

Protist Web Alert

The Chlamy Crowd on the Web

Chlamydomonas (known as “Chlamy” to the cognoscenti) is a chloroplast-containing flagellated protist (sometimes actually called a unicellular green alga!) that provides a marvelous model system to study such diverse problems as flagellar motility and biogenesis, photosynthesis, response to light, cell wall formation and mating. It is haploid, can easily be induced to mate and grows in a simple medium with or without active photosynthesis. There are several excellent web sites on this organism.

The Chlamydomonas Genetics Center [\(http://www.biology.duke.edu/chlamy/\)](http://www.biology.duke.edu/chlamy/)

This is definitely the granddaddy of all Chlamy sites. It has a huge amount of information, is well organized and is apparently updated frequently by the (anonymous?) people at Duke University. It has nine subsites which include the (1) *Chlamydomonas* Genome Project. (2) ChlamyDB - an web-ACEDB searchable database of genetic and molecular loci, mutants, literature, addresses and accession numbers. (3) About *Chlamydomonas* – a site geared towards undergraduate teaching. (4) Methods – useful working protocols contributed by workers in this field. I especially like providing a clickable email address for contacting the person who contributes the protocol, (5) Strain List – on-line ordering of cell strains maintained by the Center. This function apparently represents the original role of the Center – to “receive, catalogue, preserve and distribute stocks of nuclear and chloroplast mutants of *Chlamydomonas*”, but the Center has clearly evolved into a central information exchange in addition to a culture collection. (6) Meetings (7) Jobs – postdoctoral and faculty positions available (more and more useful as ads for positions become more and more specific) (8) Resources – other culture collections. (9) Links – home pages of the Chlamy crowd.

This site is clearly the way organism research sites should be! Highly recommended.

The Chlamy Genome Project [\(http://www.biology.duke.edu/chlamy_genome/\)](http://www.biology.duke.edu/chlamy_genome/)

This is one of the subsites of the Genetics Center. It has a searchable Chlamy EST database, molecular and genetic maps of the nuclear, chloroplast and mitochondrial genomes. I would have liked to see a Chlamy-specific Blast server for the genomic and organellar sequences also. There is a commercial program called “GreenGenie” but there is no information on the algorithm used. The section on “How to name a Chlamy gene” should be very useful to molecular biologists trying to learn Chlamy genetics. And last but not least, if you have some spare change you can purchase cDNA or Bac libraries, and even a microarray with 79 chloroplast ORFs, 11 mitochondrial genes, 51 nuclear genes, and 3 selectable marker genes!

Makes me wish I was working on Chlamy!

**The Chlamydomonas Teaching Center
(or The 'Hands-On' Undergraduate Experience)**
(<http://biology.ecsu.ctstateu.edu/ChlamyTeach/chlamymain.htm>)

Mike Adams at Eastern Connecticut State University has created a marvelous site to introduce undergraduate students to this research organism. It provides a short introduction to Chlamydomonas together with reasons for studying this cell, such as “**It is pretty, non-pathogenic, doesn't stink, doesn't contaminate other cultures and no one cares if you kill it**“. This statement however is not universally true as there is a site called “People for the Ethical Treatment of Algae” at <http://len.schmid.com/peta/peta.htm> and the ‘Happy Dancing Chlamy’ at this site (<http://len.schmid.com/peta/dancing/dancing.htm>) certainly tugs at your heart. But in all seriousness, the Teaching Center site is a fine addition to undergraduate education, especially as the number of hands on labs in biological science courses in most Universities decreases so rapidly.

Home Pages of Chlamy Researchers

As in many other fields, the home pages of research workers frequently provide excellent web sites on the entire field or on selected aspects. A listing of 116 Chlamy crowd homepages is at <http://www.yale.edu/rosenbaum/chlamylist.html> (many links are broken however) and another listing is at <http://www.biology.duke.edu/chlamy/links.html>. Some selected interesting sites are those of Sabeeha Merchant at <http://www.chem.ucla.edu/dept/Faculty/merchant.html/>, Joel Rosenbaum at <http://www.yale.edu/rosenbaum/>, Steve King at <http://penguin.uchc.edu/~king/>, Craig Admundsen at <http://biosci.cbs.umn.edu/~amundsen/chlamy/index.html> (I was unable to open the movies of moving microtubules, however), and that of our fearless Editor in Chief, Michael Melkonian, at <http://www.uni-koeln.de/math-nat-fak/botanik/bot1/melkonian/> .

McMurdo Dry Valleys Long-Term Ecological Research (LTER)
(<http://huey.colorado.edu/LTER/>)

If you are really adventurous and don't mind cold water, you could collect interesting species and strains of Chlamydomonas in Antarctic lakes. Sarah Spaulding has provided images of several Chlamydomonas species (including one called “C. grandpa”) from Lake Fryxell located in a dry valley in Antarctica.

This is truly a genus with world wide distribution!

Green Fluorescent Protein Applications Page
(http://www.yale.edu/rosenbaum/gfp_gateway.html)

In line with the “green” orientation of this web alert, I would like to mention an excellent reference site on this important research tool. This site has many links to useful sites on applications of GFP. Since GFP is a major tool in cell biological research, many of these linked homepages have beautiful movies and images.

*Be careful not to confuse the acronym GFP with the **Gesellschaft für Fleischfressende Pflanzen (Society for Meat-Eating Plants)** (<http://www.carnivoren.org/de/index.html>)!*