



The Potential to use Publication of Undergraduate Research as a Teaching Tool

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Several studies crossing numerous disciplinary boundaries have demonstrated that undergraduate students benefit from research experiences. These benefits include personal and intellectual development, more and closer contact with faculty, the use of active learning techniques, the creation of high expectations, the development of creative and problem-solving skills, and the development of greater independence and intrinsic motivation to learn. The discipline also gains in that studies show undergraduates who engage in research experiences are more likely to remain science majors and finish their degree program. 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, therefore enhancing their professional socialization into their chosen field. If the goals achieved by undergraduate research include introducing these students to the advancement of their chosen field, it stands to reason the ultimate ending to this experience would be the publication of a peer-reviewed paper. While not all undergraduate projects will end with a product worthy of peer-reviewed publication, some definitely do, and the personal experience of the authors indicates that undergraduate students who achieve publication get great satisfaction and a sense of personal achievement from that publication. While a top-tier international journal probably isn't going to be the ultimate destination for many of these projects, there are several appropriate outlets. The SSSA journal *Soil Horizons* has published several undergraduate projects in recent years, and good undergraduate projects can often be published in state academy of science journals. Journals focused expressly on publishing undergraduate research include the *Journal of Undergraduate Research and Scholarly Excellence*, *Reinvention*, and the *American Journal of Undergraduate Research*. Case studies of students who have published undergraduate research will be discussed.