Submittee: Isabella Novik
Date Submitted: 2010-08-17 10:37
Title: The Mathematics of Klee & Grunbaum, 100 years in Seattle
Event Type: Conference-Workshop

Location:
University of Washington, Seattle

Dates:
July 28--30, 2010

Topic:
areas of combinatorics, discrete and computational geometry, and optimization, motivated by the research of Klee and Grunbaum

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Methodology:
lectures and problem sessions

Objectives Achieved:
20 lectures given by experts and 3 problems sessions stimulated a lot of discussions among the participants; we hope that these discussions will create new collaborations which in turn will lead to many fascinating results. In addition, Branko Grunbaum edited and revised a list of open problems compiled by Victor Klee before the conference, which is now available on the conference web site (see below for the URL). The site also contains an electronic forum to collect comments and solutions to these problems, as well as solutions to other problems that were posed at the conference.

Scientific Highlights:
The most spectacular result presented was Francisco Santos' description of his recent counterexample to the Hirsch conjecture. This conjecture says that the diameter of a convex polytope of n facets in d dimensions is at most n - d. It stood unresolved (except for d

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Organizers:
Holt, Fred (University of Washington, Seattle); Novik, Isabella (Math Department, University of Washington, Seattle); Thomas, Rekha (Math Department, University of Washington Seattle); Williams, Gordon (Department of Mathematics and Statistics, University of Alaska Fairbanks).

Speakers:

Berman, Leah (Department of Mathematics and Statistics, University of Alaska Fairbanks): Symmetric Geometric Configurations. // De Loera, Jesus (Department of Mathematics, UC Davis): Advances on Computer-based lattice point counting and integration over polytopes. // Gritzmann, Peter (Zentrum Mathematik, TU MÃ¼nchen, Germany): On Clustering Bodies, Gravity Polytopes and Power Diagrams: Computational Convexity in Agriculture. // Guy, Richard (Department of Mathematics, University of Calgary): The Lighthouse Theorem: Throwing light on geometry, old and new. // Ivic Weiss, Asia (Department of Mathematics and Statistics, York University Toronto): Combinatorial structure of chiral polyhedra in Euclidean space. // Kalai, Gil (Institute of Mathematics, Hebrew University of Jerusalem, and Department of Computer Science and Department of Mathematics, Yale University): The polynomial Hirsch conjecture. // Kostochka, Alexandr (Department of Mathematics, University of Illinois at Urbana-Champaign): Grunbaum and coloring intersection graphs of geometric figures. // Lawrence, Jim (Department of Mathematical Sciences, George Mason University): Intersections of Chains of Affinely Equivalent Polytopes. // Mohar, Bojan (Department of Mathematics, Simon Fraser University, Canada): Rough structure theorem for symmetric graphs with small separations. // O'Rourke, Joseph (Computer Science Department, Smith College): Unfolding Convex Polyhedra. // Pisanski, Tomaz (Department of Mathematics, University of Ljubljana, Slovenia): From graphs to configurations and back. // Pollack, Richard (Departments of Mathematics and Computer Science, New York University): Double Permutation Sequences and Arrangements of Planar Families of Convex Sets. // Ruskey, Frank (Computer Science Department, University of Victoria): Branko Grunbaum and Venn Diagrams. // Santos, Francisco (Department of Mathematics, Statistics and Computer Science, University of Cantabria, Spain): A counter-example to the Hirsch conjecture. // Schulte, Egon (Department of Mathematics, Northeastern University): Grunbaum's Impact on Discrete Geometry and Symmetry. // Senechal, Marjorie (Department of Mathematics, Smith College): Tilings, Lost and Found. // Sturmfels, Bernd (Departments of Mathematics, Statistics, and Computer Science, UC Berkeley): The Convex Hull of a Space Curve. // Wilson, Stephen (Department of Mathematics and Statistics, Northern Arizona University): MANIPLEXES. // Zaks, Joseph (Mathematics Department, University of Haifa, Israel): My Geometric results influenced by Victor Klee and by Branko Grunbaum. // Ziegler, Gunter M. (Institut fur Mathematik, TU Berlin, Germany): On Delaunay Polytopes and on Associahedra. //

Links:
the main web-page of the conference which contains much of the above information and the talk abstracts is https://sites.google.com/a/alaska.edu/kleegrunbaum/home ; see also http://ieonline.typepad.com/reviews/ for a report on the conference written by Joseph O'Rourke

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