

## Section IV

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# ***Departmental Response to Recommendations From 1990 Review***

### **Organization and Leadership**

The 1990 review committee recommended filling vacancies with associate professors, recruit from a wider selection of institutions, and make use of leaves/sabbaticals. Although an aging faculty remains a concern, the department recently filled a position at the associate level. Recruitment for searches is widely conducted, resulting in applications from a wide selection of institutions. Since 1998, 8 faculty hires were made. Three are former U of MN graduates; however, they obtained significant experience outside the U of MN, in other academic areas or industry, prior to joining our faculty. In the last 5 years, five faculty took advantage of sabbaticals/leaves.

In the area of improved communications, the committee recommended a newsletter, a seminar series and additional social events. DAS has a successful newsletter “*AnSci Connection*” which is published monthly and posted on the departmental web site. DAS seminars, an ongoing activity, have enjoyed significant improvement in consistency of participation and quality of seminars during the last two academic years. Graduate students are required to attend and present a research seminar. A panel of faculty critique the presentation and give feedback to the individual graduate student. Outside speakers are also invited to give presentations. This has been an excellent venue for our very diverse group (applied and basic research across several disciplines) of graduate students to interact and become familiar with ongoing research within the department. The department has organized additional social events centered on service and teaching awards. Several informal social events have been organized and held to welcome students and build a sense of community for our undergraduates and graduate students.

### **Facilities and Equipment**

The recommendation of consolidating the department into one building would be difficult to implement due to lab space availability. However, the renovation of Haecker Hall has improved research conditions in terms of quality of space and has consolidated approximately 70% of the personnel. DAS administration has a yearly call for proposals for research equipment.

### **Research**

#### **A. Reproduction**

Since the last review, reproduction research is now being conducted within the Physiology/Growth Biology Discipline. In spite of the significant FTE reduction as compared to the 1990 review, the group has maintained an active and productive program. Research focuses on neuro-endocrine reproductive control in the turkey hen and applied reproductive technologies based on estrus synchronization in beef and dairy aimed at enhancing reproductive efficiency.

#### **B. Growth and Muscle Biology**

This research team has 7.75 FTEs in research. As in 1990, this critical mass of productive faculty constitutes an important strength of our Department. The reproduction and animal physiology faculty integrated into this multidisciplinary group, the group is now referred to as the Physiology/Growth Biology group. Researchers focus on issues ranging from cell biology to whole animal. There are three major program areas: Growth and Developmental Biology (4 research FTEs), Reproduction (2.18 research FTEs), and Genetics (1.58 research FTEs). Two faculty from this group have made use of

sabbatical leaves to strengthen their programs. Support from industry and competitive grants from Federal agencies contribute to maintain their vitality and productivity.

### **C. Animal Production Systems**

This specialty group has 5.25 FTEs in research. An important recommendation from the last review was to encourage multidisciplinary research in this, the most visible area of work that links our Department to the production sector. We believe that multidisciplinary work has been achieved, but we also acknowledge that more can be done. We will strive to continue on this path. Successful research in production systems is possible due to the successful interactions, support and collaborations with Research and Outreach Centers (SROC, NWROC, NCROC, WCROC and UMORE Park at Rosemount) where six of our faculty reside and are instrumental in facilitating these interactions.

#### ***Beef***

The core beef team is formed by three faculty who have designed a research program focused on applied reproductive technologies, nutrition and product quality and safety. Their research is integrated and multidisciplinary. Integration of work with the Physiology/Growth Biology group has been initiated but more remains to be done. The dairy-beef research has been minimized in order to attend to pressing needs of the beef industry and relatively low number of research FTEs (1.3) of the beef team. An articulated and strong extension program has been developed.

#### ***Swine***

In the lapsed time since the last departmental review, several faculty positions were lost. In the last five years, two positions were filled with a nutrition specialist at SROC and an animal behavior specialist at WCROC. The latter position was vacated about nine months ago and a search for a behavior specialist to continue the work initiated at the WCROC is in place. Animal modeling as a research discipline was discontinued. Currently this research group has 1.65 FTEs in research. The research focus is on animal nutrition assessing nutritional requirements of animals at their various developmental classes and replacement of animal protein in feed rations. The swine group is recognized nationally and internationally for their work in Dry Distillers Grains as a protein supplement in diets. Another significant effort is the comparison of conventional and alternative housing systems for swine rearing. Animal behavior is the driver discipline of this latter effort. A minor effort also exists in understanding the mechanisms of antibiotics as growth promotants and their replacement in swine rations.

The DAS swine group is integrated with the University Swine Center, where a larger group of faculty, mostly from CVM, participates and provides academic leadership to the swine industry through research and extension programs in production and disease prevention.

Excellent animal rearing facilities have been constructed at the SROC and WCROC.

#### ***Chicken***

There is one faculty member providing service to the broiler and layer industries through extension (.75 FTE) and teaching (.25 FTE). This faculty member is a member of the avian team and collaborates with other avian faculty in programs that are designed for the turkey industry as well. Similarly, other faculty members on the avian team collaborate to provide support to the broiler and layer industries. Research is focused on product safety and evaluation of grains for feeding rations used in organic poultry systems. Research is supported by industry, Rapid Response State Special funding and USDA-CSREES competitive grants. Facilities are excellent and available on the St. Paul Campus.

#### ***Turkey***

Unfortunately further reductions in faculty positions have occurred since the last departmental review. There are .25 FTEs in research. There is however, a larger group of faculty in the CVM'S Department of Veterinary and Biomedical Sciences. These faculty, together with our departmental faculty, provide

research, extension and outreach support to the MN Turkey industry. CVM faculty provide expertise in immunology, virology, and bacterial infectious diseases.

Research is focused on turkey feed and feeding requirements and the management of other environmental factors as well as the understanding of the neuro-endocrine regulation of the reproductive axis of the turkey hen and the effect of lighting on egg production. These latter two are reported as part of the Growth Biology and Physiology Group. Utilization of dried distiller grains in turkey rations, turkey immunization to vaso-intestinal peptide and use of lighting regimes have resulted in increased egg production. This latter research has had high impact in turkey production profitability. Research is funded by the Minnesota Turkey Growers Association, Rapid Response State funding allocation and USDA-NRI grants. Research facilities are located at UMORE Park and require renovation.

### ***Dairy***

A significant strategic reorganization of the dairy team has occurred in the last five years. This team has 2.05 FTEs in research. Research is focused on young stock nutrition requirements, dairy cow reproduction and dairy genetics. The dairy production facility at the SROC was discontinued and in its place a private/public partnership has enabled the construction of calf and heifer management facilities where young stock nutrition experiments are being conducted. Dairy cow reproduction research is being conducted at NWROC while crossbreeding evaluations are being carried out at WCROC and St. Paul campus. Development of a modern dairy production/research facility at UMORE park is under consideration. If this latter facility becomes a reality, discontinuation of the other facilities at NWROC, WCROC and St. Paul will occur. Food Science and Nutrition has discontinued their emphasis in dairy products and therefore interactions with this group of faculty have not been pursued.

### ***Sheep***

The sheep flock has been reduced and transferred to WCROC where animals are maintained as a teaching flock. Animals needed for teaching are transported to the St. Paul campus for fixed periods of time during the year when they are intensively used for teaching and student activities (FFA, Judging, and 4-H, among others).

## **Teaching**

### **A. Undergraduate**

With respect to teaching, two major events have occurred: 1) the U of MN moved from a quarter system to a semester system. 2) the conversion of the Science in Ag major to the Animal Science major. Both events necessitated an examination of the whole curriculum. The number of courses offered was reduced and required courses were reviewed and revised. We have broadened course experiences by the addition of labs to the introductory course. Students have the opportunity in these labs to interact with all animal species. We have also expanded our field trips in the advanced courses. The department has increased the involvement of teaching faculty in undergraduate programs. We have 7.22 FTEs in teaching. Additionally, several faculty without teaching appointments participate in supporting courses with lectures and labs. Advising still relies heavily on approximately 7 senior faculty; however, this is in transition as we train other faculty. Recruitment and retention of undergraduates is given high priority and is addressed by our faculty hosting, organizing and participating in various youth camps, 4-H and FFA activities, state fair and providing leadership to many undergraduate clubs and coaching to judging teams. As an outcome of the conversion to the Animal Science major, DAS faculty have approved an ongoing review process for our courses including materials, content, and delivery. Several of our courses utilize the web and specialized teaching software. The U of MN has made significant investments in state-of-the-art teaching technology.

## **B. Graduate**

The small number of new graduate students enrolling yearly and the diversity of their focus areas within the department is prohibitive to the development of a formal annual orientation program. However, the Graduate School conducts an overall orientation program for new students. In addition to information packets provided by DAS, resources and information are now readily accessible thru web sites. The Animal Science Graduate Student Association is a highly successful group. They are a well-organized group who meet regularly to discuss academic, service and social topics. They host and participate in several university events including Ag Awareness (K-7 urban students). The group elects members to serve on various departmental committees and the Council of Graduate Students. Graduate students are required to attend and present at the DAS Monday Seminar Series. Their presentations are critiqued by a panel of faculty members. Our extension faculty are now more invested in teaching activities; therefore, their interactions with graduate students have increased in quantity and quality. DAS administration has provided financial support to every tenure track faculty member, including extension, to sponsor a graduate research assistantship. Ph.D. students are required to have a minimum of 40 hrs of teaching experience within one year and including at least one of the following: lecture, lab instruction, oral extension presentation, or extension problem solving. An optional class in teaching is available to fulfill the teaching requirement. A faculty member in quantitative genetics was hired. The consideration of replacing the written prelim with a grant proposal has been discussed by the graduate committee, however, a commitment to move in that direction has not been made.

## **Extension**

Extension programming has undergone radical changes since 1990. Business plans have been developed for each area (beef, dairy, swine, and poultry) and programs are driven by goals and outcomes. An increased interdisciplinary approach is highlighted in the business plans accompanying this report. Dairy and swine program recommendations have been addressed and are documented in the business plans and elsewhere in this report. A recent extension hire will focus on pre-harvest management for improved meat quality and safety, thereby addressing one aspect of consumer product needs. Funding has been dramatically reduced. There is no funding available for assistantships. If there is to be adequate operational funding and funding for assistantships it will need to come from external grants. We support 4-H activities whenever extension programs are required. Additionally, we support FFA activities, the Gopher Dairy youth camp, and 4-H activities at the State Fair. DAS organized and held a youth summer camp for 2 consecutive years. We have revitalized the program with a youth camp held in 2004. Sabbaticals are encouraged and supported for extension faculty.