

# Sage and R: Using R via the Sage notebook

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This talk will briefly introduce Sage, and demonstrate the basics of using R through the Sage notebook user interface. We also aim to provide a starting point for deep and fruitful interactions between these two GPL-licensed programs, both of which have extensive research and educational communities.

Sage is free open-source mathematics software. It includes a huge amount of new code, as well as interfaces to other mature, high-quality open-source packages. R is one of the most well-known of these components, and yet one that is currently underutilized by most Sage users. One goal of this presentation is to change that by increasing the visibility of R to the Sage community.

However, Sage also can contribute to using R, via its ‘notebook’ graphical user interface. On any web browser, one can use the full power of Sage - and hence R - via input and output cells, as well as view graphics, create interactive mathlets, and do WYSIWYG text editing and L<sup>A</sup>T<sub>E</sub>X markup. This is trivial to do if one has a local installation of Sage, but can also be done remotely; since there are a number of free public Sage servers, and it is easy to host one, collaboration and pedagogy using R can be greatly enhanced. Hence, our other goal is to increase the visibility of Sage to the R community, particularly in helping Sage developers better support the most common potential uses of R via the notebook.

## References

William Stein, et al. (2010). Sage: Open Source Mathematics Software,  
<http://www.sagemath.org/>.