JORGE URRUTIA, Instituto de Matemáticas, UNAM
On Quadrangulations of Point Sets

Let $P = \{p_1, \ldots, p_n\}$ be a point set in general position on the plane. A quadrangulation of P is a set $Q = \{Q_1, \ldots, Q_m\}$ of quadrilaterals (not necessarily convex) with disjoint interiors such that:

- the vertices of all Q_i are elements of P;
- no element of P lies in the interior of any S_i, $i = 1, \ldots, m$;
- $S_1 \cup \cdots \cup S_m = \mathrm{Conv}(P)$ where $\mathrm{Conv}(P)$ denotes the convex hull of P.

Q is called a *convex quadrangulation*of P when all of its elements are convex. In this talk we study several problems on convex and non-convex quadrangulations of point sets,

We also study quadrangulations of bicolored point sets, that is sets of points on the plane such that its elements are colored with two colors, say red and blue. The set of blue points will be denoted by $B = \{b_1, \ldots, b_r\}$, and the set of red points by $R = \{r_1, \ldots, r_s\}$; $r + s = n$, $r \leq s$. We will assume that $P = R \cup B$ is in general position. A bichromatic quadrangulation Q of P is a quadrangulation in which all the edges of the elements of Q join a blue and a red point. Some problems on quadrangulations of point sets colored with 3 colors will also be studied.