MATH 249: SUGGESTIONS FOR FINAL PROJECTS

(1) Bruhat order of Coxeter groups and shellability:
Anders Bjorner, Michelle Wachs, Advances in Math., 43, 1982.

(2) Posets, regular CW complexes and Bruhat order:
Anders Bjorner, Posets, regular CW complexes and Bruhat order, European J. Combinatorics 5 (1984), 7–16.

(3) Two Poset Polytopes:
Richard Stanley, Discrete and Computational Geometry, 1986.

(4) Combinatorial geometries, convex polyhedra, and Schubert cells:
Israel Gelfand, Mark Goresky, Robert MacPherson, and Vera Serganova, Advances in Math 63 (1987).

(5) A Survey of Eulerian posets:
Richard Stanley, in Polytopes: abstract, convex, and computational, Kluwer Academic Publishers, 1994.

(6) A user's guide to discrete Morse theory:
Robin Forman, Seminaire Lotharingien de Combinatoire 48 (2002), Art. B48c.

(7) Subword complexes in Coxeter groups:
Allen Knutson and Ezra Miller, Advances in Math 184 (2004).

(8) Permutohedra, associahedra, and beyond:
Alex Postnikov, to appear in International Mathematics Research Notices,
http://front.math.ucdavis.edu/0507.5163.

(9) Regular cell complexes in total positivity:
Patricia Hersh, to appear in Inventiones, http://front.math.ucdavis.edu/0711.1348.

(10) Positroids and non-crossing partitions:
Federico Ardila, Felipe Rincon, Lauren Williams,
http://front.math.ucdavis.edu/1308.2698.

(11) Shelling totally nonnegative flag varieties:
Lauren Williams, Crelle's Journal, 2007.

(12) Arboreal singularities:
David Nadler, http://front.math.ucdavis.edu/1309.4122. (This is not a combinatorics paper but posets and regular cell complexes come up – concentrate on that part.)

(13) Tutte polynomials of matroids (find your favorite paper)

(14) Coxeter matroids (find your favorite reference)

(15) Something of your own choosing. (But talk to me about it in advance.)