Julius Ellrich:

Interactive effects of food supply and snail predation risk on barnacle survival and growth

This project aims to provide evidence for the role of predation risk by dogwinkles (*Nucella lapillus*) on barnacle (*Semibalanus balanoides*) larvae settlement and growth, distribution patterns of adult barnacles and whether the effects of predation risk depend on food supply (primary productivity). I will relate the effects of predation risk between larval and adult life stages to assess whether, barnacle population dynamics are affected by non-consumptive effects caused by the mere presence of predatory snails for different levels of primary productivity.

Barnacle larvae likely perceive risk cues from *N. lapillus*, which could adversely affect barnacle settlement and adult growth, as barnacles truncate ingestion when intimidated. Barnacles may trade-off food supply with predation risk, suggesting that effects of predator presence on barnacle settlement, growth of adults and ultimately on distribution patterns in the field, may depend on the level of food supply for barnacles. For this purpose manipulative field experiments will be conducted on two Nova Scotia shores differing in primary productivity. It's hypothesized that

1. Natural density and size of adult barnacles will be negatively correlated to *N. lapillus* density and that this negative relationship will be stronger on low-productivity than on high-productivity sites.
2. Barnacle settlement, recruit density and growth of adult barnacles will be lower in presence of *N. lapillus* than in its absence, with stronger effects occurring at low-primary productivity than at high-primary productivity sites.