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Quantitative Literacy Across the Curriculum in a Liberal Arts Setting

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ABSTRACT

Mathematical Sciences (21)

The goal of the project is to incorporate Quantitative Literacy (QL) learning materials and teaching strategies in courses throughout the curriculum. It is improving the ability of students at the college to formulate, evaluate, and express conclusions and inferences from quantitative information using
analytical arguments, reasoning, and fundamental mathematical skills. Faculty expertise with QL educational innovations is being developed through two workshops (involving nearly 50% of the faculty) and the participation of national QL experts. A project evaluator is working with the college to evaluate student learning and the implementation of faculty innovations to ensure quality, relevance and impact.

Intellectual Merit: QL offers a quantitative habit of mind that can be applied in nearly any discipline and responds to a lack of relevance that students often see in traditional mathematics courses. The project has a clear student focus with opportunities for students to advance their QL skills in newly designed mathematics courses, liberal education courses, and courses for majors. Expected measurable outcomes include improvements in attitudes and QL skills for both faculty and students. Permanent institutional reform of the project ensures long term impact.

Broader Impact: College students are facing an increasingly complex global society, and they need to apply quantitative knowledge and reasoning, yet many graduates seem poorly prepared to do so. This initiative promotes an effective QL program that prepares college graduates for their professional and personal lives and responds to a national call for an increased understanding of mathematics as the language of science. Faculty from all disciplines are engaged in revising and designing courses with QL content and exploring ways to integrate QL in interdisciplinary undergraduate research projects and digital-media learning portfolios. Project workshops involve faculty from other institutions, providing opportunity for QL education community-building and the dissemination of project results. It also serves as a model for similar institutions.

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