

Understanding the Behavior and Function of Plant Leaves to Increase Growth



Elizabeth Van Volkenburgh
Professor, Biology

CURRENT RESEARCH

Using novel experimental plant systems to identify the factors that affect the rate of leaf growth

Leaves are central to a plant's function and survival. Fundamental to all ecosystems, they act as a plant's food source, enabling it to absorb sunlight, make sugars, and carry water and nutrients through their veins. Understanding how leaves grow on a cellular level has very important implications in agricultural production. However, the process is complex and not widely understood. Dr. Elizabeth Van Volkenburgh, Professor in the Biology Department at University of Washington is exploring the physiological regulation of leaf growth to identify factors that drive or limit the rate at which they grow. Because leaves act as food that feed the plants we harvest, limits in their growth or performance can lead to a decrease in crop yield. Identifying how they tolerate environmental stressors will lead to the improvement of agricultural plant production for both breeders and farmers.

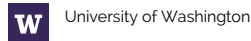
Understanding leaf growth provides a basic lens through which the health of any plant system can be studied. Dr. Van Volkenburgh and her team of graduate and undergraduate researchers, principal co-investigators, and an associated Lecturer collaborate globally with researchers and breeders from the International Center for Tropical Agriculture (CIAT), a Colombian bean breeding station. Together, they focus on understanding how light stimulates leaf growth, how droughts limit growth, the significance of leaf shape, and the way plants behave collectively. They've developed model experimental systems to look at the rate of leaf expansion, as well as the molecular physiology and behavior of both major crops, native plants, and beans.

Current research includes:

- Identifying How Beans Develop Tolerance...

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AFFILIATION



EDUCATION

- Ph.D. in Plant Physiology in Botany Department, 1980, University of Washington

RESEARCH AREAS

Environment, Agriculture, Ecology, Agriculture

FUNDING REQUEST

Your contributions will help support Dr. Van Volkenburgh's continued research in understanding leaf growth, behavior, and function. Costs include \$50-90K/year per team member, \$15K/mo for supplemental salaries, \$30K per lab instrument, \$5K/year for lab supplies, and \$2K/per person for travel costs. Support this novel research in leaf growth, function, and behavior, which promotes plant health and improves agricultural plant production; fund Dr. Van Volkenburgh.

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