

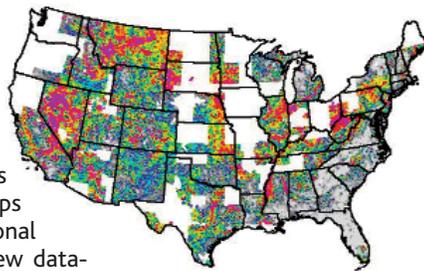
## DATABASE

### Scanning the Sediments

Whether you want to know phosphorus concentrations in east Texas streams or sodium levels in swamps near Miami, check out the National Geochemical Survey, a massive new database from the U.S. Geological Survey (USGS). The collection houses measurements of more than 60 elements—including arsenic, aluminum, lead, titanium, and phosphorus—at sites around the country. Such data can help everyone from geologists hunting for mineral deposits, to environmental scientists looking at pollution from farms and sewage plants that spurs algal blooms.

The database, which will eventually hold at least one sample for every 289 square kilometers (an area about two-thirds the size of Washington, D.C.), is about 70% complete. Most of the data come from streambed sediments, which can reflect even lower levels in soils because they receive runoff from a wide area. A set of maps highlights regional and national trends. This image (above), for example, shows levels across the United States of arsenic, a naturally occurring carcinogen that can taint drinking water. (Pink indicates the highest values, gray the lowest.) You can also obtain county averages or download figures for each sampling site. USGS plans to complete the survey by 2006.

[tin.er.usgs.gov/geochem/doc/home.htm](http://tin.er.usgs.gov/geochem/doc/home.htm)



## DATABASE

### Genetics Infiltrates the Pharmacy

For most patients, the drug codeine soothes the intense pain of injuries or surgery, but some people get no relief and others develop dangerous side effects such as difficulty breathing. These disparate outcomes stem from slight differences in the gene for the liver enzyme CYP2D6, which transforms codeine into morphine.

Researchers studying how genes dictate our response to particular drugs will find a trove of information at PharmGKB, a database built by Stanford University as part of a research consortium. You can look up particular genes that influence how well a drug works—the list includes more than 1300 so far—or track down drugs and diseases for which genetics make a difference. Stored here are findings from the literature and experimental results submitted by scientists, such as a study that linked side effects from a cancer drug to different versions of a metabolic enzyme. Because the site contains measurements for individual patients, users must submit their credentials and agree to confidentiality restrictions before they can search the full database.

[www.pharmgkb.org](http://www.pharmgkb.org)

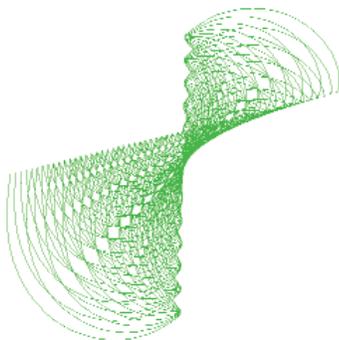
## RESOURCES

### Formula and Function

Need the formula for the modified Bessel function of the first kind or the equations for the Clebsch-Gordan coefficient? Forget those dog-eared handbooks and dig into this free storehouse of more than 87,000 formulas used by physicists, mathematicians, computer scientists, and engineers. The compilation from Wolfram Research of Champaign, Illinois, maker of the software package *Mathematica*, also features more than 10,000 graphs and animations of the functions. (Left, pedal curves using the square-root function.) You can download the formulas in formats that plug directly into *Mathematica* or other programs. The site currently lists only the bare equations, but

co-creator Michael Trott says that his group plans to make the collection more welcoming by adding background information about their derivation and how they got their names.

[functions.wolfram.com](http://functions.wolfram.com)



## IMAGES

### Moon Shots

With the White House floating a plan to send humans back to the moon, our nearest neighbor is sharing the limelight with a plucky robot trundling across the martian surface. Just in time, a former NASA scientist and an amateur astronomer have launched the Lunar Photo of the Day to draw attention to what they describe as "the brightest and most fascinating object in the night sky." Like similar sites that post astronomical or earth science photos (*Science*, 29 June 2001, p. 2403), the project provides a striking image each day, along with a caption and links to related articles and Web sites. Since the site rose on 1 January, it has included shots of the whole moon and explored particular features, such as the Straight Wall, a 120-kilometer-long fault. Above, in 4 January's image, a full moon climbs over Sonoma Valley, California.

[www.ipod.org](http://www.ipod.org)

Send site suggestions to [netwatch@aaas.org](mailto:netwatch@aaas.org). Archive: [www.sciencemag.org/netwatch](http://www.sciencemag.org/netwatch)

## DATABASE: Genetics Infiltrates the Pharmacy

*Science* **303** (5657), 443.  
DOI: 10.1126/science.303.5657.443c

ARTICLE TOOLS	<a href="http://science.sciencemag.org/content/303/5657/443.3">http://science.sciencemag.org/content/303/5657/443.3</a>
RELATED CONTENT	<a href="file:/content/sci/303/5657/netwatch.full">file:/content/sci/303/5657/netwatch.full</a>
PERMISSIONS	<a href="http://www.sciencemag.org/help/reprints-and-permissions">http://www.sciencemag.org/help/reprints-and-permissions</a>

Use of this article is subject to the [Terms of Service](#)