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 From Dairy and Animal Science at Penn State

USING NEW TECHNOLOGIES TO ENHANCE LEARNING

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Penn State has begun investing extensively in both new and remodeled facilities which allow faculty to use the newest computerized technologies to enhance instruction.

These technologies make it possible to develop and deliver instructional material with the aid of computers housed in specially equipped classrooms.

The types of material can range from lecture information projected from a computer onto large screen to multimedia presentations that convey facts and ideas using a variety of sights and sounds. Photographs, drawings, films, videos, animation, photographic slides, and sound recordings all may serve as source material for developing visually rich presentations that can grab the attention of a generation of students raised on television and video games.

Affordable computer programs are now available for developing multimedia presentations on personal computers for individuals or groups. Until recently, these programs were very expensive and required costly hardware. Multimedia and associated technologies promise to revolutionize teaching methods in many subject areas, including animal reproduction. These technologies have come at a time when instructors find it increasingly difficult to offer a complete undergraduate course in reproduction of domestic animals.

For instance, basic research over the past decade has produced an explosion of information on the regulation of reproduction. This information provides the foundations a smaller faculty and narrowing base of expertise. These factors combined make a single course in reproduction less com-

plete and undoubtedly reduce the level of preparation for graduates as they embark on their careers.

To compensate, planning is under way to incorporate some of the latest concepts of biology find it difficult to incorporate them into established courses and still have enough time to teach traditional — but important — topics such as reproductive anatomy, estrus detection, production of sperm, reproductive behavior, development of the embryo and fetus, and birth.

Increasing the amount of class time and the number of college credits is not the solution to the problem. As college tuition and other costs continue to climb, an increasing number of students already need more than four years to complete their baccalaureate degrees. At the same time, financial support is decreasing for many universities and colleges, especially those in agriculture. That often

the new computer technologies — including multimedia — into existing reproduction courses at Penn State. Dan Deaver and I have applied for a federal grant to support the development of an instructional module in conjunction with faculty at universities in neighboring states. The module incorporates newly developed material, microscopic images, photos, line drawings, and images taken from slides and existing videos. This array of information will be transferred to either laser discs or compact discs to be retrieved by a computer and incorporated by faculty into lessons. The lessons could be delivered in the classroom or used

as review or supplementary in-depth study material by students working alone or in groups outside the classroom.

Because the materials can be put into an endless variety of sequences, it would be possible to use them for examinations as well. Interactive computer programs can be developed for students to work through an exercise, matching the difficulty of the session with individual skills and abilities.

The initial module is expected to serve as a prototype for developing modules in other areas. It would be duplicated and distributed to the faculty who contribute to its development and be made available to

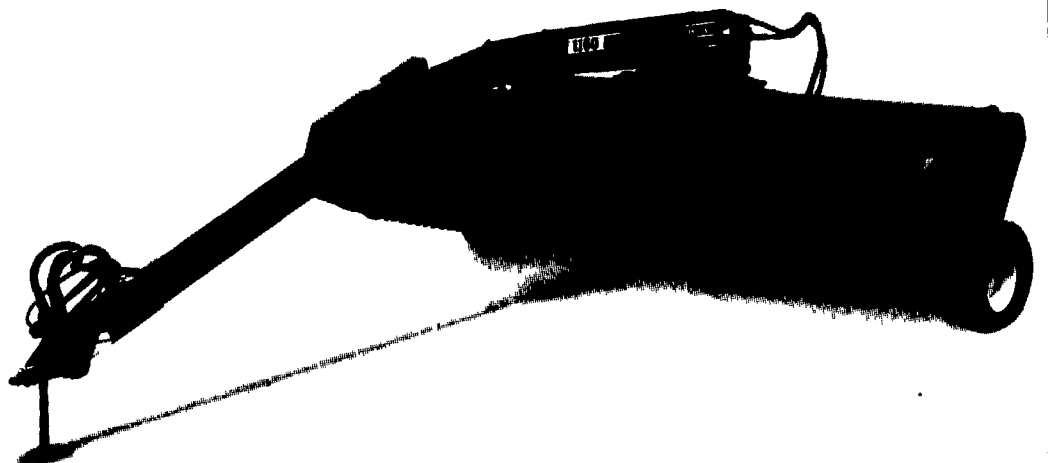
other universities.

The final product will provide a challenging format that should open new doors to learning for our students. It will not replace the instructor with a computer, but it should provide more learning opportunities for students and allow them to learn more without jeopardizing quality of instruction.

Although this is a significant undertaking, it is hoped that it will eventually lead to increasing use of these exciting new technologies.

The potential of these new tools is enormous. If we can put them to good use, they will benefit both our students and the society in which they will work.

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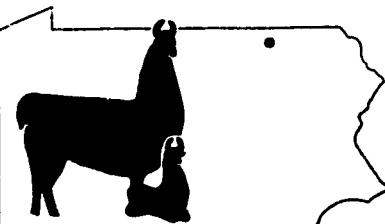


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