1003-97-1246   **Jerry M. Lodder*** (`jlodder@nmsu.edu`), Dept. of Mathematics, University of Southern California, 3620 S. Vermont Ave., KAP 108, Los Angeles, CA 90089. *Curriculum Development Through Primary Historical Sources.* Preliminary report.

While research and teaching are viewed as distinct activities, both have at their root a common source, namely the historical origin of a particular branch of mathematics. What better way to teach a subject than through the motivating problems and original solutions that inaugurated the field of specialization. What better way to understand the direction of research than through a careful study of the problems which found resolution in current mathematical formalisms. In this talk, we examine how primary historical source material can be used to introduce key topics for an undergraduate course in discrete mathematics, particularly one which draws a large number of computer science majors. For example, Alan Turing's 1936 paper on Hilbert's decision problem provides an excellent, readable account of what would become called a Turing machine, a model for the modern programmable computer. Gottfried Wilhelm Leibniz's 1703 publication on binary arithmetic outlines the easy of calculation afforded by the binary system, while John von Neumann's 1945 white paper on the EDVAC cites nearly identical advantages of the binary system for use with electronic digital computers. All of these sources have been used as classroom projects in a first course in finite mathematics. (Received October 04, 2004)