I have had the opportunity to mentor undergraduate summer research groups of 4-6 people for the past several summers under two grants. One of which is from MAA’s NREUP grant which supports the participation of mathematics undergraduates from underrepresented groups in research experiences to increase their interest in advanced degrees and careers in mathematics. The other is from NSF’s PRISM grant which targeted at entry level undergraduate students from all areas to encourage students to stay in or convert to STEM majors. In this talk, I will share my REU program structure (and the difference between the two programs) as well as challenges faced and lesson learned from these programs. (Received September 12, 2014)