

1135-C1-1698      **Robert A Beezer\*** ([beezer@ups.edu](mailto:beezer@ups.edu)). *Teaching introductory linear algebra with open software and textbooks.*

Sage is open source software for mathematics and has research-level capabilities for both exact and numerical linear algebra, over a wide variety of fields and rings. It is also intuitive enough that a beginning student of linear algebra can use it profitably. When integrated into an openly licensed online textbook, it becomes a powerful tool for exploring basic concepts, while also gaining competency with a useful tool for computational approaches to many different areas of mathematics.

We will describe the use of Sage in all aspects of an introductory linear algebra class: integration with the online textbook, classroom presentations, student work, and examinations. This approach has been developed through ten iterations of an introductory course. (Received September 24, 2017)