Biology Seminar

Western
UNIVERSITY · CANADA

12:30 - 1:30 pm
Friday, November 2, 2018
BGS 0153

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When to Do It: selection on phenology through the general, social and internal environments

To be successful in a seasonal environment, organisms must time their life history transitions—going into reproductive mode, coming out of dormancy, *etc.*—to coincide with suitable conditions in the *general environment.* But in many cases, the best transition time depends on the *social environment;* for instance, the best time to enter reproductive mode could be when mates are most available. And finally, the best time to transition to the next life stage can depend on organismal condition, which can be thought of as the *internal environment.* To understand the structure of natural selection on life history transitions, these three types of environmental effects have to be disentangled. This is difficult because they are inevitably correlated to one another. For instance, if the third week of June is the best time for a plant to flower, is it because that is the date when pollinators are most abundant, or, is it because that is the date the plants reach a size that can best support seed production? The general and internal environments are correlated in time. My lab has used phenotypic manipulation experiments to study natural selection on germination and flowering times in Field Mustard, an annual, weedy plant. Findings indicate that internal environment always exerts selection on timing, but that in particular cases, the section exerted by the general and social environments can be stronger. And in particular, competitive social environments can have overwhelming impacts on the relationship of timing to fitness.

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