

## IMIC Algatech seminar talk:

### **Phagotrophic chrysophytes of the order *Ochromonadales*: a promising microbial source for the production of high-value compounds**

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The genus *Ochromonas* and some other related species represents a polyphyletic group within the large and diverse order *Ochromonadales* (*Chrysophyceae*). These “*Ochromonas*-like organisms” are defined by their similar morphology and life strategy, which is characterized by distinctive predatory behavior supported by occasional photoautotrophy. These organisms are widely distributed, occurring in both marine and freshwater habitats, and constitute an important component of the microbial loop as the mixoplankton. Nevertheless, they also exhibit certain characteristics that make them interesting from the perspective of applied phycology. As members of the chloroplast-containing *Chrysophyceae*, they are producers of the carotenoid fucoxanthin, a compound that has already been commercialized for its various beneficial health effects. Additionally, they produce substantial quantities of chrysolaminarin, which is another compound with health benefits, as well as smaller amounts of polyunsaturated fatty acids that are also in demand on the market. These organisms exhibit high robustness, versatility, and the ability to combine rapid heterotrophic growth with light-induced production of valuable compounds. Notably, their phagotrophic nature prevents contamination of cultures by other microbes, which usually represents a significant challenge in large-scale microbial biomass production.