Dear Editorial Board,

Please find enclosed our manuscript entitled “*Metabolic traits predict the effects of warming on phytoplankton competition*” for consideration as an article in Ecology Letters.

Our ability to predict the impacts of global warming on ecological communities is currently very poor. The vast majority of work on the ecological impacts of climate change is descriptive, quantifying historical patterns of change or documenting the outcome of experimental manipulations.

In the attached manuscript we attempt to bridge this gap by developing a quantitative, predictive theory for the effects of temperature change on interspecific competition. Our model links interspecific mismatches in metabolic traits, which capture the temperature dependence of resource acquisition, to predict the outcome of competition under changes in temperature and nutrient availability. We parameterised our model with metabolic traits, quantified from six species of freshwater phytoplankton, and tested its ability to predict the outcome of competition in a large-scale experiment with all pairwise combinations of species, factorially manipulating temperature and nutrient availability. The model correctly predicted the outcome of competition in 67% of the pairwise experiments from information on just four metabolic traits.

Our study shows that the effects of warming on phytoplankton competition can be predicted from basic information on the thermal response of growth and resource acquisition. These results emphasize the potential for using metabolic traits to predict how environmental change will influence the ecological dynamics of microbial communities.

We believe that our work is outstandingly novel because it is the first to develop and test a quantitative, predictive theoretical framework for the effects of warming on interspecific competition.

For the above reasons, we very much hope that our manuscript suits the aim and scope of *Ecology Letters* and that you can consider it for publication.

Yours Sincerely,

Gabriel Yvon-Durocher