

Compiling Web-Based Topical Pages for Teaching Geoscience With Visualizations

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Why Topical Pages?

The effective use of visualizations is one of the most important aspects of teaching geoscience. Today, there is a rich array of visualizations available on-line that can be integrated into lectures, class activities, and lab exercises. However, when a teacher conducts a web-based search on a topic, the search result is often overload of material with little selectivity. At the Science Education Resource Center (SERC) located at Carleton College, we have begun to address this problem within the larger context of a NAGT "On the Cutting Edge" workshop. Entitled "Teaching Geoscience with Visualizations" this workshop met at Carleton College in February 2004. The workshop website is accessed at <http://serc.carleton.edu/NAGTWorkshops/visualization/index.html> In cooperation with participants of the workshop, we are growing a number of different types of on-line collections, including topical collections. These "Topical Pages" are collections of web-based visualizations, suitable for use in a class or lab, which are grouped together based on a specific geoscience topic.

An important aspect of these topical collections is the effort given to making them:

- 1) *integrated from subtopic to subtopic*
- 2) *a selective gathering of effective visualizations*
- 3) *representative of the diversity of material available on each topic*

The topical page collections which we have created at SERC are more than just a gathering of related visualizations. Each entry includes a brief, instructive caption describing the nature of the visualizations contained and the specific ideas that are graphically represented by the visualization. In addition, most collections contain links not only to the website source of the visualizations but also to the website of the creator of the visualization. The number and breadth of topical pages at the "Teaching with Visualizations" website continues to grow. Initial collections are available on topics such as [Plate Tectonic Movements](#), [Tides, Weather and Climate](#), [Sequence Stratigraphy](#), [Isostasy and Gravity](#), [Paleoclimate](#), [Sedimentation Models](#), [River Systems](#), [Radioactive Decay and Absolute Age Determinations](#), [Mountain Uplift and Erosion](#), and [Turbidites](#).

Each Topical Page begins with an explanation of the range of visualizations contained in that collection.

[River Systems: Process and Form](#)

Compiled by [Jeff Crabaugh](#) at [Carleton College](#) and the [University of Wyoming](#)

This section provides access to a number of visualizations and supporting material that can be used effectively to teach students about physical processes acting in rivers and their floodplains. Visualizations include simple animations, visual output from numerical models, as well as numerous static illustrations and photos.

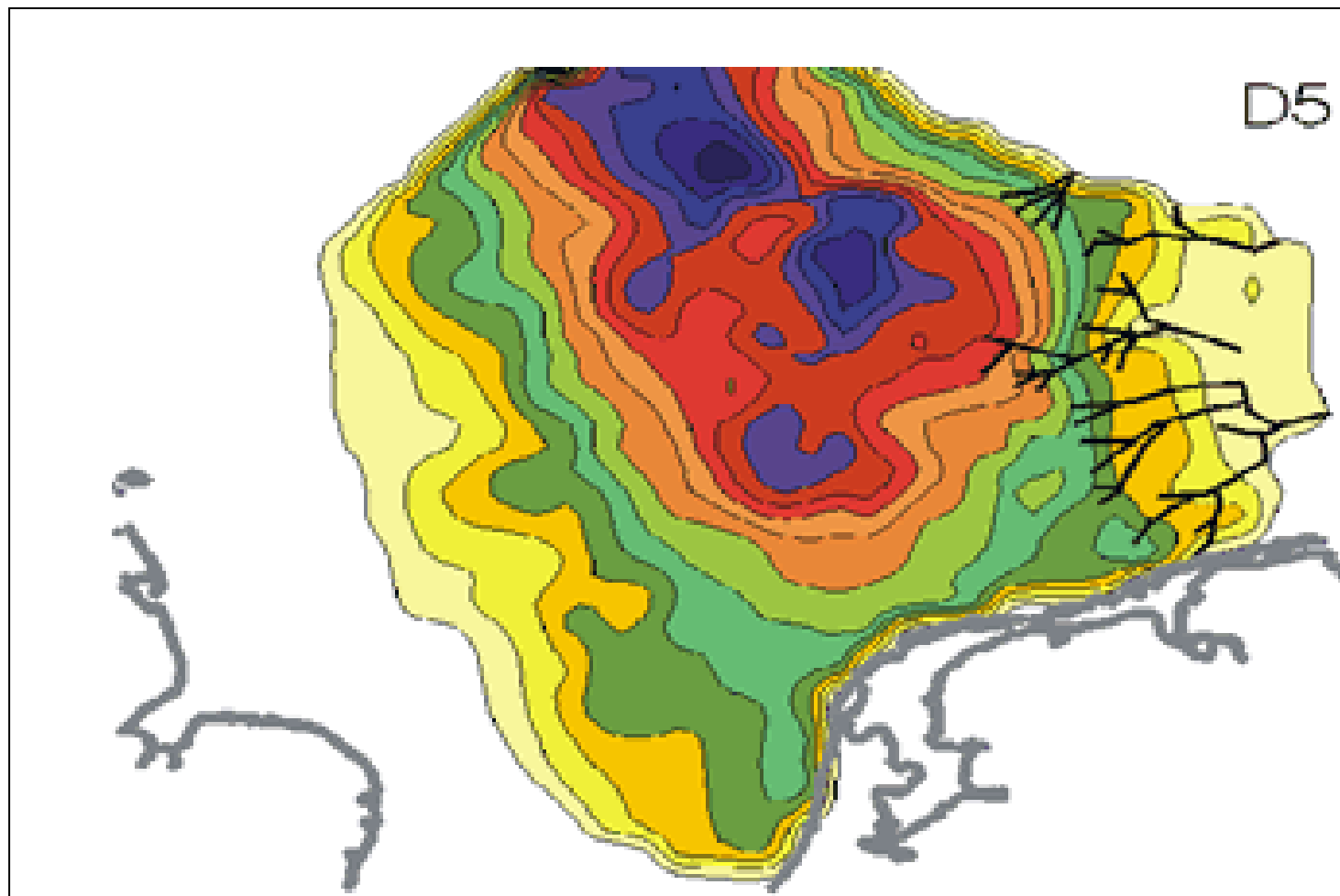


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[Braided River Videos: In Nature and Lab](#)

(more info) These videos provide a dynamic view of processes in braided rivers, and are part of the large collection of sedimentation videos archived and made available at the website of Paul Heller (University of Wyoming). To access each video: follow main link above, scroll down and click on "Gravelly Braided Stream... (Heller)", "Experimental Braided Stream (Paola)", "Braided Stream Bars at Loup River (Mohrig)", or "Platte River Sedimentation (Heller)".

Many collections contain links not only to the website source of the visualizations...



[River Delta Evolution over Geologic Time: Animations of the 'Eridanos Delta'](#)

by Irina Overeem

...but also to the website of the creator of the visualization.

Irina Overeem
Institute of Arctic and Alpine Research
University of Colorado



We encourage the community to submit additional topics for collections, specific visualizations for inclusion within the collections, and to evaluate the collections using the forms found at the "Teaching with Visualizations" website.

<http://serc.carleton.edu/NAGTWorkshops/visualization/index.html>