**Math 890 – Algebra-Geometry-Combinatorics Seminar**

Federico Ardila, Matthias Beck, Joseph Gubeladze, Serkan Hosten

### Meeting times

Friday 1–3 p.m.

### Prerequisites

Linear Algebra (Math 325), Modern Algebra (Math 335).

Students who are taking Algebra II (Math 435) during Fall 2005 are encouraged to join, and all graduate students are welcome.

### Course Objectives

The main objective of the seminar is to introduce students to current research topics in Algebra, Geometry, and Combinatorics, relevant to the research interests of the organizers. This includes computational commutative algebra and algebraic geometry, discrete geometry, combinatorial number theory, toric varieties, and other closely related topics.

Invited guest speakers will give talks about their research interests, and these talks will be complemented by the organizers who will give introductory talks on research problems.

The students will not only hear about state-of-the-art research and interact with research mathematicians from around the globe visiting the Bay Area, they will also be actively involved in original research and seminar presentations. This research will be the starting point of a larger project, hopefully leading to masters theses and published work.

### Evaluation of Students

While the seminar is open to a broader audience, every enrolled student is expected to attend the seminar talks and choose a research problem to work on. The students will work on small original research projects, based on a topic that they pick in roughly the first third of the semester, under the guidance of one of the organizers. Every student will present a seminar talk and write a report on their research.

### Course Format

The seminar will meet once a week on Friday afternoons for two hours. One hour will be devoted to the seminar talk.

### Course Outline (tentative)

Guest speakers & introductory talks (11 weeks)
Student presentations (4 weeks)

The current Algebra-Geometry-Combinatorics Seminar has its webpage:
`http://math.sfsu.edu/beck/seminar.html`