1067-L1-1877   **Jason Grout*** (`jason.grout@drake.edu`), Math & Computer Science Dept., Drake University, 2507 University Ave, Des Moines, IA 50311. *Eigenvalues first? Teaching linear algebra with computation, then application, then theory.* Preliminary report.

I will describe an experience teaching sophomore-level linear algebra in which rref, determinants, coordinates, eigenvalues/eigenvectors, and other computations were introduced in the first few weeks, followed by selected real-world applications of linear algebra. After students had practiced many fundamental computations in the course and had seen motivating examples of linear algebra, we delved deeper into theory (vector spaces, etc.). Goals for this approach included (1) students developing intuition from concrete computation before a focus on theory and (2) repetition and emphasis of fundamental concepts (e.g., rref, determinants, coordinates, eigenvalues/eigenvectors, etc.) throughout the entire course.

We followed a revised version of Ben Woodruff's free open-source textbook (`http://artsci.drake.edu/grout/doku.php/books#linear_algebra`, licensed under the Creative Commons CC-by-sa license). We also used Sage (`http://sagemath.org`) for computations. (Received September 22, 2010)

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