



## **The Matrix: Mathematic Modeling for the Liberal Arts**

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There is need now for a radical shift in the purpose as well as the content of a Liberal Arts education. Students must do more than become knowledgeable about the work done in their field; they must enlarge the impact their knowledge and their field can have on solving problems. Our world community will need insightful analysis of challenges, requiring, as Steve Jobs noted, that we “think different.”

Mathematics, the language in which science came to exist, will now drive the design and process of problem solving, in every field.

Math now must become a laboratory discipline, brought into every student’s undergraduate program through the astounding power of technology to reveal pattern and change of all kinds. Liberal Arts students developing mathematic perspective and analytic modeling skills will be the innovators in their fields. Graphic representation for study and research must be studied as a basic tenet of a Liberal Arts undergraduate experience.

A proposed course in modeling should include a review of historic problems investigated and solved through graphing, practice in translation between literal and graphic representation, and an active-learning research experience in organizing and studying a current problem or situation in a student’s chosen field.

Liberal Arts is traditionally the background of our future leaders. University programs need to be refocused and strengthened mathematically to prepare citizens to help solve public issues that require mathematic understanding, in order to more responsibly participate in keeping the democratic process alive.