

## Undergraduate Research and Career Preparation

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Concordia's strategic plan emphasizes the importance of career preparation and has set the goal of establishing an integrative approach to career development. The college's proposed career initiative holds up the importance of experiential learning, including undergraduate research, as being important experiences to clarify career direction. Research has supported that undergraduate research (UR) can indeed be a significant factor in clarifying career goals. Most of the research on the value of UR in clarifying career goals has been done with STEM students and, as indicated by David Lopatto in *Science in Solution* (2009), "the relationship between undergraduate research and the STEM workforce is complex." In general, UR is not responsible for drawing students towards a career in the sciences; most students seeking out a UR experience in the sciences come to it with plans to pursue a STEM major. However, UR assists students in realizing what aspect of science they are interested in and whether research is the right career fit for them. UR has been shown to draw some students from a pre-med path to a research path and is also associated with greater persistence to graduation and greater pursuit of graduate education and recently, attention has been paid to the value of early UR experiences in providing clarification to students. Presumably, similar career path clarification is gained from UR in other areas of study.

Importantly, UR and other experiential learning experiences do more than allow students to clarify their career direction. For students in all disciplines, undergraduate research provides skill development that will serve the needs of employers and allow our students to be successful professionals. In "*It takes more than a major: Employer priorities for college learning and student success*," a survey by the Hart Research Associates (2013) completed on behalf of the Association of American Colleges and Universities, employers encourage colleges to emphasize the following skill development:

- Critical thinking and analytical reasoning
- Complex problem solving and analysis
- Written and oral communication
- The application of knowledge and skills in real-world settings
- The location, organization, and evaluation of information from multiple sources
- Innovation and creativity

Research has shown that these are skills developed as a result of UR experiences (Lopatto, 2009; Laursen, et al., 2010; Erlod, et al., 2010).

Survey respondents (Hart Research Associates, 2013) were also given ten educational practices and asked to rate the ones with the most potential to improve students' education and prepare them for the workforce. At the top of the list were "develop research questions in their field/evidence-based analyses" and "complete a project prior to graduation that demonstrates their acquired knowledge and skills." Also high on the list was "develop the skills to conduct research collaboratively." Employers clearly understand the value of UR in developing skills for future employment. Concordia students who do UR will develop skills sought after by employers and they will boast a resume demonstrating experience with a desired educational practice.

Other outcomes of UR that prepare students for success include personal development gains such as: growth in self-confidence, independence (and thinking independently), tolerance for obstacles and motivation to learn (Lopatto, 2004; Laursen, et al., 2010). UR has been shown to develop communication skills (both orally and written) and to enhance creativity (Lopatto, 2009). Employers indicate that communication and innovation are two of the most desired traits of college-educated employees and on this front UR will serve our students well. Concordia's own UR assessment has indicated that students who engage in a significant, intensive research experience report some of these same gains such as development of patience, flexibility, independence, and an understanding of the importance of team work.

Undergraduate research is career preparation for Concordia students. It helps students clarify their career direction and it also provides them the opportunity to acquire skills valued by employers. A liberal arts institution with a strategic focus on career development would be well-served to continue developing and promoting undergraduate research opportunities to its students.