

## ***Interactive comment on “Assessing approaches to determine the effect of ocean acidification on bacterial processes” by Tim J. Burrell et al.***

### **Anonymous Referee #1**

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The manuscript addresses a well-defined question that is relevant for the interpretation and comparison of results of various experiments conducted with the objective of predicting the impact of ocean acidification on bacterial processes of organic matter degradation and recycling. The introduction provides a good context to the problem. Methodologies are well described and the results are clearly presented. The conclusions are solid, well based on the critical interpretation of results and likely to be taken into account in the planning of new experiments. Specific comments: The effect of pH on MUF fluorescence is well known and 4-methylumbelliferone was even proposed as an acid-base fluorescent indicator (Chen, 1968). Because of this, sometimes a glycine-ammonium buffer pH 10.5 is added just before measuring fluorescence. This enhances MUF fluorescence without affecting the biological processes. Would this approach attenuate the effect of pH on the estimated results? Fluorescence was de-

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terminated at the same wavelengths for MUF and MCA but the fluorescence spectra of the two molecules are different. For MCA, 380 nm excitation and 440 nm emission are often used. Can this slight difference have any effect on the results and conclusions?

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