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**Zackery K. Reed\*** (reedzac@oregonstate.edu). *Motivating Function Spaces via Uniform Convergence.*

Function spaces are the foundation for many important and sophisticated topics in real analysis and its applications. While some abstract function spaces might not be introduced to students until advanced analysis courses, most introductory analysis courses present students with basic ideas that can motivate function space structure. Specifically, students often encounter uniform and point-wise convergence of continuous functions in such courses. In a recent study involving two teaching experiments, undergraduate real analysis students produced various metrics and norms on continuous function spaces by generalizing notions of distance from finite-dimensional space. Students were able to leverage the structure of uniform convergence as rich source material from which they could generalize. Moreover, discussions of uniform convergence in various settings facilitated useful explorations such as the completeness of various spaces given certain restrictions. I will present the students' generalizations in these spaces and discuss the various ways that uniform convergence influenced the students' activity and understanding. (Received September 26, 2017)