Saturday, April 12

	MSB 1147	MSB 2112	MSB 3106
8:30-9:00am	Registration in **MSB Lobby**		
9:00-9:10	Opening Remarks in **MSB 1147**		
9:15-9:40	Derrick Stolee (`s-dstolee1@math.unl.edu`) University of Nebraska-Lincoln **On Minimum Rectilinear Partitioning** The problem of dissecting a rectilinear polygon into rectangles has several applications and is well studied. This talk will present an overview of the current results as well as raise the question of how the problem generalizes into dimensions higher than two.	Luis Serrano (`lserrano@umich.edu`) University of Michigan **Noncommutative P-Schur functions, the shifted plactic monoid, and applications** Symmetric functions form an algebra Γ, which arises in other fields of mathematics, such as representation theory, algebraic geometry, etc. An important basis for Γ as a vector space is formed by Schur functions, which multiply according to the Littlewood-Richardson rule. Fomin and Greene have developed a theory of Schur functions in noncommutative variables which gives rise to generalizations of the Littlewood-Richardson rule. In this talk, we will develop an analogous theory for P-Schur functions in noncommutative variables. We will also discuss a type B analog of the plactic monoid of Lascoux and Schützenberger.	Ben Hester (`benjamin@mathpost.asu.edu`) Arizona State University **Relaxed Graph Pebbling** Many graph parameters, such as chromatic number, clique number, cover number, and matching number, can be formalized as combinatorial optimization problems. Relaxing the constraints of these problems to allow non-integer-valued variables creates fractional graph parameters, which themselves can be interpreted combinatorially. Interestingly, graph pebbling has a similar fractional variant, with its own combinatorial interpretation. In graph pebbling, a configuration of pebbles is placed on the vertices of a graph G. A pebbling move removes 2 pebbles from a vertex v which contains at least 2 pebbles and places 1 pebble on a neighbor of v. So, 1 pebble is lost in the transfer. The t-pebbling number of G, denoted $\pi_t(G)$, is equal to the smallest integer k such that no matter how k pebbles are distributed to the vertices of G, for every vertex v, there is some sequence of pebbling moves that places t pebbles on v. The fractional pebbling number of G is defined by $\hat{\pi}(G) = \liminf_{t\to\infty} \pi_t(G)/t$. Thus, in some sense, $\hat{\pi}(G)$ is the average number of pebbles necessary per solution, where each pebble has a fractional weight. We calculate the fractional pebbling numbers of certain very simple graphs and show that, in fact, for any graph G, $\hat{\pi}(G) = 2^{\mathrm{diam}(G)}$. Like other graph parameters with fractional variants, it would be nice if graph pebbling could be formulated as an integer optimization problem, as this would provide an upper bound on its complexity. However, no such formulation is known.
9:50-10:15	Steven Sam (`ssam@berkeley.edu`) University of California, Berkeley **A bijective proof for a theorem of Ehrhart** A well-known theorem of Ehrhart states that if P is an integral polytope, then there exists a polynomial whose evaluations at positive integers n are the number of integer points in nP. More surprisingly, when evaluated at negative integers -n, this polynomial gives (up to a sign) the number of interior points in nP. Unfortunately, the standard proofs of this reciprocity law are unenlightening and obscure the geometry. I'll present a proof that I discovered which involves recurrence relations and a geometric bijection.	Andrew Baxter (`baxter@rutgers.edu`) Rutgers University **A translation method for finding bijective proofs** Suppose you have a combinatorial identity which you can prove via induction (e.g. almost any Fibonacci identity). We present a method developed by Doron Zeilberger and Philip Matchett-Wood which translates your induction argument into a recursive bijection on the underlying sets of objects. Based on this recursive bijection, one can hope to formulate a recursion-free bijection. Following an outline of the method, several examples will be shown.	Csaba Biró (`biro@math.gatech.edu`) Georgia Institute of Technology **On-line algorithms on partially ordered sets** Finding the chain partition of a partially ordered set is an easy job. The problem becomes much more interesting if we need to do it on-line. An adversary gives us the poset point by point, in each step only revealing the relationship of the current point with the previous ones. After every point, we have to assign that point irrevocably to a chain. The width of the poset is restricted, but it is not clear if we can create an on-line chain partition with a bounded number of chains. Although this problem is settled positively, many similar problems are open. We will explore research opportunities in this area, concentrating in particular on on-line dimension, in which the goal is to build a realizer for a poset in an on-line manner. (Dimension and realizer will be defined in the talk.) Determining exactly when it is possible has been open for 20 years, and it is one of the speaker's favorite problems.
10:30-10:55	Break in **MSB 2208 (Alder Room)**		
11:00-11:50	Keynote address by Arun Ram in MSB 1147: **Symmetric functions d'après Macdonald** This talk will be a road map to Macdonald's classic book on Symmetric functions, highlighting the combinatorics, representation theory and geometry coded by symmetric function identities.		
12:00-2:00pm	Lunch		

	MSB 1147	MSB 2112	MSB 3106
2:00-2:25	Kelli Talaska (kellicar@umich.edu) University of Michigan **Planar networks and the totally nonnegative Grassmannian** We will examine Postnikov's boundary measurement map associating to each planar network a point in the Grassmannian. We will give a formula for the Plücker coordinates of this map; it can be viewed as a generalization of Lindström's result for acyclic planar networks.	Zajj Daugherty (daughert@math.edu) University of Wisconsin, Madison **Combinatorics of graded diagram algebras** Many diagram algebras (e.g. $\mathbb{C}S_k$, the Brauer algebras, Hecke algebras, etc.) arise as tensor power centralizer algebras, algebras of operators which preserve symmetries in a tensor space. The classical case, studied by Frobenius and Schur around 1900, provided the link between the representation theory of the symmetric group and the general linear group. In this talk, I will use combinatorial tools to explore the representation theory of graded diagram algebras and their complimentary Lie algebras.	Matthew Morin (mjmorin@interchange.ubc.ca) University of British Columbia **Distinguishing Certain Graphs via the Chromatic Symmetric Function** Given a simple graph $G = (V, E)$, the chromatic symmetric function of the graph is given by $X_G = \sum_\kappa \prod_{v \in V} x_{\kappa(v)}$, where the sum is over all proper colorings $\kappa : V \to \mathbb{N}$ of G. This extension of the well-known chromatic polynomial of a graph, $\chi_G(k)$, was first introduced by Stanley. Stanley then posed the question of whether there exists nonisomorphic trees T_1 and T_2 such that $X_{T_1} = X_{T_2}$. The answer to this problem is still unknown. We present some basic invariants of G that can be recovered from X_G and mention certain families of trees (spiders and some caterpillars) and unicyclic graphs (squids and some crabs) for which it has been shown that $X_{G_1} = X_{G_2}$ if and only if G_1 and G_2 are isomorphic.
2:30-2:55	Steve Butler (sbutler@math.ucsd.edu) University of California, San Diego **An Erdős-Ko-Rado problem on the strip** A family of subsets of $[n]$ is said to be intersecting if any two of the sets share a common element. The well-known Erdős-Ko-Rado Theorem gives an upper bound on the maximum size of a family of k element sets which are intersecting. More generally, Erdős-Ko-Rado type problems can be given for any combinatorial object where intersection is well defined. In this talk we will consider an Erdős-Ko-Rado problem related to strips (which can be thought of as a sequence of squares labeled $1, 2, \ldots, n$) and give some basic results about the maximal size of an intersecting family in this setting.	Andrew Berget (berget@math.umn.edu) University of Minnesota **A symmetric group representation for matroids** This talk will be about how the dependent sets of a matroid give rise to a symmetric group representation. I will show how this module behaves with respect to some simple matroid operations and determine how it decomposes when the matroid is uniform. I will also explain how to determine the multiplicity of a hook shape in such a module.	Amanda Ruiz (alruiz@sfsu.edu) San Francisco State University **The Isomorphism Theorem for Cotransversal Matroids** Given two graphs, it is of interest to know whether the cotransversal matroids they generate are isomorphic. We define local moves on a graph which preserve the matroid, and prove that any two graphs which give rise to the same cotransversal matroid can be obtained from each other by these local moves.
3:00-3:25	Cesar Ceballos (ca.ceballos954@uniandes.edu.co) Universidad de los Andes **Colorations of fine mixed subdivitions of simplices** There is a surprising relationship between the geometry of d flags in $\mathbb{C}^n$ and fine mixed subdivition of simplices. Ardila and Billey conjecture that the possible locations of the simplices in a fine mixed subdivition are precisely the bases of the matroid of lines that result from intersecting d complete flags in $\mathbb{C}^n$. A relationship with this problem arises in the case of triangulations of products of simplices, tropical geometry, tropical oriented matroids and colorations of fine mixed subdivitions of simplices. For each fine mixed subdivition, are assigned different colors to each of the simplices and spread via the mixed cells; to do this, it appears so natural configuration of permutations on the edges of the initial simplex. I have characterized that in dimension 2 a configuration of permutations can be achieved through this process if and only if it does not appear $a\ldots b, a\ldots b, a\ldots b$ in the sides of the triangle, and I provide evidence to conjecture that the same is true in every dimension. I also have shown that for every permutation that is achievable there is a unique choice of the positions of the simplices that are generating, and I give a very beautiful and easy way to obtain these positions. Finally, this method proved to be a very powerful tool to attack this kind of conjectures, and I give some applications of this.	Kagan Kursungoz (kursun@math.psu.edu) The Pennsylvania State University **k-marked Durfee symbols** In a recent paper, Andrews defined k-marked Durfee symbols, which are generalizations of the ordinary Durfee symbol. He assigned 1st, ..., kth ranks to a k-marked Durfee symbol, which reduce to Dyson's rank for $k = 1$. He then provided and proved many related congruences and identities. This talk will focus on a combinatorial explanation for $k = 2$ case of a recurrence stated in the paper (the general case also, as time allows). This is joint work with Cilanne Boulet, Cornell Univ.	Michelle Edwards (michelle@math.uvic.ca) University of Victoria **Independent Domination Critical and Bicritical Graphs** A graph is independent domination critical if the removal of any vertex reduces the independent domination number and it is independent domination bicritical if the removal of any two vertices reduces the independent domination number. In this talk we will investigate various construction methods and diameter results for such graphs. This is joint work with A. Finbow and G. MacGillivray.

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3:30-4:00	Break in **MSB 2208 (Alder Room)**		
4:00-4:25	Patrick Boland (boland@math.umass.edu) University of Massachusetts - Amherst **Compactifications of locally symmetric spaces** I study Satake and toroidal compactifications of locally symmetric spaces. The boundary components at infinity of Satake compactifications correspond to faces of certain convex polytopes. Toroidal compactifications are defined using polyhedral cone decompositions. I plan to introduce these compactifications and their combinatorial models for the spaces $SL_3(\mathbb{Z})\backslash SL_3(\mathbb{R})/SO(3)$ and $Sp_4(\mathbb{Z})\backslash Sp_4(\mathbb{R})/U(2)$.	Lara Pudwell (lpudwell@math.rutgers.edu) Rutgers University **Barred Permutation Patterns** Barred permutation patterns are a natural generalization of standard permutation patterns. I will give several nice results for the number of permutations avoiding certain barred permutation patterns, and give an idea of how to teach the computer to find recurrences enumerating these permutations as well.	Emilie Hogan (eahogan@math.rutgers.edu) Rutgers University **Somos and Somos-like Sequences: Surprisingly integral sequences** Somos-k is defined by the following quadratic recurrence $$S(n)S(n-k)=\sum_{i=1}^{\lfloor \frac{k}{2} \rfloor} S(n-i)S(n-k+i)$$ with initial conditions $S(j)=1$ for $j \leq k$. For $k=2,3,...,7$ these recurrences, in which you divide by $S(n-k)$ at every step, surprisingly give rise to sequences consisting entirely of integers. I will explain this phenomenon and also give a new infinite family of recurrences that carry this same property.
4:30-4:55	Chris Severs (chris.severs@asu.edu) Arizona State University **The rank of $A_1^{n-1}(Asc_n)$** In recent years there has been much research involving the associahedron, a polytope that has many combinatorial interpretations and generalizations. In our study of the discrete homotopy group of Asc_n, the simplicial complex of all triangulations of an $(n+3)$-gon, we are naturally led to its exchange graph, which corresponds to the 1-skeleton of the associahedron. We prove that the Abelianization of the discrete fundamental group $A_1^{n-1}(Asc_n)$ has rank $\binom{n+2}{4}$ and that $A_1^{n-1}(Asc_n)$ is isomorphic to a free group on $\binom{n+2}{4}$ generators. This is joint work with Hélène Barcelo and Jacob White.	Ryan Flynn (rflynn@math.ufl.edu) University of Florida **Permutation patterns and pattern packing** The area of permutation patterns is a relatively young branch of enumerative combinatorics, and can be roughly thought of as a generalization of the notion of inversions (or inverted pairs) in permutations. I will give a brief introduction to this fascinating subject and outline a proof of a conjecture of Wilf's on pattern packing. If time permits, I will discuss a few open problems.	Elizabeth Kupin (ekupin@math.rutgers.edu) Rutgers University **Low Distortion Embeddings of Metric Spaces and Graph Theory** When can we map a set of data from an arbitrary metric space into a 'nice' metric space - $\mathbb{R}^n$ or $\mathbb{R}^n$ under the ℓ_p norm ($p \neq 2$), for example - without losing too much information about our original data? Distortion gives us a way to quantify how much information we will lose, and studying low distortion embeddings gives a family of results about when this is possible and (just as interesting!) when it must be impossible. These characterizations are important in finding fast algorithms for problems in various fields. I am particularly interested in the negative results (i.e. when will we not be able to embed into a 'nice' space), because they sometimes lean heavily on graph theory. Every graph has a natural shortest path metric, but it's a bit surprising that it goes the other way - every finite metric space in some sense comes from a finite weighted graph. This lets us use existing graph theory results to try to find poorly-embeddable metric spaces. In this talk I will try to give a brief introduction to this area (following a book chapter by Indyk and Matousek), particularly focusing on applications of graph theory.
5:00-5:25	Jacob White (white@mathpost.asu.edu) Arizona State University **Discrete homotopy groups on the face lattice of the cube** Discrete homotopy groups for simplicial complexes and graphs were recently introduced by Barcelo et al.. One interesting application was the proof that the $n-k$th discrete fundamental group of the order complex of the boolean lattice is isomorphic to the (classical) fundamental group of the complement of the k-equal arrangement. In the course of proving this theorem, Barcelo and Smith use an exchange graph that turns out to be the 1-skeleton of the permutahedron. In this talk, we generalize these constructions and results to the face lattice of the cube, and thus to the type B permutahedron and to the type B k-equal arrangement. This is joint work with H. Barcelo.	Nick Newman (newmana@auburn.edu) Auburn University **Enclosings of λ-fold Triple Systems** Over the past five years, Hurd et al considered the problem of enclosing a triple system $\mathrm{TS}(v,\lambda)$ into a triple system $\mathrm{TS}(v+s,\lambda+m)$, focusing on smallest possible enclosings. In this paper, their result is generalized using a new proof based on a graph-theoretic technique. Four constructions are presented; they are exhaustive in the sense that, for each possible congruence of the parameters s and m, at least one construction can be applied to obtain an enclosing. In each construction, the value of s is restricted.	Mohit Kumbhat (kumbhat2@uiuc.edu) University of Illinois Urbana-Champaign **Coloring uniform simple hypergraphs with few edges** A hypergraph H is *b-simple* if any two edges have at most b common vertices. Let $m(n,t,b)$ denote the minimum number of edges in a $(t+1)$-chromatic n-uniform b-simple hypergraph. Erdos and Lovasz proved that $t^{2(n-2)}/[16n(n-1)^2] \leq m(n,t,1) \leq 1600n^4t^{2(n+1)}$. A result of Szabo improves the lower bound by a factor of n^{2-c}, where n is sufficiently large and c is a positive constant. Using similar techniques, we improve the lower bound by a further factor of n, where $c->0$ as $n->\infty$. We also obtain bounds on $m(n,t,b)$ for $b \geq 2$. Let $m'(n,t,g)$ denote the minimum number of edges in a $(t+1)$-chromatic n-uniform hypergraph with girth g; note that $m(n,t,1)=m'(n,t,3)$. We obtain lower bounds on $m'(n,t,g)$ for $g \geq 3$ and n sufficiently large; an upper bound was given by Erdos and Lovasz. This is joint work with A. Kostochka.
5:30-5:40	Group Photo		
7:00	Dinner at **Bistro 33**: 226 F Street (at Third Street)		

Sunday, April 13

	MSB 1147	MSB 2112	MSB 3106
9:00-9:25am	Dumitru Stamate (stamate@umn.edu) University of Minnesota and University of Bucharest **On sequentially Cohen-Macaulay posets** For some reasons, several different types of algebras that we are interested in are Koszul iff certain associated posets have all their open intervals Cohen-Macaulay. When we relax the latter to being sequentially-Cohen-Macaulay, surprisingly enough a certain deformation of the initial algebra becomes Koszul. We will present combinatorially inspired examples of such occurences and describe the interplay between combinatorics and algebra facilitating the situation. This is joint work with Vic Reiner, University of Minnesota.	Michelle Snider (msnider@math.ucsd.edu) University of California, San Diego **Positivity of K-theoretic Littlewood-Richardson Numbers: Unifying Two Approaches** We consider Buch's rule for K-theory of the Grassmannian, in the Schur multiplicity-free cases classified by Stembridge. Combining geometric results of Brion and Ramanathan, one sees that Buch's coefficients are related to Mobius inversion. We give a direct combinatorial proof of this by considering the product expansion for Grassmannian Grothendieck polynomials.	Philippe Choquette (philcho@mathstat.yorku.ca) York University **Hopf algebras and species** We recall the definition of the tensor category of A-species (modules of the symmetric groups S_n) and define the tensor category of B-species (modules of the groups of signed permutations B_n). We give examples of Hopf monoids in species and the corresponding graded Hopf algebras, via bilax functors from the categories of species to the category of graded vector spaces. The graded Hopf algebras obtained include the space of symmetric functions and quasisymmetric functions (for A-species) and diagonally quasisymmetric functions (for B-species).
9:30-9:55	Daniel Wells (dwells@ms.uky.edu) University of Kentucky **Generalized Flips and the *cd*-Index** I will introduce the notions of the *cd*-index of a polytope and bistellar flips on the boundary of a simplicial polytope, then present a generalization of flips to larger classes of polytopes and discuss how these flips affect the *cd*-index.	Eric Clark (eclark@ms.uky.edu) University of Kentucky **Computing the Bracket of Excedance Words** The descent set of a permutation has been widely studied in combinatorics. However, the excedance set which, for a permutation $\pi = \pi_1\pi_2\ldots\pi_n$, is the set of indices i for which $\pi_i > i$ has not received much attention. It was first truly studied in 2000 by Ehrenborg and Steingrmsson, who were able to find an inclusion-exclusion formula for the number of permutations with a given excedance set. In this talk I will discuss this permutation statistic and present different formulas for counting the number of permutations for two specific sequences of excedance sets. I will prove these with a rook counting argument, giving a direct combinatorial proof of the result. This is a joint work with Richard Ehrenborg.	Brandon Humpert (bhumpert@math.ku.edu) University of Kansas **A Generalization of Stanley's Chromatic Symmetric Function** The chromatic symmetric function is a graph invariant that was introduced in 1995 by Stanley as a generalization of the chromatic polynomial. We will discuss a generalization of this symmetric function into a quasisymmetric function by only considering colorings which satisfy a property related to graph orientations.
10:00-10:25	Martha Yip (yip@math.wisc.edu) University of Wisconsin - Madison **Combinatorics of Shi arrangements** A type A Shi arrangement is a collection of hyperplanes that cuts $\mathbb{R}^{n-1}$ into $(n+1)^{n-1}$ regions. I will discuss connections between the regions of the Shi arrangement, parking functions, spanning trees, and a basis for the Gordon module. In fact, the numbers of dominant regions and bounded dominant regions are Catalan numbers, and also provide interesting connections.	Brendon Rhoades (rhoad030@math.umn.edu) University of Minnesota/MSRI **Cyclic Sieving, Promotion, and Representation Theory: I Did My Homework From GSCC 2007** During the 2007 GSCC at the University of Washington, Vic Reiner assigned a homework problem about the action of jeu-de-taquin promotion on rectangular tableaux. I will explain how Kazhdan-Lusztig theory gives a solution to this problem and proves some enumerative conjectures of Reiner and White.	Paul Horn (phorn@math.ucsd.edu) University of California, San Diego **The spectral gap of a random subgraph of a graph** The spectral gap of the normalized Laplacian of a graph is strongly related to many important graph properties, including the mixing rate of random walks as well as expansion and discrepancy properties. Here we consider a random subgraph H of a given graph G where each edge in G is taken to be in H independently with probability p, and derive bounds on the spectral hap of H in terms of the spectral gap of G. This can be thought of as an extension of earlier work on the Erdős-Rényi $G(n,p)$ model, which effectively treats a special case where the underlying graph is the complete graph K_n.
10:30-11:00	Break in **MSB 2208 (Alder Room)**		

	MSB 1147	MSB 2112	MSB 3106
11:00-11:25	Alex Fink (finka@math.berkeley.edu) UC Berkeley **Subdivisions of matroid polytopes** It is a pleasant feature of the theory of matroids that a vast number of equivalent points of view are available. One of these which has gained prominence recently is that of a matroid as a polytope. From this perspective one finds that many significant functions f on matroids are *valuations* of polytopal subdivisions: given a subdivision of the polytope of a matroid M into the polytopes of other matroids $\{M_i\}$, $f(M)$ can be expressed as a certain sum of the $f(M_i)$. I'll introduce the polytopal viewpoint of matroids, and present one or two strong valuations of which a number of standard matroid invariants are evaluations. This talk is based on joint work with Felipe Rincon and Federico Ardila.	Kurt Luoto (kwluoto@math.washington.edu) University of Washington, Seattle **A quasisymmetric decomposition of Schur functions** Schur functions constitute one of the most studied bases for the algebra of symmetric functions. They form a $\mathbb{Z}$-basis for the symmetric functions, with nonnegative integer structure constants, which are the famous Littlewood-Richardson coefficients. In turn, the symmetric functions form a subalgebra of the quasisymmetric functions. In recent work, Haglund and Mason have found a decomposition of Schur functions into quasisymmetric functions, yielding a new $\mathbb{Z}$-basis for the quasisymmetric functions. For the time being we are calling these quasiSchur functions. While this basis does not in general have nonnegative structure constants, it has been empirically observed that the product of a quasiSchur function by a Schur function is positive in the quasiSchur basis. So far we have been able to establish Pieri rules for such products, and we hope to find analogs of other well-known formulas for Schur functions. Joint work with Jim Haglund, Sarah Mason, and Stephanie van Willigenburg.	Florian Block (blockf@umich.edu) University of Michigan **Schur polynomials and puzzles** Schur polynomials play an important role in representation theory, in the study of symmetric functions and in the cohomology of the Grassmannian. The question "How do they multiply?" is fundamental in all these fields. One way to answer it is the famous Littlewood-Richardson rule. I'll show you a different way using triangular puzzles invented by Knudson and Tao. This puzzle rule is so great (also) because it easily generalizes to "equivariant" Schur polynomials just by introducing one "equivariant" puzzle piece. I will start from scratch assuming nothing about Schur polynomials, cohomology etc.
11:30-11:55	Shishuo Fu (fu@math.psu.edu) The Penn State University-University Park **Combinatorial Proof of One Congruence For The Broken 1-diamond Partition** In one of their collaborative papers, George E. Andrews and Peter Paule continue their study of partition functions via MacMahon's Partition Analysis by considering partition functions associated with directed graphs which consist of chains of diamond shape. They prove a congruence related to one of these partition functions and conjecture a number of similar congruence results. My first and major goal in this talk is to reprove this congruence by constructing an explicit way to group partitions so as to explain the congruence combinatorially. Then I keep the essence of the method and manage to apply it to a different combinatorial object.	Kathleen Kiernan (kiernan@math.wisc.edu) University of Wisconsin - Madison **Codes that Identify Vertices in Graphs** Given an undirected graph G is there a subset of the vertices C such that each vertex v is covered by a different non-empty collection of elements of C? If so, C is called an *r-identifying code* in G. (A vertex $c \in C$ *r-covers* itself and any vertices connected to it by a path of length r.) We look for identifying codes that include few vertices. We will discuss bounds on identifying codes for various classes of graphs, and also discuss what happens when either an edge or a vertex is removed.	Jeffrey Doker (doker@math.berkeley.edu) UC Berkeley **Matroid Polytopes as Minkowski Sums** Lots of familiar combinatorial objects can be described in terms of things called Matroids, and every Matroid can be represented as a polytope. It turns out that these Matroid polytopes, as well as some other related polytopes, can be decomposed into nice Minkowski sums of simplices.
12:00-12:50	Keynote address by Ron Graham in MSB 1147: **Euclidean Ramsey Theory** Ramsey theory is a branch of combinatorics which studies unavoidable regularity in large structures. In this talk, I will describe a variety of results and open problems of this type which have a geometrical flavor. A typical (still unsolved) problem of this type is this: Is it true that in any 4-coloring of the points of the Euclidean plane, there is always a pair of points with the same color which are distance 1 from each other?		
12:50-1:00	Closing Remarks in **MSB 1147**		