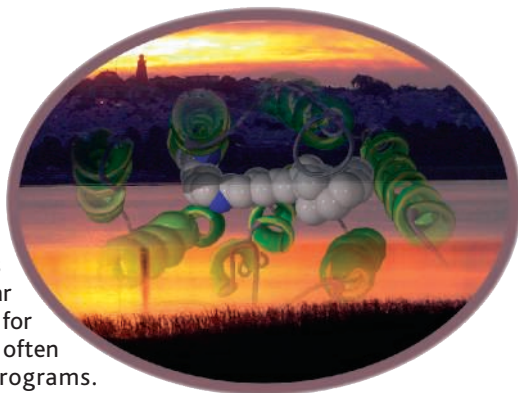


EDUCATION

Structural Biology Starter Kit

So-called BLAST searches and fancy 3D molecular graphics may be a snap for veterans, but beginners often need help with the programs. Students and teachers can beef up their structural biology skills at The Molecular Level, a primer from chemist Gale Rhodes of the University of Southern Maine, Portland. Users can bone up on protein structure while learning to use the molecular modeling software DeepView. Another tutorial introduces 10 bioinformatics staples, including the sequence searcher BLAST and the protein analysis tool kit ExpASY. The site offers practice problems, and for the forgetful, there's an organic chemistry refresher.

www.usm.maine.edu/~rhodes/index.html



RESOURCES

The Numerical Cell

Looking for a mathematical model of cellular activities, or have you built one you'd like to share? Drop by the new clearinghouse BioModels from a group of organizations including the European Bioinformatics Institute and the SBML Team, an international consortium developing a computer language for describing cell systems. The site stows 20 published models that simulate everything from the conduction of impulses in a neuron to the sugarmaking reactions of photosynthesis. Visitors can download the models in SBML, which is compatible with a host of cell-simulation programs. Annotations spell out the molecules involved, the reactions they participate in, and their cellular locations. Links to databases supply more information about the molecules and reactions.

www.ebi.ac.uk/biomodels



DATABASE

Atomic Almanac

Any periodic table will provide data such as an element's weight and atomic number. But to really get to know, say, molybdenum or strontium, check out the wealth of information at the Elemental Data Index from the National Institute of Standards and Technology (NIST). The site serves as a portal

for more than a dozen NIST collections stuffed with atomic measurements, including half-lives and relative abundances for different isotopes and spectroscopy results.



TOOLS

Smarter Searching

Even if you judiciously choose key words and skillfully deploy "ands" and "nots," searching a bibliographic database can return a torrent of hits or skip the paper you want. Researchers looking for an alternative way to bore into the *Caenorhabditis elegans* literature can glide over to Textpresso, a search engine from the operators of the nematode compendium WormBase.

Most bibliographic tools only scan abstracts. But Textpresso digs into the full text of more than 5000 nematode articles, along with some 18,000 abstracts from meetings, the *Worm Breeder's Gazette*, and other sources. And Textpresso lets you narrow your search by categorizing key words and specifying their functions and relationships to other terms. For instance, instead of trawling for all papers on the gene *daf-2*, which governs worm longevity, you can net only publications that record *daf-2* activity in particular types of cells or

that identify genes it interacts with. The site includes a similar search engine for the fungus *Neurospora crassa* and prototypes for fruit flies and papers from the *Journal of Neurobiology*. And other teams have launched Textpresso-based libraries for several model organisms, including yeast.

www.textpresso.org

DATABASE

Lives of a Forest

If a tree falls in the moist tropical forest of Panama's Barro Colorado Island, ecologists at the Smithsonian Tropical Research Institute (STRI) might not hear it. But they will find out, thanks to their regular surveys of the locale, which began in 1981. Now anyone can download 20 years' worth of data from this project to monitor tropical trees. About every 5 years, STRI researchers have fanned out through a 50-hectare plot on the island, counting, measuring, and mapping every tree above chest height. The census has tracked more than 350,000 trees from 300 species, including this golden guayacan (*Tabebuia guayacan*; above), and is one of the longest-running ecology studies, says group leader Richard Condit. After filling out a short questionnaire, visitors can download data from the first four surveys and use them to calculate values such as mortality and growth rates for different species.

ctfs.si.edu/datasets/bci

Send site suggestions to netwatch@aaas.org. Archive: www.sciencemag.org/netwatch