Incorporation of the GEMs item: *Hydrolysis of post-consumer polylactic acid waste polylactic acid (PLA)* submitted by Rich Gurney into the General, Organic and Biochemistry (GOB) curriculum.

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**Summary:** In this lab activity students depolymerize commercial polylactic acid (PLA) containers. The depolymerization occurs when containers are heated in a solution containing NaOH. The resulting lactic acid solution is then neutralized. Students can investigate the properties of this solution in multiple ways, including investigation of the pKₐ of the weak acid by titration.

Organic concepts addressed in this lab that align with a typical GOB curriculum include functional group chemistry of esters, acid-base titrations, weak acids, ionic compound solubility, and the chemistry of soaps and acidic cleaners. Green chemistry concepts addressed include the use of safer solvents/reaction conditions, green polymers, use of a renewable feedstock, alternative energy sources (microwave heating), designing safer chemicals, and design for degradation.