



Field Research in the Teaching of Undergraduate Soil Science

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Several studies have demonstrated that undergraduate students benefit from research experiences. Benefits of undergraduate research include 1) personal and intellectual development, 2) more and closer contact with faculty, 3) the use of active learning techniques, 4) creation of high expectations, 5) development of creative and problem-solving skills, 6) greater independence and intrinsic motivation to learn, and 7) exposure to practical skills. The scientific discipline also benefits, as studies have shown that undergraduates who engage in research experiences are more likely to remain science majors and finish their degree program (Lopatto, 2007). Research experiences come as close as possible to allowing undergraduates to experience what it is like to be an academic or research member of their profession working to advance their discipline. Soils form in the field, therefore, field experiences are very important in developing a complete and holistic understanding of soil science. Combining undergraduate research with field experiences can provide extremely beneficial outcomes to the undergraduate student, including increased understanding of and appreciation for detailed descriptions and data analysis as well as an enhanced ability to see how various parts of their undergraduate education come together to understand a complex problem. The experiences of the authors in working with undergraduate students on field-based research projects will be discussed, along with examples of some of the undergraduate research projects that have been undertaken. In addition, student impressions of their research experiences will be presented.

Reference

Lopatto, D. 2007. Undergraduate research experiences support science career decisions and active learning. *CBE—Life Sciences Education* 6:297–306.