

What this is

The Innovative Instructor is an article series (<https://cer.jhu.edu/ii>) and a blog (<http://ii.library.jhu.edu>) related to teaching excellence at Johns Hopkins

Article categories

Best Practice

How to use technologies and apply innovative instructional methods

Pedagogy

Hopkins professors share successful strategies for teaching excellence

Technology

Information about emerging technologies, who is using them, and why you should know

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<https://cer.jhu.edu/ii>
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About the CER

The Center for Educational Resources partners with faculty, postdocs, and graduate students to extend instructional impact by connecting innovative teaching strategies and instructional technologies

Center for
**Educational
Resources**

Reveal

Reid Sczerba, Multimedia Developer, CER

What it is

Reveal is a web application for annotating images with multimedia content. Using Reveal, you can create a website where highlighted areas, called hotspots or annotations, placed on an image link to other pages with images, audio, and/or video resources. Because the application allows you to build a hierarchical website, the individual pages created can be annotated further with hotspots that link to 'child pages', allowing you to express another level of information. For example, a map of the United States could have hotspots that provide links to pages of regional maps, which in turn may contain their own hotspots. The application is particularly useful for expressing visual relationships and spatial context.

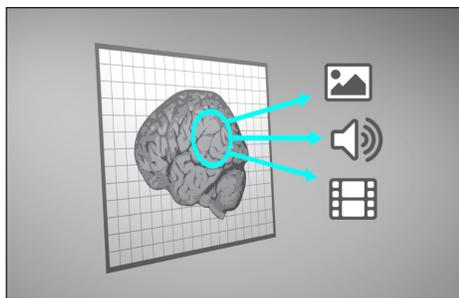


Illustration of Reveal's functionality

Who produced it

Reveal was developed at the Center for Educational Resources (CER) by a small group of dedicated undergraduate students from the departments of Computer Science, Computer Engineering, and Applied Math and Statistics, working with CER staff. An earlier version of the application, called the Interactive Map Tool, was built using Flash (a proprietary application for delivering rich media content on the web). As web standards evolved, expectations as to how content should be delivered online changed. Hence, Reveal was written using HTML5 and Javascript to improve access to mobile devices and browsers without the need for 3rd party plugins.



Why it was made

The application was originally developed for a general biology course to facilitate a collaborative digital field assignment for small teams of students in a large lecture class. The interactive environment used a map of the Johns Hopkins Homewood campus divided into approximately 60 mini-environments – called biomes – to which the teams of students were assigned for the academic year. The groups received assignments biweekly that required them to conduct field observations and collect data from their biome. They then entered that data through the application so that they could conduct analyses and make comparisons to other student groups' biomes. For example, students would be asked to identify the amount and type of lichen that grows in their biome and upload pie charts representing their biome's percentages of lichen types and then place them over their region on the campus map. After the data collection was complete, students could see which lichen type was more susceptible to the harsher conditions found nearer to the streets.

Why it matters

Reveal offers a more streamlined, intuitive interface for creating image annotations. No web development knowledge is necessary. Faculty seeking to assign engaging and creative course projects will find that Reveal is an ideal platform for students to explore visual context and spatial relationships.

When projects require considerations of intellectual property rights, Reveal offers a solution where access can be restricted. Moreover, Reveal's server is housed and maintained by Johns Hopkins, not at a 3rd party company like Google or Apple that may have confusing or compromising terms of service agreements.

Who's using it

Since its first use in biology, other courses have benefited from using the application:

- A Neuroscience course developed an online study guide that mapped out the anatomical components of the brain and their functions.
- Sociology courses have used it to map the location of public murals painted by local artists in Baltimore and to document the varied cultures of Baltimore's neighborhoods.
- Students in a History of Science and Technology course used the application to design and curate a virtual museum on a topic of their choice. Another course used historical maps of Washington D.C. to illustrate the importance of the culture of the sciences as the city developed, focusing on scientific institutions.
- A Museums and Society course developed 15 museum case studies to explore the history of exhibition design. Students were offered the opportunity to use the application for a final project where they created their own case studies.

How it can be used

An instructor can create a Reveal site for students to view visual and/or spatial relationships or assign students to develop content within the course site or their own sites. As mentioned in the example of the biology course, there is an assessment feature that allows an instructor to assess student analyses of content within the site. Students can be graded on their projects, work collaboratively in groups within the tool, and view and compare content their peers have created.

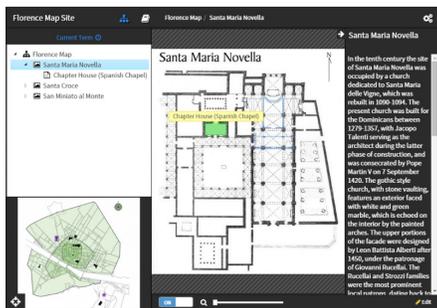
All content uploaded to Reveal can be restricted to address fair use and intellectual property concerns. As an added benefit, all image, audio, and video content is converted to the proper format upon upload so that users don't have to worry about managing file types and formats.

Where it is going

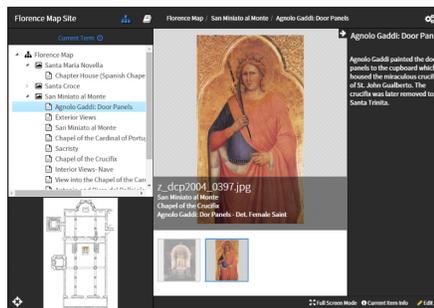
Recently the CER has been considering releasing the code for Reveal as an open source project. This would allow others to develop additional tools and share them across a development community. Possible directions forward include categorical tagging of content in a site, text and icon overlays on an image, and the development of a mobile app. If you are interested in the prospect of Reveal being released as an open source project, contact Reid Sczerba at reid@jhu.edu.

Other Thoughts

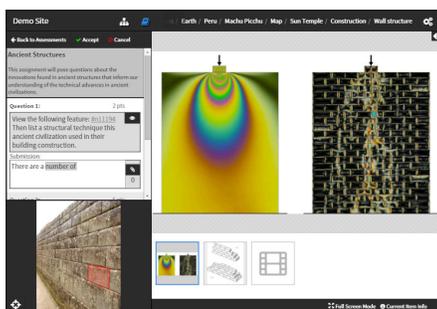
Reveal, as a hosted service, is available to Hopkins faculty who teach in the Whiting School of Engineering and the Krieger School of Arts & Sciences on the Homewood campus. Although any Hopkins division can inquire about alternatives to the hosted service. To request a site or for more information, contact reid@jhu.edu.



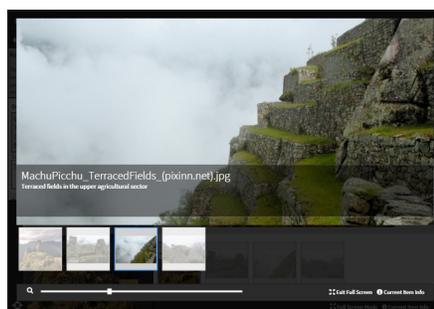
Example of navigation interface



Example of image display



Example assessment functionality



Example of gallery mode

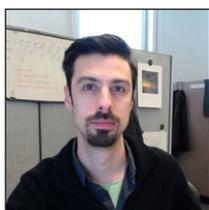
Additional Resources

- Reveal info page: <http://www.cer.jhu.edu/reveal>

Author's Background

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Multimedia Developer, Center for Educational Resources



A staff member at the Center for Educational Resources, Reid provides training on a variety of programs, aids in educational resources development, and shares expertise on information and graphic design with faculty at the Homewood campus. He holds a BFA in Illustration and a MA in Digital Arts from Maryland Institute College of Art.