

► a protein or any other biological entity — must be considered noteworthy by the Wikipedia community. Important data, such as protein crystal structures and genetic variants, do not always qualify, says Su.

The rub is that many bio-wikis not housed within Wikipedia struggle to attract readers and editors. But Alexander Pico, a bioinformatician at the Gladstone Institute of Cardiovascular Disease in San Francisco, California, thinks that these problems will fix themselves. “The vision going forward is that more and more scientists will be involved in the curation and consumption of data and they won’t need to accidentally stumble on it through Wikipedia,” he argues. His team’s WikiPathways site, which characterizes and visualizes biological pathways and is independent of Wikipedia, thrives because the systems biologists it attracts are already avid consumers of other people’s data and therefore see the benefits of a wiki, says Pico.

One challenge to bio-wikis that will be addressed at the Naples meeting is their text-based default layout, says Su. Written entries devoted to individual genes and proteins fit well within Wikipedia. But the format is a poor match to the highly structured, searchable data

sets favoured by computational biologists, which include the precise relationships between genes, proteins and other factors. A number of bio-wikis, including Su’s Gene Wiki, are adopting a software package called Semantic MediaWiki. This will bring them closer to working like true databases: for instance, the software could allow scientists to search for all the proteins phosphorylated by a specific kinase enzyme expressed in a particular tissue, rather than having to look up each interaction individually.

Despite such innovations, bio-wikis might not truly take off until scientists can get career-advancing credit for contributing to them.

## THE BIO-WIKI BOOM

Collaboratively edited biological databases help the community keep up with a flood of information.

Wiki	Topic	URL	Pages
EcoliWiki	Genes and proteins in <i>Escherichia coli</i>	ecoliwiki.net	63,784
PDBWiki	Protein structures	pdwiki.org	64,071
Wikigenes	Genes, proteins and biochemicals	www.wikigenes.org	123,332
Rfam wiki	RNA families	en.wikipedia.org/wiki/User:Ppgardne/Rfam10.0	824
Gene Wiki	Genes	en.wikipedia.org/wiki/Portal:Gene_Wiki	10,118

“Editing your wiki is not going to get you your grant, it’s not going to get you promoted,” says Jim Hu, a molecular biologist at Texas A&M University in College Station and one of the founders of EcoliWiki, a repository of information about the model bacterium *Escherichia coli*. One database trying to solve the attribution problem is Wikigenes, a site devoted to annotating 120,000 genes and other biomedical concepts, which meticulously records and displays the individual contributions of its 1,800 active editors.

Persuading funding agencies and tenure committees to take those contributions seriously would mark a major milestone for bio-wikis. Until then, says Bolser, “it’s not clear to scientists why they should spend time editing a wiki article if it just gets them kudos from a few geeks on Wikipedia”. ■

### CORRECTION

The Editorial ‘A painful remedy’ (*Nature* **468**, 6; 2010) misspelt the name of physicist Jan Hendrik Schön as ‘Hendrick’ and incorrectly gave his nationality as Austrian. He was born in Germany.