

**Assignment 18**

**Due:** *In Lecture*, Wednesday, April 5

1. In Lab 5, you synthesized both P*n*BA and P(*n*BA-*co*-S) by ATRP. What percent polymer yield did you determine for these polymerizations? What effect did styrene have on your polymerization yield?
2. How did  $F_S$  in your P(*n*BA-*co*-S) product compare with  $f_S$  in your starting reaction? Based on the data posted to WebCT, how does your data compare with your classmates'? Do you recognize any trends?

3. Technically, the (free-radical) propagation mechanism in Lab 5 is the same as for the copolymers you prepared in Lab 2, and the relationship between  $f_S$  and  $F_S$  in your P(*n*BA-co-S) might likewise be governed by  $r_S$  and  $r_{nBA}$  for a free-radical polymerization. What are  $r_S$  and  $r_{nBA}$ ? Is the class' polymerization data consistent with these values?