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**Nicholas J Horton\*** ([nhorton@amherst.edu](mailto:nhorton@amherst.edu)), Amherst College, Mathematics and Statistics, Campus Box 2239, PO Box 5000, Amherst, MA 01002-5000. *The increasing role of data science in undergraduate statistics programs: new guidelines, new opportunities, and new challenges*. Preliminary report.

In a world of increasingly complex and sophisticated data, there is additional demand for graduates who are able to extract actionable information from it. They need to be able to “think with data” and undertake computation in a nimble fashion. Undergraduates need practice in utilizing all steps of the scientific method to tackle real research questions. The statistical analysis process involves formulating good questions, considering whether available data are appropriate for addressing a problem, choosing from a set of different tools, undertaking the analyses in a reproducible manner, assessing the analytic methods, drawing appropriate conclusions, and communicating results. To address this new challenge and opportunity, the American Statistical Association recently updated its guidelines for undergraduate programs in statistics. The new guidelines describe how undergraduate programs in statistics should emphasize concepts and approaches for working with complex data and provide experience in designing studies and analyzing real data. In this talk, I will provide background on the increasing number of undergraduate statistics majors and minors and discuss recommendations for curriculum revisions to help prepare these students to use data to make evidence-based decisions. (Received September 04, 2014)