

conditions associated with chronic, subclinical inflammation (like oxidative stress, hepatic steatosis, and aging), affect the basal activity of nSMase2, causing up-regulation of that specific pathway and IL-1b hyperresponse. Experiments in mice and rats also show that silencing of nSMase-2 in hepatocytes can be achieved in vivo and can help alleviate an exacerbated IL-1b response.

Acid sphingomyelinase (ASMase) is localized in the endo-lysosomal compartment of the cells and impacts the dynamics of lipid raft domains and endosomes. These effects are especially important for the functions of macrophages during the innate immune response. In activated macrophages, ASMase activity modulates the magnitude of LPS-induced secretion of TNFa. The mechanism is complex and involves the regulation of: (1) the activity of TACE, an enzyme that cleaves the inactive TNFa precursor (pro-TNFa) to its active form and (2) the rate of recycling of pro-TNFa between lysosomes and the plasma membrane. Together, these experiments delineate a novel understanding of the bioactive functions of SMases in chronic and acute inflammation.

Key Words: inflammation, liver, macrophage

0193 Practical application of the basic aspects of membrane trafficking and receptor-mediated signaling on issues related to animal agriculture.

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Because of the relatively short life spans of beef cattle, membrane trafficking in relation to inflammation is not considered important unless it overtly affects productivity. However, glucose uptake and utilization is important for adipose tissue development in beef cattle, and increasing glucose utilization in intramuscular adipose tissue can increase carcass quality. Research from the 1980s demonstrated a lack of insulin sensitivity in isolated bovine adipocytes and adipose tissue explants incubated in vitro. Insulin did not stimulate glucose or acetate incorporation into fatty acids, nor did it increase concentrations of glycolytic intermediates in bovine adipose tissue incubated with exogenous glucose. Specific binding of [I125] iodinsulin and insulin degradation in bovine isolated adipocytes was low to non-detectable. These early studies indicated that insulin-dependent receptor-mediated signaling was less important in bovine adipose tissue than in adipose tissues of humans or laboratory species. Recent research demonstrated that GLUT4 expression in muscle and adipose tissue declined markedly after birth in calves, indicating the development of insulin resistance as cattle transitioned from suckling to functional ruminants. Insulin resistance is important in dairy cattle, and causes ketosis and fatty liver. In dairy cattle, s.c. adipose tissue GLUT4 expression decreased 50% following parturition, although insulin responsiveness in s.c. adipose tissue was restored as early as 3 wk postpartum. Expression of genes associated with insulin responsiveness (*IRS1*, *INSIG2*, *SREBF1*, and *ZFP423*) was upregulated in similar fashion.

Understanding the underlying mechanisms of insulin resistance and inflammation would increase animal health and thereby improve productivity.

Key Words: adipose tissue, bovine, insulin

ASAS GRADUATE STUDENT SYMPOSIUM

0194 Marketing 101: Learning how to market yourself for a successful career. R. M. Yamka*, *Blue Buffalo Company Ltd., Wilton, CT.*

The animal science industry can be a competitive marketplace as new graduates begin to look for a new job. Having good grades, the right skill set (laboratory experience, publication experience, good grades, etc.) and work experience (collecting samples, computer experience, working with animals, etc.) is not always enough to secure employment. Especially in a competitive job market. As a result, identifying ways to stand out from the crowd becomes important. Unfortunately, most job candidates do not realize that it is important to learn how to market and sell yourself to your target audience to meet their current and future business goals. How you market and sell yourself will be career and industry dependent (academia vs. consumer goods vs. pharma). Marketing and selling yourself does not end once you get your foot in the door. Marketing and selling yourself continues as you advance in your career. Although it is not as formal as the interview, marketing yourself requires you to network, communicate and engage management inside & outside your department. In addition, looking for new opportunities to build your credentials (board certification, become the "go to" person) and identifying ways to be unique will help set you apart and differentiate you from your peers. In this session, some of these key strategies will be discussed and how they can be applied for a successful career.

Key Words: marketing yourself, target audience, successful career, professional development

0195 Personal branding. M. Calvo-Lorenzo*, *Elanco Animal Health, Greenfield, IN.*

Who you are and how you carry yourself are very important to becoming successful. As a student and professional, your personal brand keeps you current in your own field, opens doors of opportunities for you, and creates a lasting impression. While making an unforgettable first impression in person is important, it is no longer the only way to establish your brand. Personal branding should help individuals define themselves in their workspace, while also incorporating the personal elements that make you who you are. In this session, several strategies will be discussed on creating a successful personal brand, while providing an overview on how to articulate one's

skills, experience, knowledge, and overall aspirations. The world wants to hear what professionals and experts have to say, and given the real-time connectivity of online social media today, learning how to create a powerful personal brand couldn't be more important.

Key Words: personal brand, success, professional development

0196 Bridging the gaps. J. D. Crosswhite*,
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The animal science community is constantly changing to meet the needs of the consumer. The same is true for animal science departments striving to meet the three pronged goals of land grant universities. The landscape of research in animal science is always evolving as our knowledge of basic science expands. The competitiveness of research funding is higher than ever, and this puts increased pressure on the researchers vying for these funds. In addition to this, the generation gap between the average consumer and production agriculture is increasing, making extension education as important as ever. These challenges are making split appointment positions within academia harder to accomplish, as the education of students taking animal science classes is still a major focus. This environment has opened up the opportunity for individuals with a completed master's degree to become instructors. Having a 100% teaching appointment allows these lecturers the unique opportunity to focus all of their attention on bridging the gap between a research mindset and production animal science within the classroom. Thus, opening up time and opportunity for research and extension faculty.

Key Words: lecturer, classroom, teaching

0197 Doctoral programs in animal science: Strategies for targeting academic careers. J. S. Caton*,
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Objectives of this review are to discuss successful doctoral student professional development strategies for targeting academic positions in the animal sciences and related fields. Entry level positions for academic careers are most often 2-way split appointments containing proportions of research, teaching, and extension responsibilities. Occasionally, institutions will offer 1- or 3-way split appointments. Positions will usually range from 9 to 12 mo appointments on a tenure-track, though variations exist. Successfully targeting these types of career positions requires deliberate planning and action by the doctoral student and mentoring team. Carefully selecting an advisor, institution, doctoral training committee, and other mentoring and training structures are essential early components in the process. Research experiences need to contain both discovery and application based aspects, present opportunities for leadership and collaborative team efforts, be solid

in experimental design and methodologies, demonstrate focus in targeted areas, and breadth across species, mechanisms, methods, and systems. Data should be published in multiple venues, including refereed manuscripts. Mentoring and training in teaching at the university level needs to be real and relevant. Experience in formal and informal aspects of teaching are needed and should be supported with both student and peer teaching evaluations when possible. Mentoring in extension needs to include significant clientele contact, evidence of proficiency with a breadth of communication techniques, and clear goals and assessments. Effective training in perusing and securing grant funds to support research, teaching, and extension activities should be evident. Leadership, collaborative skills, and professionalism should be developed and effectively demonstrated. Evidence of effectively managing research teams, mentoring undergraduate students, and overseeing undergraduate research projects helps demonstrate preparedness for the transition from doctoral student to assistant professor. Strategically targeting and successfully accomplishing specific professional development activities within research, teaching, and extension will foster excellence and help secure effective and successful academic careers in animal sciences and related fields.

Key Words: academic careers, doctoral programs, professional development strategies

**ASAS UNDERGRADUATE STUDENT
POSTER COMPETITION**

0198 Antimicrobial activity of tropical spice extracts against *Escherichia coli* O157:H7. E. Olasoji¹, I. M. Ogunade², D. Kim², and A. T. Adesogan²,
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This study examined the antibacterial effects of spices (Alligator Pepper, Yellow Nutmeg, Turmeric, Green Pepper, Nutmeg, Ginger, African Guinea Pepper, Bayleaf, and Rosemary) on *Escherichia coli* O157:H7 (EC). Stock solutions containing 0.2 g of each spice per mL of ethanolic extract were prepared. The antimicrobial activity of each extract was examined using the agar disc diffusion method. Approximately 100 µL of EC culture was surface-plated on MacConkey agar supplemented with cefixime and tellurite. An aliquot (10 µL) of each spice extract was pipetted onto a 6.2-mm sterile paper disc on the agar surface and incubated for 24 h at 35°C. The inhibition zones around the discs were measured in millimeters. The Minimum Inhibition Concentration (MIC) of each of the spice extracts was determined by macrobroth dilution method. The experiment was repeated twice. Results were analyzed using the GLIMMIX procedure of SAS. The inhibition zones