Confronting Plant Blindness and Fear of Coding in Biology Undergraduate Students Through Authentic Research Experiences

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The term “plant blindness” describes the lack of students’ interest in working with plants. Most undergraduate students pursuing Biology degrees in small, predominantly teaching, liberal arts institutions are interested in health-related careers. They want to learn about human-oriented models and investigate problems related to human health. As this tendency is partially due to the inherent properties of the human brain, intentional efforts are needed to bring students to the world of plant research. In addition, students of many biology programs are poorly prepared to engage in computational biology projects and are afraid of coding and computational data analysis. Here, we present a series of different modules of authentic research experiences focused on investigating plant response to abiotic stress in maize seedlings. These multi-week modules, incorporating investigating gene expression, quantitative genetics, gene mapping, and phenotypic analysis, were implemented in various courses and were demonstrated to increase students’ awareness of and interest in plant research. This presentation will discuss the approaches to the successful implementation of these course-embedded research experiences, as well as barriers and challenges to sustaining them in the settings of primarily undergraduate institutions.