statsTeachR.org: A New Framework for Collaborative, Open-Access Curriculum Development

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statsTeachR.org is a new, open-access, online repository with modular lesson plans for teaching statistics using R at the undergraduate and graduate level. Each curricular "module" focuses on teaching a particular statistical subject or concept. This provides teachers with flexibility to build their own course à la carte, choosing only modules that are relevant for their course. The modules range from introductory lessons in statistics and statistical computing to more advanced topics in statistics and biostatistics. A unifying goal for statsTeachR is to facilitate the use of hands-on exercises in statistical computing, data visualization, and reproducible research with R to teach fundamental concepts in statistics. For example, the **resamp** module teaches resampling inference by having students run their own bootstrapping routines. In our graduate-level biostatistics courses, we have piloted successfully a curriculum where students develop statsTeachR modules as final projects. We also have used statsTeachR as a platform and framework for sharing curriculum and teaching materials for similar courses being taught at different institutions (UMass-Amherst and Columbia University) and for interdisciplinary workshops. In addition to serving as a central location for interactive and modern lesson plans in statistics and statistical computing, statsTeachR has defined a standardized file structure for modules and supplies templates for LaTeX documents, including lab assignments and slides (both with optional **knitr** compatibility). For each module on statsTeachR.org, curricular materials are available either as a direct download from the site or by direct link to a external website such as OpenIntro.org or GitHub.com. Additionally, registered users on statsTeachR.org can curate and share their own statsTeachR course by choosing from the slate of existing modules.