

ASAS Graduate Student Symposium: Networking to achieve interdisciplinary research

643 Networking beyond the animal sciences to facilitate interdisciplinary research. Russell B. Muntifering*, *Auburn University, Auburn, AL.*

Researchable problems in the animal sciences are often highly intricate, and progress toward their resolution is often best achieved through integration of several scientific disciplines. Interdisciplinary research involving animal scientists does not need to transcend departmental boundaries because our departments by definition comprise disciplinary specialization in nutrition, genetics, physiology, biochemistry, and so on. However, identifying and networking with disciplinarians in other departments and universities can be a daunting task, especially for new faculty members whose discipline-focused graduate training may not have exposed them to the scrutiny of persons who were not trained within the same scholarly limitations, culture and traditions. For example, a legitimate concern among social scientists is that they are often recruited to join a natural-sciences project too late to provide input toward experimental design and data collection that can often provide more productive and interesting opportunities for socioeconomic analyses. Involving external disciplinarians early in the planning stages of research, even if they do not ultimately collaborate, can be extremely useful in terms of exchanging ideas for collecting useful data and becoming familiar with each others' work. Another hurdle to interdisciplinary research is mutual ignorance or naiveté among disciplines that can feed unrealistic expectations of capabilities and deliverables. Such impediments can be overcome by dialog and working through graduate students; seating external disciplinarians on graduate student advisory committees is a good way for them to become familiar with new researchable topics through thesis/dissertation literature reviews. The unique governance system and academic culture of universities should ideally provide an environment where interdisciplinary research can flourish, but this is not always the case. Faculty need to be knowledgeable of and sensitive to norms of valuation and reward within disciplines other than their own, and new faculty especially need to be cognizant of evaluation and reward systems at their institutions pertaining to single-investigator vs. collaborative scholarship.

Key Words: networking, interdisciplinary research

644 Effect of interdisciplinary research to animal science. Janet R. Donaldson*, *Mississippi State University, Mississippi State, MS.*

Interdisciplinary research is becoming increasingly more important to the progression of studies related to animal health. Broad training in interdisciplinary research, coupled with high quality specialized research, enhances job opportunities for students in government, academic, and industrial settings. Interdisciplinary training in animal science can entail, but is not limited to, associations with microbiologists, immunologists, and engineers. This symposium will focus on the need for people classically trained in microbiology, immunology, and so on, to network with animal scientists for the development of novel, translational therapeutic approaches to improve animal health. This symposium will be based on my personal experiences in multidisciplinary research

from the approach of a microbiologist with no training in animal science. Networking beyond my discipline began during my first year in a faculty position. Through networking beyond my discipline, my research program has expanded to include a multidisciplinary team, consisting of animal physiologists, immunologists, gastrointestinal physiologists, and veterinary microbiologists. Together with this team, we have made substantial advancements toward progressive therapies for circumventing both animal and human diseases.

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645 Breaking the boundaries of animal science research through internationalization programs. Luis O. Tedeschi*¹ and James. P. Muir², ¹*Texas A&M University, College Station, TX,* ²*Texas A&M AgriLife Research, Stephenville, TX.*

Globalization has imposed many changes in economic and political arenas in many regions around the world, but scientific knowledge has no boundaries and multinational collaboration can increase scientific knowledge by fostering the discovery of techniques and resources that can assist current and foreseeable problems, including hunger and sustainability. Ruminant animals, for instance, convert human-inedible resources into animal products for human consumption, and humankind have benefited from this prehistoric symbiotic relationship because ruminants can adapt to diverse environment (climate, soil, and vegetation), making them apt to inhabit virtually anywhere in the world. Collectively, humans of all socio-economic and socio-cultural strata have relied on animals for energy and/or protein consumption, wool, and draft power. This relationship has sometimes led to extreme production systems (due to economy-of-scale factors in some countries) that may cause irreversible damage to the environment. Thus, appropriate management of animal production is essential to enable long-term, sustainable continuation of this human-livestock relationship within acceptable animal welfare criteria. Proper education is the first step. Study abroad courses expose students and faculty to new endeavors in animal science and provide effective communication skills for the advancement of science. Internationalization programs minimize technical and economic disparities among countries. The educational exchange among countries is imperative to prepare leaders and extend the frontiers of knowledge in sustainable livestock intensification. For university and agency researchers, international exchanges advance technical, socio-economic, and environmental differences and strategic possibilities among countries. International business partnerships are critical for major multinational companies based in the United States involved in animal products and genetics, seed, fertilizer, and agrochemicals. Therefore, the investment on international research collaboration increases our awareness of human resource needs and enhances the career opportunities of our students by preparing them not only with technical expertise but also with language capabilities and in-depth understanding of other cultures.

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