Far-Red light can induce sex structure development in the liverwort *Marchantia inflexa* Nees et Mont. D. NICHOLAS McLETCHIE\* and MADDISON HATTON; Department of Biology, University of Kentucky, Lexington, KY 40506.

Plants use light to drive photosynthesis and light quality to perceive and respond to environmental conditions, but while light quality perception and responses are known for seed plants such responses remain little studied in other plant groups. In this study we used the liverwort *Marchantia inflexa* Nees et Mont., to test if red or far red light can cause the development of sex structures after such development was observed with supplemental incandescent light. Because development of these structures is staggered in the field, we tested if genotypes can differ in their time to sex structure development. Two males and two females representing the fastest and slowest individuals of each sex to develop sex structures were selected, grown in four light conditions (Greenhouse, and growth chambers dominated by florescent, red or far-red conditions), and surveyed over 40 days for sex structure development. The experiment was repeated once by changing the light conditions in each chamber. Sex structure development occurred only in the far-red treatment. The mean timing of sex expression differed among genotypes and ranged from 18 days (a male) to 28 days (a female). This reproductive response to far-red light suggests that phytochromes are involved in perceiving the light environment but this was not verified. Phytochromes have been linked to a plant’s ability to detect seasonal changes (photoperiodism). The staggering of sex expression across populations might be due to genetic differences.