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Floral development in *Lepidium virginicum* L. (Brassicaceae) and *Tropaeolum majus* L. (Tropaeolaceae)

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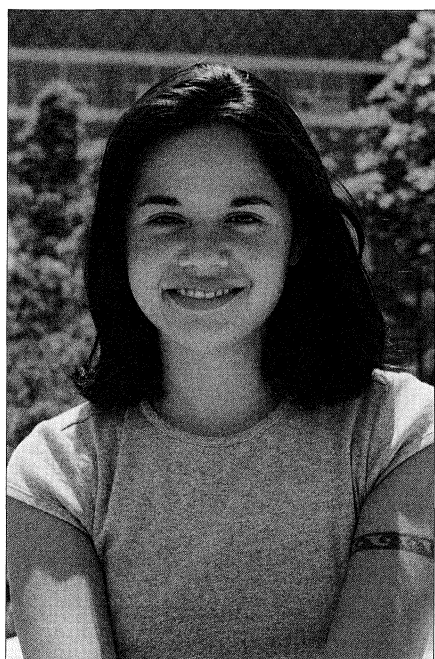
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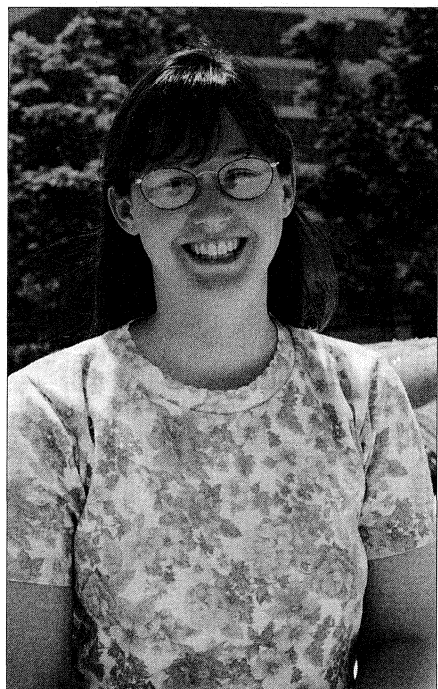
Floral development in *Lepidium virginicum* L. (Brassicaceae) and *Tropaeolum majus* L. (Tropaeolaceae)



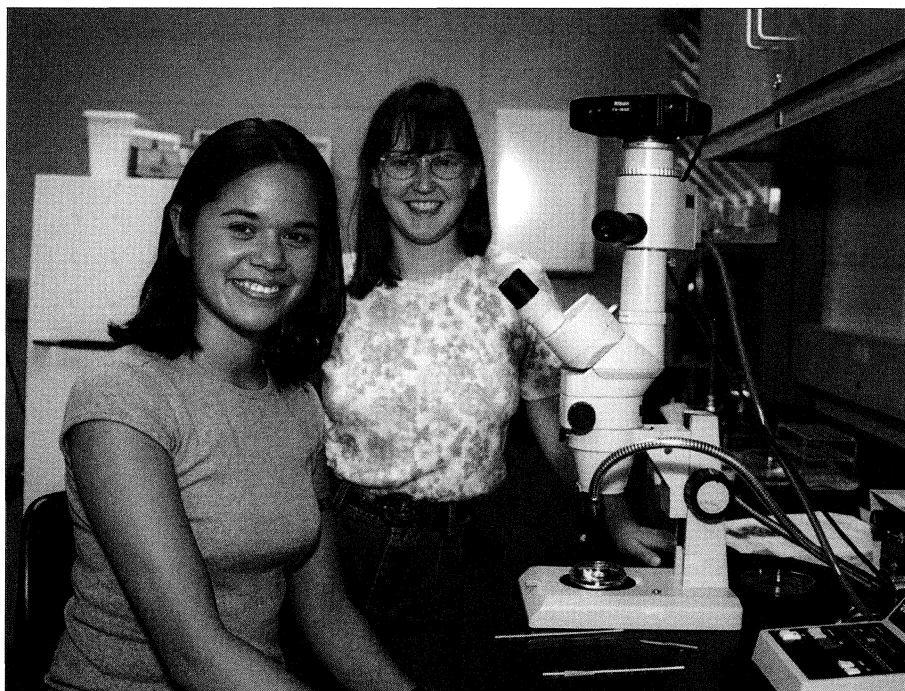
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ABSTRACT

We studied early stages of floral development in two members of the order Capparales, *Lepidium virginicum* (Poor-man's pepper) from the family Brassicaceae and *Tropaeolum majus* (Nasturtium) from the family Tropaeolaceae, as part of a larger project to understand the evolution of floral form and development in the order. In *L. virginicum*, the four sepal primordia arise first in a helical pattern, next the four petal primordia arise unidirectionally from the abaxial to the adaxial side alternate with the sepals. Then the two stamen primordia and the carpel primordium are initiated. The abaxial stamen is visible before the adaxial one. In *T. majus*, the five sepal primordia arise helically with the first sepal in a non-median position. After all of the sepal primordia are present the five petal and eight stamen primordia are initiated. Initiation in both whorls also appears to be helical. The petal primordia alternate with the sepals. The first five stamen primordia arise opposite the sepals and the last three stamen primordia are opposite three of the petals. The position of the stamens relative to the sepals and petals is somewhat obscured later in development by expansion of the flower receptacle. The pattern of initiation of the eight stamens in *T. majus* suggests that they could be derived from ten stamens in two whorls of five by suppression of two stamens in the inner whorl.



Katherine E. Kantz, Ph.D.
Faculty Mentor



Christine Gwinn and Katherine E. Kantz in the lab.