

1106-01-1459      **Stephanie A Dick\*** ([sadick@fas.harvard.edu](mailto:sadick@fas.harvard.edu)), Stephanie Dick, 8 Chauncy Street, Apartment 23, Cambridge, MA 02138. *"Constructing a Mathematical Laboratory": An Early History of Computer Algebra Systems.*

This talk explores how new ways of doing mathematics were made possible by the advent of modern digital computing. Many computer-based techniques now exist for visualizing, exploring, and sometimes solving mathematical problems and they yield new perspectives and practices for mathematical research. Among them are programs like Matlab, Maxima, and Sage that offer users environments for exploring symbolic and algebraic mathematical systems. Programs like these were made possible at a crucial moment in the history of American computing. The first American computers were made to calculate - they were developed to perform numerical calculations faster and more efficiently than their human and machine predecessors. Many early computing practitioners believed, however, that the true power of computation would instead come from the manipulation of symbolic information by computers. This talk will explore how this changing conception of computers led to the development of a new set of mathematical tools by focusing on the history of MACSYMA, among the earliest large-scale symbolic manipulation systems developed at MIT beginning in the mid 1960s. (Received September 13, 2014)