Erdős, Faudree, and Rousseau in 1992 showed that a graph on $n$ vertices and with at least $\left\lfloor \frac{n^2}{4} \right\rfloor + 1$ edges comprise at least $2\left\lfloor \frac{n}{2} \right\rfloor + 1$ edges on triangles and this result is sharp. They also considered a conjecture of Erdős that such a graph have at most $\frac{n^2}{36}$ non-pentagonal edges. This was mentioned in other paper of Erdős and also in Fan Chung’s problem book.

In this talk we give a graph of $\left\lfloor \frac{n^2}{4} \right\rfloor + 1$ edges with much more, namely $\frac{n^2}{8(2 + \sqrt{2})} + O(n)$ pentagonal edges, disproving the original conjecture. We also show that this coefficient is asymptotically the best possible. (Received September 15, 2014)