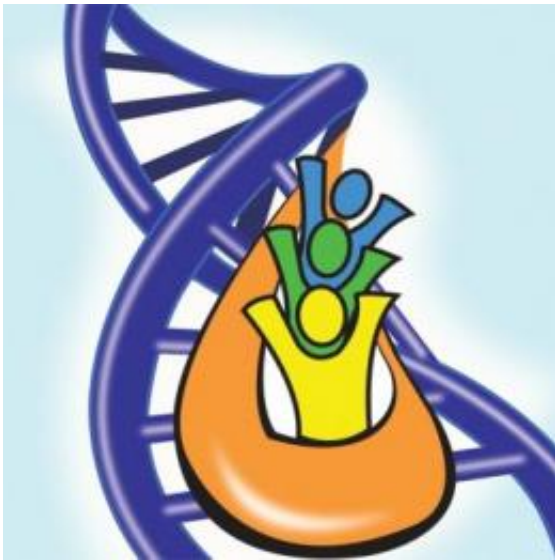


The human genome -- now on an iPad near you

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This logo for the Genome Wowser application was designed by the Center for Biomedical Informatics at CHOP. Credit: The Children's Hospital of Philadelphia

Navigating the human genome with software that you can view on an iPad sounds pretty impressive, until perhaps you reflect that nature has already encoded trillions of copies of this in your chromosomes. Then again, printing that data using ink and paper would produce a mind-staggering pile of pages—so viewing it on an iPad may be impressive after all.

Now the Center for Biomedical Informatics (CBMi) at The Children's Hospital of Philadelphia has created [Genome](#) Wowser, an [app](#) for exploring genomic information that is convenient, intuitive and highly mobile. Anyone with an [iPad](#) can download the app for free from the iTunes App StoreSM on the internet. Using Genome Wowser, a researcher can traverse the [human genome](#) just like planning a travel route on Google Maps.

A common use for the tool is to enter the name of a gene in Wowser's search box. The app finds the gene on one of the 23 human [chromosomes](#), displaying an interactive image of its precise location among the genome's 3 billion base pairs.

Also included are annotations contributed by researchers—notes about each gene's known or suspected biological functions, and about identified mutations and variants of the gene. Users can find information about neighboring genes or about epigenetics—how a gene's functions are modified when chemicals attach or separate from exposed sections of DNA. Touching the screen (pinching and spreading) allows a user to zoom in or out of the chromosome region.

Genome Wowser's name plays on the name of the data source that it emulates—the venerable UCSC Genome Browser, a website established in 2000 at the University of California Santa Cruz that serves as a popular worldwide data repository and genome exploration tool for human genome data. This information is constantly being updated as scientists uncover new gene data.

"We feel that Genome Wowser provides immediacy to the human genome," said Peter White, Ph.D., director of CBMi. "With this app, researchers can now access genomic data from anywhere with minimal effort, and they can immediately explore the genome visually by using the intuitive screen touches and gestures that have made the iPad

platform so powerful," he added.

Genome Wowser supports viewing and querying of multiple types of genomic data, so that users can select the types of information that interest them and view them concurrently in a stacked display for a selected region. In addition to text-based and graphical search options, the app provides zooming capabilities for its genome graphics, and drag-and-swipe navigation to move seamlessly across a chromosome.

Perhaps most importantly, Genome Wowser allows convenient portability of genomic data. "With this app, I can hear about an interesting disease gene at a seminar and see its genomic and functional contexts in a few screen touches, including epigenetic and variation profiles, neighboring genes, and other critical associations you can't determine from a simple web search," said White. "Then, I can walk over to a colleague and share it with them, all in a few seconds."

Upcoming versions of the app will provide access to genome sequences of over three dozen non-human species, including dogs, cats, mice, chimpanzees, elephants, and 11 species of fruit fly, plus further improvements in the touch interface.

More information: To download the Genome Wowser free of charge, visit the app's iTunes page at [itunes.apple.com/us/app/genome ... ser/id437044318?mt=8](https://itunes.apple.com/us/app/genome-wowser/id437044318?mt=8) or search for "Genome Wowser" in the iTunes store.

Provided by Children's Hospital of Philadelphia

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