



# Canadian Phycological Culture Centre at the University of Waterloo

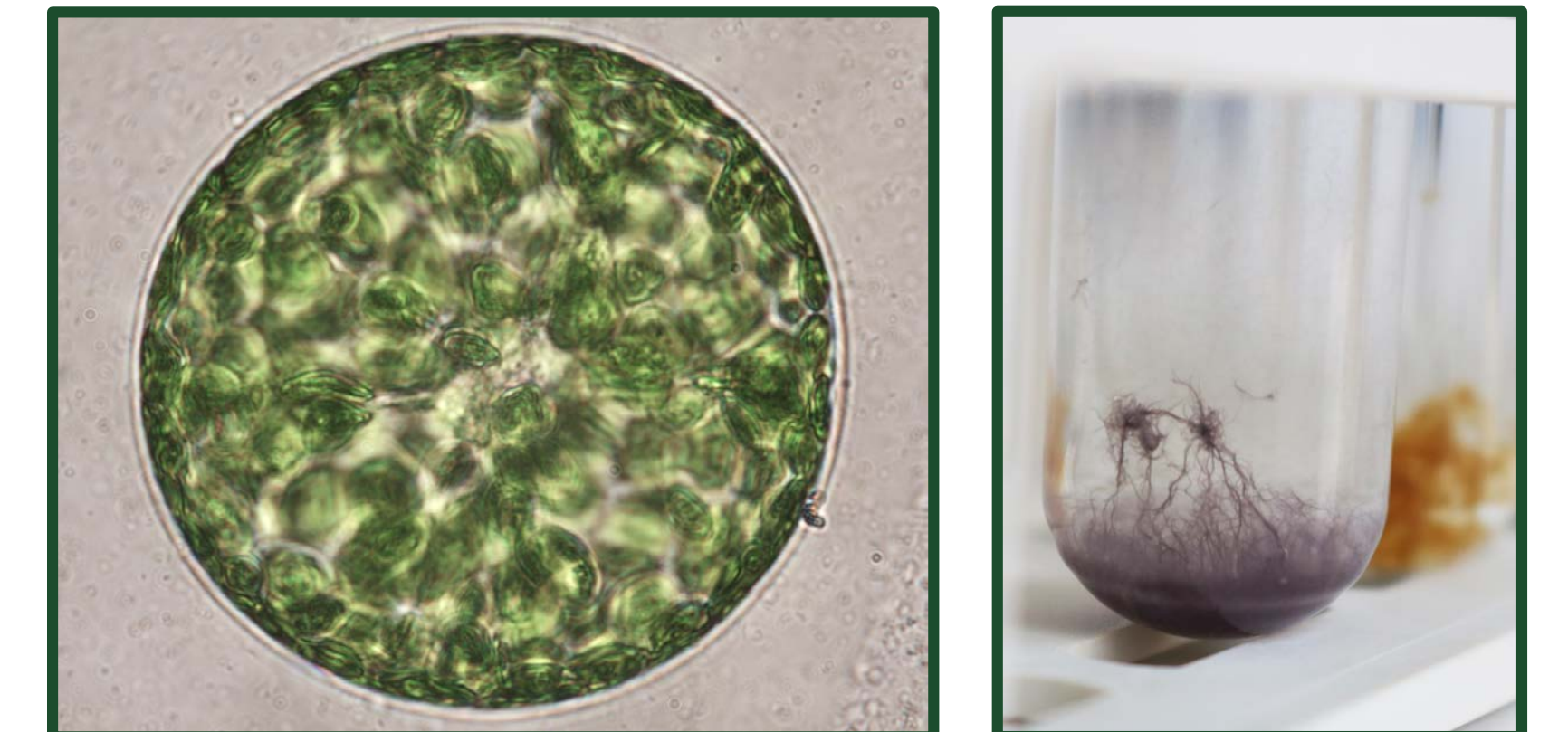


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The Canadian Phycological Culture Centre (CPCC) is a Canadian phycological resource centre, which provides research quality cultures of algae, cyanobacteria, and several *Lemna* spp. to scientists within Canada and internationally. Research programs of the users represent a broad range of interests in the areas of architecture, biochemistry, biology, biotechnology, cell biology, ecology, ecotoxicology, environmental studies, engineering, limnology, molecular biology, nanotechnology, phylogeny, physics, physiology, and taxonomy.



Founded in 1987 as the University of Toronto Culture Collection (UTCC), the name of the collection was changed to the CPCC in 2008. The CPCC carries about 400 strains of primarily freshwater species. It includes a wide diversity of microalgae and cyanobacteria primarily from Canadian waters, as well as species used in ecotoxicity testing and aquaculture. The facility supplies around 300 cultures annually along with culture media and concentrates to researchers in academic, government and commercial laboratories.



## Services provided:

- ❖ Supply of algae, cyanobacteria, and *Lemna* cultures
- ❖ Preparation of specialized media and concentrates
- ❖ Workshops in maintenance of algae and cyanobacteria
- ❖ Safe-deposit/cryostorage of valuable strains
- ❖ Consultation services (includes enumeration, isolation and identification; time- and expertise-permitting)
- ❖ Acceptance of select research strains into the general collection

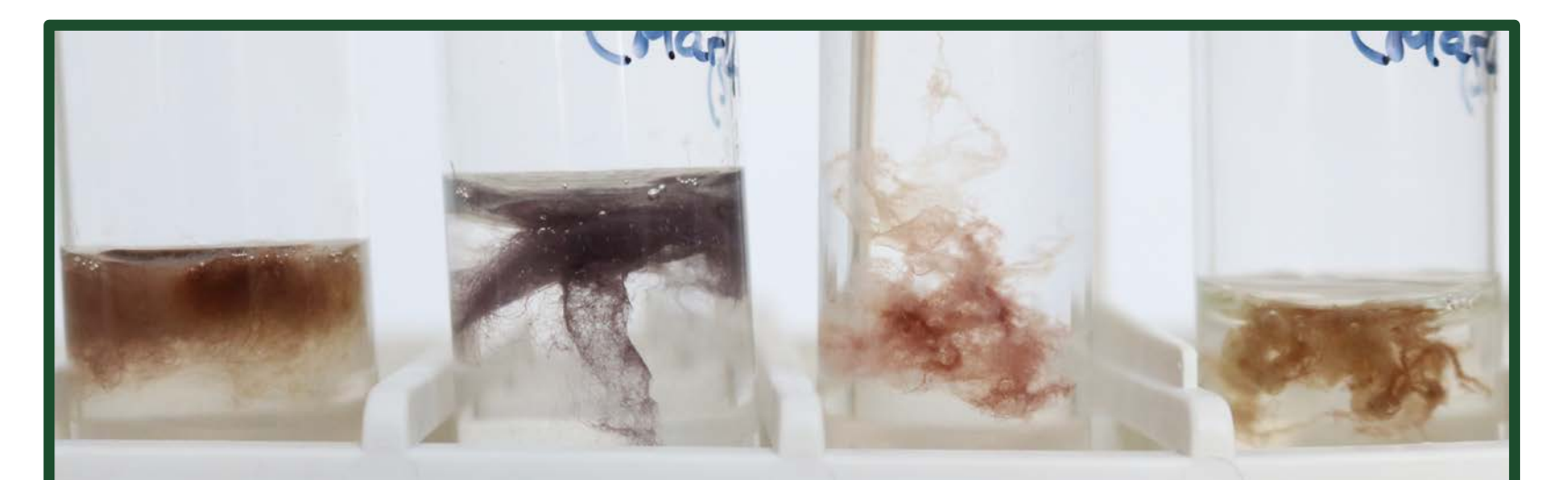


Many CPCC strains were isolated from areas of environmental concern or are useful in environmental research, such as:

- ❖ High lipid species that are potential sources for biofuel (*Ankistrodesmus falcatus*, *Chlamydomonas reinhardtii*, *Chlorella* spp.)
- ❖ Eco-toxicity test strains of algae and aquatic vascular macrophytes (*Raphidocelis subcapitata*, *Lemna gibba*, *Lemna minor*)
- ❖ Feed organisms for daphnids & other copepods, fish, shellfish (*Chlorella* spp., *Raphidocelis subcapitata*, *Rhodomonas* spp.)
- ❖ Toxic cyanobacteria (*Microcystis aeruginosa*, *Anabaena* spp., *Trichormus variabilis*, *Planktothrix rubescens*)
- ❖ Extreme environment isolates: high salt (*Chlorococcum* sp.), low pH (*Dunaliella acidophila*), low temp (*Phormidium lumbricale*)
- ❖ Cyanobacteria from industrially polluted sites (*Aphanocapsa* spp., *Lyngbya* spp.)
- ❖ Algae and cyanobacteria causing odour and taste in freshwaters (*Anabaena* spp., *Synura* spp., *Uroglena* spp.)
- ❖ Isolates from acid-stressed lakes & bogs (*Chlamydomonas acidophila*, *Euglena gracilis*, *Mougeotia* sp., *Tabellaria flocculosa*)
- ❖ Algae resistant to or tolerant of heavy metals (*Coccomyxa* sp., *Euglena mutabilis*, *Klebsormidium* spp., *Stichococcus* sp.)



The CPCC has been hosted in the Department of Biology at the University of Waterloo since 2008 and receives financial support from user fees and the University of Waterloo Faculty of Science. The Centre is staffed by the Technical Curator, Ms. Heather Roshon, with the assistance of several students. The Co-Directors are Dr. Kirsten Müller (UWaterloo – Biology) and Dr. Monica Emelko (UWaterloo – Civil & Environmental Engineering).



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