

1135-VK-1088 **Kathy A Tomlinson*** (kathy.tomlinson@uwrf.edu), 410 South Third Street, River Falls, WI 54022. *Rich Mathematical Modeling Projects for the Upper Division Student.*

In our upper division mathematical modeling course students work in teams to complete a semester-long project with the goal of learning about the modeling process, including background research, creation of multiple models, implementation of models with technology, and model testing. The teams select an open-ended problem that they find interesting from a list of choices provided by the instructor. The problems are supported by various modeling methods that are presented in the course. Experience taught us that students have a tendency towards applying only high school level mathematics in their models. A re-design of the problem statements resulted in projects that maintained the original modeling process goals, while promoting the application of university level mathematics. The re-designed projects are rich in the sense that they encourage multiple solutions, a multi-step modeling process, and productive conversation among teammates. We will share sample re-designed problem statements and student approaches. (Received September 19, 2017)