)* Constraining the Spin-Independent WIMP-Nucleon Coupling from Direct Dark Matter Detection Data
5:40-6:00	**Bjorn Garbrecht** *(University of Wisconsin - Madison)* Strings, Texture and the CMB			**Melanie Simet** *(University of Chicago)* The effect of axionlike particles on gamma-ray spectra

6:00-7:00	**RECEPTION** *(Grand Terrace)* Beer/Wine/Hot & Cold H'ors dover buffet

Cosmo 08 - PROGRAM

MONDAY, August 25, 2008 **PLENARY PROGRAM**

	PLENARY - EVENING SESSION Dark Matter Room: Lecture Hall	**Session Chair: Gabriella Sciolla, MIT**
7:00-7:40	**Katie Freese** *(University of Michigan)* First Stars & Dark Matter	A new phase of stellar evolution driven by dark matter annihilation in the first stars the first phase of stellar evolution in the history of the universe may be Dark Stars, powered by dark matter rather than by fusion. Weakly interacting massive particles, which are their own antiparticles, can annihilate and provide an important heat source for the first stars in the the universe. Hence these first stars may experience a new phase of stellar evolution: they may be powered by dark matter annihilation for an extended period of time. This talk presents the story of these Dark Stars.
7:40-8:20	**Leszek Roszkowski** *(University of Sheffileld)* Can One Determine Reheating Temperature at the LHC with Axino or Gravitino Dark Matter?	In the framework of effective low-energy supersymmetric models, LHC measurements may allow one to determine T_R as a function of the mass of the dark matter particle assumed to be either an axino or a gravitino. An upper bound on their mass may also be derived.
8:20-9:00	**Shufang Su** *(University of Arizona)* Dark Matter at the LHC	The existance of dark matter (DM) provides an envidence for new physics beyond the Standard Model. In my talk, I will discuss both the usual WIMP (Weakly Interacting Massive Particle) DM candidate, and other recent proposals. I will also discuss the studies of those dark matter scenarios at the Large Hadron Collider.
9:00-9:40	**Bhaskar Dutta** *(Texas A&M)* Precision Cosmology at the LHC	The success of supersymmetry is beyond any doubt. With the availability of the precise measurement of the dark matter content of the universe, SUSY models are used as cosmological connection to particle physics. We are now ready to verify this theory directly at the upcoming large hadron collider (LHC) which is about to start. It is possible to use the LHC measurements to reconstruct the SUSY model parameters which then can be used to calculate the dark matter content very precisely. In this talk, I will summarize various search strategies which will be important to measure supersymmetry

Cosmo 08 - PROGRAM

TUESDAY, August 26, 2008 **PLENARY PROGRAM**

	PLENARY Strings & Cosmology & More Room: Lecture Hall	**Session Chair: Marco Zagermann, MPI-Munich**
8:30-9:10	**Shamit Kachru** *(Stanford University)* Holographic systematics of D-brane inflation	We provide a systematic treatment of possible corrections to the inflaton potential for D-brane inflation in a warped, deformed conifold geometry. Our strategy is to use AdS/CFT duality, and consider the most general possible corrections to the throat geometry coming from arbitrary irrelevant perturbations of the CFT, sourced by coupling to the bulk of the compact Calabi-Yau space. Our strategy can easily be extended to more general warped geometries, given sufficient knowledge of the Kaluza-Klein spectrum (or equivalently, the spectrum of conformal dimensions in the dual CFT).
9:10-9:50	**Fernando Quevedo** *(University of Cambridge)* Kahler Moduli Inflatons	We discuss three different scenarios of string inflation where the inflatons are different classes of Kahler moduli of the underlying Calabi-Yau manifold: the overall volume, a blow-up mode or a fibration modulus. In the last case observable gravity waves are induced with the tensor to scalar ratio r correlated with the value of the spectral index n_s.
9:50-10:30	**Eva Silverstein** *(Stanford University)* Axion Monodromy Inflation and Tensor Modes in the CMB	Wrapped branes in string compactifications introduce a monodromy that extends the field range of individual closed-string axions to beyond the Planck scale. Approximate shift symmetries of the system naturally control corrections to the axion potential, as in Natural Inflation. This suggests a general mechanism for chaotic inflation driven by monodromy-extended closed string axions. We systematically analyze this possibility and show that the mechanism is compatible with moduli stabilization and can be realized in many types of compactifications. In this class of models, the potential is linear in the canonical inflaton field, predicting a tensor to scalar ratio r of 0.07 accessible to upcoming CMB observations.
10:30-11:00	**COFFEE BREAK** *(outside Lecture Hall)*	
11:00-11:40	**Henry Tye** *(Cornell University)* Is there eternal inflation in the cosmic landscape?	A specific viewpoint of the cosmic landscape is proposed. After a brief review of the relevant parts of the structure of the stringy cosmic landscape, I argue that eternal inflation around the scale relevant for the temperature fluctuation in the cosmic microwave background radiation is not generic. Implications of this on the landscape are discussed.
11:40-12:20	**Rachel Bean** *(Cornell University)* Dark Energy's Dual Personality	As well as Einstein's cosmological constant a variety of alternative dark energy scenarios are currently under consideration, including particle-based theories and modifications to General Relativity. We will discuss how observations might be employed to differentiate between these different theoretical avenues.
12:30-2:00	**LUNCH** *(Community Terrace)* Buffet: Gormet Deli (vegetarian options available)	

Cosmo 08 - PROGRAM

TUESDAY, August 26, 2008 **PARALLEL PROGRAM**

	Parallel 5 *CMB & LSS/Gravity Waves* Session Chair: Christoph Schmid Room: Hall of Ideas Room H	**Parallel 6** *String Cosmology* *Session Chair: Jim Cline* Room: Hall of Ideas Room I	**Parallel 7** *Dark Energy & Dark Matter* *Session Chair: Dejan Stojkovic* Room: Hall of Ideas Room G	**Parallel 8** *Inflation* *Session Chair: Richard Woodard* Room: Lecture Hall
2:00-2:20	**Ali Vanderveld** *(Caltech/JPL)* The impact of supernova peculiar velocities on cosmology past and future	**Sebastien Renaux-Petel** *(APC)* Multi-field DBI inflation	**Ingunn Kathrine Wehus** *(University of Oslo & Caltech)* Four-dimensional General Relativity from higher-dimensional Gauss-Bonnet gravity	**Jinn-Ouk Gong** *(University of Wisconsin - Madison)* Curvature perturbation spectrum from false vacuum inflation
2:20-2:40	**Donghui Jeong** *(University of Texas at Austin)* Perturbation Theory Reloaded : Non-linear Bias, Baryon Acoustic Oscillations and Millennium Simulation	**Neil Barnaby** *(University of Toronto / CITA)* Nonlocal Inflation from String Theory	**Leonid Verozub** *(Kharkov National University)* On accelerated Universe expansion	**Sugumi Kanno** *(IPMU)* Anisotropic Inflationary Scenario
2:40-3:00	**Doug McKay** *(University of Kansas)* Signatures of pseudoscalar-photon mixing in CMB polarization	**Heng-Yu Chen** *(University of Wiscosnin - Madison)* Systematic of Multi-Field Effects in Warped Deformed Conifold	**Manu Paranjape** *(Université de Montréal)* A Modest Appeal to Conformal Gravity	**Jonathan Braden** *(University of Toronto / CITA)* N-flationary Reheating
3:00-3:20	**Jai-chan Hwang** *(Kyungpook National University)* Nonlinear cosmological power spectra in Einstein's gravity	**Mairi Sakellariadou** *(King's College London, University of London)* Dynamics of cosmic superstring networks	**Sourish Dutta** *(Vanderbilt University)* A new perspective on the relation between dark energy perturbations and the late-time ISW effect	**Kohei Kamada** *(University of Tokyo)* Dissipative effects on MSSM inflation
3:20-3:40	**Pascal Vaudrevange** *(Case Western Reserve University)* Including unknown unknowns in Bayesian model selection	**Nissan Itzhaki** *(Tel-Aviv University)* From the overshoot problem to giant structure	**Sirichai Chongchitnan** *(University of Oxford)* Perturbations in Quintessence Models with Interactions in the Dark Sector	**Laila Alabidi** *(University of London)* Inflation Models After WMAP year 5
3:40-4:00	**COFFEE BREAK** *(outside Lecture Hall)*			
4:00-4:20	**Sarah Church** *(Stanford University)* Measurements of CMB Polarization with the QUaD Experiment	**Jiajun Xu** *(Cornell Universtiy)* Duality Cascade in Brane Inflation	**Ram Gopal Vishwakarma** *(University of Zacatecas)* Does Dark Energy Signal a Wrong Physics?	**Marco Peloso** *(University of Minnesota)* Signatures of an anisotropic stage at the onset of inflation
4:20-4:40	**Clement Pryke** *(University of Chicago)* Analysis of QUaD data	**Larissa Claudia Lorenz** *(Institut d'Astrophysique de Paris, France)* Slow-roll trajectories in k-/DBI-inflation and perturbation spectra in	**Sanjeev Seahra** *(University of New Brunswick)* Cosmological perturbations in the DGP scenario	**Maria Beltran** *(University of Chicago)* Non-gaussianity, the curvaton, and possible consequences for the dark matter
4:40-5:00	**Stephen M. Watt** *(University of Western Ontario)* Admissible symmetries of the electromagnetic field in LRS spacetimes	**Marco Zagermann** *(MPI for Physics)* D3/D7-Brane Inflation Revisited	**Peter Dunsby** *(University of Cape Town)* Cosmological Dynamics and Structure Formation in f(R) gravity	**Mike McCulloch** *(University of Exeter, U.K.)* From the Pioneer-flyby anomalies to an alternative cosmology
5:00-5:20	**Larry Price** *(UW Milwaukee)* Stochastic Backgrounds of Gravitational Waves from Cosmological Sources		**Sante Carloni** *(University of Cape Town)* Cosmological Dynamics and Structure Formation in f(R) gravity	**Nishant Agarwal** *(Cornell University)* Observational constraints on the general inflationary action
5:20-5:40	**Thomas Konstandin** *(IFAE, Barcelona)* Gravitational Wave Production by Bubble Collisions		**Naureen Goheer** *(University of Cape Town)* On the Stability of the Einstein static universe in f(R)-gravity	**Sami Nurmi** *(University of Helsinki)* MSSM inflation
5:40-6:00	**Hasan Yuksel** *(Ohio State University)* Revealing the High-Redshift Star Formation Rate with Gamma-Ray Bursts		**Alessio Notari** *(CERN)* Cosmological Effect of Large Voids: an alternative to Dark Energy?	

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TUESDAY, August 26, 2008 **PLENARY PROGRAM**

	PLENARY - EVENING SESSION Astrophysical Connections Room: Lecture Hall	**Session Chair: Mu-Chun Chen, UC Irvine**
7:15-8:10	**Keith Olive** *(University of Minnesota)* Beyond the CMSSM	No abstract available
8:10-8:50	**Angela Olinto** *(University of Chicago)* The Highest Energy Particles	After almost a century of observations, we still don't know the origin of the highest energy cosmic rays but the possibilities have narrowed down with the discovery that the ultra-high energy sky displays an anisotropic distribution in arrival directions. A significant correlation between the arrival directions of ultra-high cosmic rays measured by the Pierre Auger Observatory and the distribution of nearby active galactic nuclei signals the dawn of particle astronomy. We will discuss these historic results and their implications both for astrophysics and particle physics. Future projects on the field will also be addressed.
8:50-9:30	**John Beacom** *(Ohio State University)* Neutrino Astrophysics and Cosmology	Can we use neutrinos to reveal hidden truths about the cosmos? Only if we have detectors of formerly-unimagined sensitivity, only if we understand the properties of neutrinos well enough, and only if other data suggest neutrino fluxes that are large enough. I will show that these three conditions are now met, and that great discoveries with astrophysical neutrinos can be made in the next several years.
9:30-10:10	**Yong Qian** *(University of Minnesota)* Supernovae as sources of nuclei and probes of neutrino physics	Observations with large telescopes such as Keck, VLT, and Subaru have provided an extensive data base on elemental abundances in the oldest stars of the Galaxy. These stellar fossil records shed important light on the characteristics of the supernova sources that provided chemical enrichment in the early Galaxy. These sources continue to operate till the present time and two major types are also profuse sources of neutrinos. The density structure and its time evolution inside these supernovae are essential to nucleosynthesis and have a major impact on the flavor transformation of neutrinos. This talk will discuss how observations of elemental abundances in the oldest stars reveal different types of supernovae as sources for different nuclei and how these supernovae may be distinguished by their neutrino signals. The effects of self-interaction of the dense supernova neutrino gas on its flavor evolution will be described. The potential of determining the neutrino mass hierarchy through such effects on the supernova neutrino signals will be discussed.

Cosmo 08 - PROGRAM

WEDNESDAY, August 27, 2008 PLENARY PROGRAM

	PLENARY Baryogenesis & Leptogenesis Room: Lecture Hall	**Session Chair: Thomas Konstandin, IFAE Barcelona**
9:00-9:40	**Vincenzo Cirigliano** *(Los Alamos National Laboratory)* Supersymmetric electroweak baryogenesis and its experimental probes	In this talk I will describe recent progress in the theory and phenomenology of baryogenesis at the weak scale, with emphasis on the Minimal Supersymmetric Standard Model. I will sketch the derivation of the transport equations relevant to baryogenesis from non-equilibrium quantum field theory and I will discuss the validity of commonly used approximations. I will then describe the conditions for successful baryogenesis in the MSSM and the implications for permanent electric dipole moment signals.
9:40-10:20	**Marcela Carena** *(Fermilab)* Electroweak Baryogenesis and Colliders	No abstract available
10:20-11:00	**Stefano Profumo** *(University of California, Santa Cruz)* Electro-weak Baryogenesis: a Multi-Faceted Approach	We study supersymmetric models that include a viable dark matter candidate and that generate the observed baryon asymmetry of the Universe at the electro-weak phase transition. We focus on the possibility of probing these models with searches for the permanent electric dipole moment (EDM) of the electron, with direct and indirect dark matter searches, and with high energy colliders. We point out that the lightest neutralino might play a key role for the generation of both baryonic and dark matter. We show that models overproducing relic neutralinos put tighter constraints on successful electro-weak baryogenesis. We present new results on two-loop electric dipole moments and investigate in detail the entire parameter space of the minimal supersymmetric extension of the standard model where electro-weak baryogenesis can account for the baryon asymmetry of the universe. We claim that the ensamble of experimental tests we consider makes ours a testable framework for the origin of both the dark matter and the baryonic matter-antimatter asymmetry in the Universe.
11:00-11:30	**COFFEE BREAK** *(outside Lecture Hall)*	
11:30-12:10	**Mu Chun Chen** *(University of California - Irvine)* Leptogenesis	Leptogenesis as a mechanism for generating cosmological baryon asymmetry of the Universe has gained significant interests ever since the advent of the evidence of neutrino masses. In this talk, I will review recent developments in leptogenesis, including the flavor effects and consequences of the quantum Boltzmann equations. I will also describe how a connection between leptogenesis and low energy CP violation processes, such as neutrino oscillation, can be established.
12:10-12:50	**Alexander Dolgov** *(University of Ferrara, INFN, and ITEP)* Cosmic antimatter: Models and observational manifestations	The models of baryogenesis which lead to abundant production of antimatter in the universe and, in particular, in the Galaxy and phenomenology of different antimatter objects in our neighborhood are considered. Observational bounds are reviewed and possibilities of discovery of cosmic antimatter by existing and future missions are discussed.
12:50-1:20	**GROUP PHOTO** *(on Roof of Monona Terrace)*	
1:20	**END FOR THE DAY**	

Cosmo 08 - PROGRAM

THURSDAY, August 28, 2008 **PLENARY PROGRAM**

	PLENARY Inflation & Cosmological Perspectives Room: Lecture Hall	**Session Chair: Richard Woodard, University of Florida**
8:30-9:10	**Jim Cline** (McGill University) Update on Brane Inflation from String Theory	I will review the status and theoretical challenges facing several of the most popular string theoretic models of inflation, with emphasis on those based on D3 branes in warped throats, and the D3-D7 model. I will discuss recent progress on addressing the fine tuning problems of warped brane inflation, and a fully explicit example of inflation in the D3-D7 model.
9:10-9:50	**Rob Caldwell** (Dartmouth College) Perspectives on Dark Energy: A review of constraints and clues to dark energy physics	The status of the cosmological constant and a review of the most recent constraints on dark energy parameters will be presented. Alternative cosmological models will also be discussed.
9:50-10:30	**Hitoshi Murayama** (University of California - Berkeley & IPMU) Reconciling supersymmetry and leptogenesis	Since the discovery of the neutrino mass, leptogenesis has become the dominant paradigm for the origin of the baryon asymmetry of the universe. Unfortunately in it's simplest form, it is incompatible with superstmmetry because of the gravitino problem. I discuss how they can be reconciled with new schemes of superstmmetry breaking, such as anomaly mediation or recent simplified scheme of gauge mediation.
10:30-11:00	**COFFEE BREAK** *(outside Lecture Hall)*	
11:00-11:40	**Wayne Hu** (University of Chicago) Cosmic Acceleration from Modified Gravity: Lessons from the f(R) Worked Example	No abstract available
11:40-12:20	**Ben Wandelt** (Univeristy of Illinois) Primordial non-Gaussianity and the cosmic microwave background	I will review the current state of bispectrum based measurements of non-Gaussianity in the cosmic microwave background and discuss the prospects for non-Gaussianity with Planck.
12:30-2:00	**LUNCH** *(Community Terrace)* Buffet: Southwestern (vegetarian options available)	

Cosmo 08 - PROGRAM

THURSDAY, August 28, 2008 **PARALLEL PROGRAM**

	Parallel 9 *Cosmic Rays & Neutrinos* *Session Chair: Ceclia Lunardini* Room: Hall of Ideas Room H	**Parallel 10** *Dark Energy & Dark Matter* *Session Chair: Christian Armendariz-Picon*	**Parallel 11** *Inflation* *Session Chair: Jai-Chan Hwang* Room: Lecture Hall	**Parallel 12** *Baryogenesis, OFT in Curved, Phase Trans* *Session Chair: Bjorn Garbrecht*
2:00-2:20	**Andrey Beresnyak** *(University of Wisconsin - Madison)* Cosmic Ray Scattering in MHD Turbulence	**Istvan Laszlo** *(Cornell University)* Probing the Dark Sector	**Tirthabir Biswas** *(IGC, Penn State University)* Emergent Cyclic Universes and Tolman's Entropy Problem	**Lotta Mether** *(Helsinki Institute of Physics & CERN)* Supersymmetric Leptogenesis and the Gravitino Bound
2:20-2:40	**Annelise Malkus** *(University of Wisconsin - Madison)* Exploring new physics with solar neutrinos	**Troels Haugbølle** *(University of Aarhus)* Is living in a void compatible with observational cosmology?	**Shuntaro Mizuno** *(University of Tokyo)* Non-gaussianity from the bispectrum in general multiple field inflation	**Sean Tulin** *(Caltech)* Squarks, Gauginos, and Electroweak Baryogenesis
2:40-3:00	**Brian Mercurio** *(Ohio State University)* Sensitivity Sky Maps of the ANITA Experiment	**Vincenzo Branchina** *(University of Catania)* Effective field theory energy-momentum tensor and cosmological constant problem	**Soo A Kim** *(Kyung Hee University)* Nflation: observable predictions from the random matrix mass spectrum.	**Steve Blanchet** *(MPI for Physics)* New aspects of leptogenesis bounds
3:00-3:20	**Gava Jérôme** *(Institut De Physique Nucléaire d'Orsay)* Possible CP-Violation effects in core-collapse Supernovae	**Viviana Acquaviva** *(Princeton University)* Redshift Galaxy Surveys and the origin of cosmic acceleration	**Jiro Soda** *(Kyoto University)* Primordial gravitational waves in the anisotropic inflationary universe	**Tao Liu** *(University of Chicago)* Electroweak Baryogenesis in Supersymmetric U(1)' Model
3:20-3:40	**Ina Sarcevic** *(University of Arizona)* Neutrino fluxes from astrophysical sources: the role of the charmed meson production and decay	**Kenji Kadota** *(University of Minnesota)* Sterile neutrino dark matter in warped extra dimensions	**Thorsten Battefeld** *(Princeton University)* Staggered Multi-Field Inflation	**Tsutomu Takayama** *(University of Tokyo)* Affleck-Dine leptogenesis via multiscalar evolution in a supersymmetric seesaw model
3:40-4:00	**COFFEE BREAK** *(outside Lecture Hall)*			
4:00-4:20	**James Braun** *(University of Wisconsin - Madison)* Searches for Neutrino Point Sources with AMANDA-II and IceCube	**Leanne Duffy** *(Los Alamos National Laboratory)* Dark Matter Caustics	**Jinn-Ouk Gong** *(Univeristy of Wisconsin - Madison)* Conservation and evolution of the curvature perturbation	**Zurab Tavartkiladze** *(Oklahoma State University)* Predictive Scheme for Neutrino Oscillations and Resonant Leptogenesis
4:20-4:40	**Matt Kistler** *(Ohio State University)* Finding and examining supernovae through their neutrinos	**Olivier Wantz** *(University of Cambridge)* Axions from the misalignment mechanism	**Vitaly Vanchurin** *(University of Munich)* Vector inflation	**Yingchuan Li** *(University of Wisconsin - Madison)* Higgs-Higgsino-Gaugino induced two-loop EDMs
4:40-5:00	**Amjad Ashoorioon** *(University of Michigan)* Gravity Waves from Singlet Higgs Phase Transitions	**Wai-Yee Keung** *(University of Illinois at Chicago)* Spin Dependence of Dark Matter Scattering	**Yuki Watanabe** *(University of Texas at Austin)* Reheating of the universe after inflation with f(phi)R gravity	**Gianluca Calcagni** *(Penn State University)* Gravity and the cosmological constant as superconducting phenomena
5:00-5:20		**Xerxes Tata** *(University of Hawaii)* Phenomenology of relic-density-consistent models with thermal neutralino dark matter	**A. Emir Gumrukcuoglu** *(University of Minnesota)* The role of SUSY flat directions in reheating	**Peter Sloan** *(University of Toronto / CITA)* Gravity Waves from Cosmological Phase Transition
5:20-5:40		**Juliane Behrend** *(ITP, Ulm University)* On a generally-covariant approach to the averaging problem in cosmology	**Christoph Schmid** *(ETH Zurich)* Mach's Principle: Exact Frame-Dragging by Perturbations of Friedmann-Robertson-Walker Universes with K = (+1, -1, 0)	**Matthew M. Glenz** *(UW Milwaukee)* Dispersion Spectrum of Inflaton Perturbations Calculated Numerically with Reheating
5:40-6:00		**Kathryn M. Zurek** *(University of Wisconsin - Madison)* DAMA and light dark matter	**John Giblin** *(Yale University)* Stochastic gravitational radiation produced after inflation.	**Richard Woodard** *(University of Florida)* The Leading Logarithm Approximation for Inflationary QFT

7:00-9:00	**BANQUET** *(Community Terrace)*	**Banquet Speaker: Lawrence Krauss** *(Arizona State University)* Cosmology as Science?: From Inflation to Eternity	The last decade or has been the golden age of observational cosmology, producing a revolution in our picture of the Universe on its largest scales, and perhaps also its smallest one. I will argue that these recent development bring to the forefront some disturbing questions about whether fundamental assumptions about the universe are in fact falsifiable. I will focus on 3 issues:

Cosmo 08 - PROGRAM

FRIDAY, August 29, 2008 **PLENARY PROGRAM**

	PLENARY Horizons Room: Lecture Hall	**Session Chair: Cristian Armendariz-Picon, Syracuse University**
8:30-9:10	**Gordy Kane** (Univeristy of Michigan) Are we beginning to see dark matter?	We discuss the possible galactic positron excess and constraints on interpreting it as dark matter annihilation. We consider wino and higgsino LSPs that provide the local relic density and a positron excess (which implies the relic density is non-thermal in origin and important consequences for cosmological history and underlying theories), comment on how to study these issues at LHC, and on the relation to direct detection experiments.
9:10-9:50	**Steve Ritz** (NASA GSFC) GLAST Status and Plans	he Gamma-ray Large Area Space Telescope, GLAST, is a mission to measure the cosmic gamma-ray flux in the energy range 20 MeV to >300 GeV, with supporting measurements for gamma-ray bursts from 8 keV to 30 MeV. The very large field of view makes it possible to observe 20% of the sky at any instant, and the entire sky on a timescale of a few hours. With its recent launch on 11 June, GLAST now opens a new and important window on a wide variety of phenomena, including black holes and active galactic nuclei; the optical-UV extragalactic background light, gamma-ray bursts; the origin of cosmic rays and supernova remnants; and searches for hypothetical new phenomena such as supersymmetric dark matter annihilations. In addition to the science opportunities, this talk includes a description of the instruments and the mission status and plans. More information about the GLAST mission may be found at http://www.nasa.gov/glast .
9:50-10:30	**Bob Armstrong** *(Indiana University)* Cosmic Rays and Neutrinos from MINOS	The MINOS experiment is a long-baseline neutrino oscillation experiment employing the NuMI neutrino beam from Fermilab to the MINOS far detector in northern Minnesota. Although designed to detect neutrinos, it is sensitive to high-energy cosmic ray muons and atmospheric neutrinos. The far detector has been taking cosmic ray data since 2003. From this data the muon charge ratio has been measured underground and projected back to the surface. Also, a high correlation has been seen between the rate of cosmic ray muons and the temperature of the upper atmosphere. Neutrino oscillation results will be presented as well including a preliminary search for sterile neutrinos
10:30-11:00	**COFFEE BREAK** *(outside Lecture Hall)*	
11:00-11:40	**Chris Savage** (University of Minnesota) The status of DAMA and direct detection of WIMPs	I will review the DAMA experiment and the recent DAMA/LIBRA result that confirms an earlier observation of a modulation signal. Possible sources for the observed modulation will be explored as well as various detector-related issues that may affect the analysis of this signal. In the context of elastic scattering, experimental constraints on the spin-independent and spin-dependent couplings of WIMPs to nuclei will be examined and, in particular, I will examine the compatibility of the DAMA result with that of other experiments.
11:40-12:20	**Paul Frampton** (University of North Carolina - Chapel Hill) High Longevity Microlensing Events and Dark Matter Black	Gravitational microlensing has been employed to identify massive halo objects by their amplilification of distant sources; MACHO searches have studied event times $2h < t_0 < 2y$ corresponding to masses in the range $10^{-6}M_{\odot} < M < 100M_{\odot}$. We suggest that larger masses up to 10^6M_{\odot}$ are also of considerable interest. It has not been excluded that there is a significant number of halo black holes with such masses as suggested by cosmological entropy considerations and potentially detectable
12:20	**END OF CONFERENCE**	