Multidisciplinary Statistics Laboratory and Curriculum

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The grant provided funds to create a classroom/laboratory for statistics in which up to forty students can work in pairs at personal computers or observe lectures and instructions given from the front of the room. The laboratory is being used in restructuring our introductory and advanced statistics courses. A student in an introductory statistics course now enrolls in a lecture section given by faculty in mathematics and in a laboratory section associated with another discipline chosen by the student. The theory of statistics is presented by faculty in mathematics while relevant applications are presented in the computer laboratory by faculty in Economics, Psychology and Biology team teaching the course.

The laboratory provides opportunities for students to learn statistical methods otherwise beyond the reach of an introductory course. It is hoped that the hands-on laboratory experience and the connections to a discipline of interest will also improve students' retention of concepts, but it is too early to measure the effects on student learning. However, the new approach to teaching statistics has produced benefits for the curriculum and the faculty. Because of the involvement of other departments in teaching them, the introductory courses have altered the statistical methods curriculum in the user disciplines. Elementary Statistics is now an integral part of the Research Methods sequence in Psychology, instead of a tangent to the sequence that was often treated by students as irrelevant. With the new courses, minimum preparation for Econometrics is more uniform and advanced than previously, and that course reflects the change. More Biology students are taking statistics than ever before. The interdisciplinary interactions spawned by the project have broadened the backgrounds of the faculty involved. Mathematics faculty are gaining experience with the ways in which statistics is applied in other disciplines. The faculty in the user disciplines are gaining a more critical view of the accepted practices in their disciplines and are learning new approaches to their data analysis problems.