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EDITORIAL

Developing the Next Animal Genome Blueprint to Address Global Challenges in Animal Agriculture

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Animal agriculture converts 6 billion tons of dry matter from agricultural waste into nutritious protein and minerals for human consumption annually¹. Increasing global population coupled with improved economic status of people from several developing nations is leading to higher demand for animal based protein. However, there are many challenges associated with meeting this demand. To increase production in a sustainable manner, animal agriculture must quickly adapt to a multitude of factors including climate change and reducing greenhouse gas emissions; antibiotic resistance and consequent restricted use of antibiotics; and increased focus on animal welfare leading to new housing systems and management systems. Research is urgently needed to address these challenges effectively and meet the rapidly increasing global demand for animal protein.

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Editorial (continues)

Genomics has provided new opportunities to improve agricultural animal production by accelerating animal breeding to achieve higher growth rates, reduce feed intake, improve fertility, and improve resistance to diseases. Moving forward, genomics will also enable knowledge of gene structure and function leading to better understanding of the genetic basis of observed phenotypes that can be further improved. The animal genome community has undertaken a momentous task of developing “Genome to Phenome: USDA Blueprint for Animal Genomics 2018 – 2027”, a document that will outline the science priorities to be addressed over the next decade. This effort will build on the successes of the previous report, “Blueprint for USDA Efforts in Agricultural Animal Genomics 2008–2017”.² In that report, community goals were clustered into three categories: (i) Science to Practice (ii) Discovery Science and (iii) Infrastructure. Here we present our perspectives on accomplishments from the previous blueprint, discuss the challenges that remain, and describe early stages of development for the new blueprint.

The animal genome community has met or exceeded the ambitious goals set forth in the Science to Practice category. Notable successes achieved in the past decade for most agricultural animals (including aquaculture species) are the development of high quality genome assemblies, high density SNP marker assays, quantitative genetics software (ssBLUP, Bayes A & B, GenSel), and implementation of genome selection. Genomic prediction and animal selection based on SNP genotyping are now widely practiced in several livestock industries, and genotyping assays have improved accuracy of predictions along with reduced generation intervals compared to using traditional, pedigree based approaches.

The ambitious goals set in the Discovery Science category were only partly realized. Analysis of large-scale genotype data using approaches such as genome-wide association, haplotype, and homozygosity analysis has led to identification of genomic regions

associated with Mendelian and complex traits such as feed efficiency, fertility, product quality, fitness and disease resistance. However, further understanding of gene function and identification of causal mutations controlling complex traits will require high-quality genome annotations and extensive functional genomics research. The Functional Annotation of Animal Genomes (FAANG) global consortium is making headway in improving the annotation of agricultural animal genomes. Going forward, genomic predictions based on functional SNPs will be breed independent. New technologies such as automated sensors will enable measurement of more diverse phenotypes, improve accuracy, and facilitate real-time data acquisition at the farm level for uses in decision support systems. To address these and other knowledge gaps in Discovery Science, the primary focus of the new blueprint is on elucidation of the hidden connections between the genome and the phenome.

The challenges outlined in the Infrastructure category of the previous blueprint, such as education and training, resource populations, databases and genomic tools, are on-going. Employers in the livestock industries report a lack of trained quantitative geneticists whose skills are needed to run evaluations on large genotype datasets. Generation of huge amounts of genomics data (from genotyping and sequencing) and phenotyping data (collected in real-time from multiple sensors) has created complex and unprecedented challenges associated with data storage, analysis, curation, transfer, visualization, and information privacy. These big data issues continue to expand rapidly, and solutions are urgently needed. Except for large repositories such as National Center for Biotechnology Information (NCBI) and European Bioinformatics Institute (EBI), there are very few databases dedicated to livestock genomics research.

Data sharing remains a challenge because of industry competition and lack of international support for open access to results of federally funded research. In the case of poultry and swine,

most of the genetics currently in production today is owned by only a few companies. To tackle some of the cyberinfrastructure issues, the animal genomics community forged productive partnerships with the iPlant Collaborative (Cyverse). Other challenges related to infrastructure include severe reduction in the number of animal research facilities and genetically unique animal populations maintained by land-grant universities due to funding constraints, and the lack of robust methods for germplasm preservation and reproduction of animals representing diverse and/or unique genetics from stored germplasm in many livestock species.

Successes from the previous animal genome blueprint can be attributed to cooperation and collaborations among both domestic and international scientific communities. Some of these consortia are species specific (e.g., the Goat Genome Consortium) while others span all agricultural animal species (e.g., FAANG). The USDA-supported National Animal Genome Research Program (National Research Support Project or NRSP 8), played a major role in bringing all the communities together. Some of the notable international collaborations include the European Union (EU)-U.S. Animal Biotechnology Task Force, the U.S.-Canada Porcine Reproductive and Respiratory Syndrome (PRRS) Consortium, the 1000 Bull Genomes Consortium Project led by Australian researchers, and the FAANG global consortium.

To develop the new blueprint for animal genomics, we assembled a steering committee and a writing team comprised of eminent animal genome researchers. In the fall of 2017, a workshop was convened at USDA in Beltsville, MD to learn about major developments from allied fields, discuss the latest directions in various components of animal genomics, and to establish tangible goals for the next decade along with the challenges that need to be addressed to meet those goals. Workshop attendees agreed that the new blueprint needs to articulate the vision of the animal genomics community and serve as a tool to communicate this vision to federal agencies to drive science priorities and inform

regulations. It also needs to challenge, inspire and attract the next generation of researchers, farmers, and industry leaders to develop novel solutions for animal agriculture. To effectively communicate with this broad diversity of stakeholders, the new animal genome blueprint needs to consider scientific goals in the context of their potential impacts on individual and societal values. Accordingly, the Genome to Phenome: USDA Blueprint for Animal Genomics 2018-2027 has four foundational goals. Goal 1, Providing Nutritious Food to a Growing Human Population, focuses on enabling global food security, improving rural economy and development, and increasing productivity of the U.S. agricultural enterprise to support increased exports of animal products. Goal 2, Increasing Animal Fitness and Improving Animal Welfare, addresses adaptation to local and regional conditions, biotic and abiotic stresses as associated with climate change, resistance to diseases and pests, and the role of the microbiome in fitness and health of animals. Goal 3, Improving Sustainability of Animal Agriculture, addresses ways to achieve environmental sustainability (e.g., reduced land and water usage, balanced use of antibiotics for animal health, and reduced greenhouse gas emissions), economic sustainability (e.g., affordability of animal products and farmer profitability), and sustaining germplasm and genetic diversity. Goal 4, Meeting Consumer Needs and Choices, considers cultural or traditional preferences, healthy choices (e.g., lean meat products), nutritional enhancements, and farming practices that optimize animal welfare while achieving high levels of production. To address these challenges effectively, society and the scientific community need to be mutually engaged with regard to the use of science based analysis of the benefits and risks of transformational technologies such as gene editing and other biotechnologies and be vigilant about misinformation.

The writing team is now in the process of developing the preliminary draft of the Genome to Phenome: USDA Blueprint for Animal Genomics 2018-2027. Topics being considered include precision management/precision selection; characterizing

animal populations /germplasm preservation; bioinformatics and computational biology; genomic tools and resources; genome modifications for accelerated breeding; host-pathogen interactions; microbiome and metagenomics; high-throughput phenotyping; big data and cyberinfrastructure; genome annotation; functional genomics; and education and training. The preliminary draft of the new blueprint will be presented at the 2018 Plant and Animal Genome meeting in San Diego, CA. In the spring of 2018, we will be seeking comments from the animal sciences and other communities on this draft blueprint. Please send your comments/suggestions to animal.production@nifa.usda.gov

¹<http://linkinghub.elsevier.com/retrieve/pii/S2211912416300013>

²<https://nifa.usda.gov/sites/default/files/resources/Blueprint%20for%20animal%20genetics%202008-17.pdf>

12th World Conference on Animal Production – Abstract submission site is open!

The 12th World Conference on Animal Production will be held in July 5-8 at the Westin Bayshore Vancouver. The abstract submission site for the 12th World Conference on Animal Production (WCAP) is open! For submitting your abstract please visit the [website](#).

There will be a day of overlap with the 2018 ASAS-CSAS Annual Meeting & Trade Show. ASAS has combined the two meetings into one abstract system to make the submission process easier for individuals submitting abstracts to both meetings.

In addition to invited talks, the WCAP meeting will include 15-minute talks and poster breaks in the morning and afternoon each day. Individuals are encouraged to submit abstracts to be included during these sessions.

The 2018 WCAP meeting is split into 6 sections:

- Precision Livestock Farming to increase producers' profitability
- Higher food safety to enhance consumer confidence
- Challenges and opportunities in animal health
- Animal well-being challenges for today, opportunities for tomorrow
- Genetic improvement in developing countries: mission impossible?
- A picture is worth a thousand words - challenges in communication between agriculture and the public

WCAP Events:

Join us at 6:00 pm for a **welcome reception** at the beautiful Westin Bayshore ballroom on the evening of Thursday, July 5.

Plenary Sessions and Contributed Sessions will take place from 8:30 am - 5.30 pm on Friday, July 6 and Saturday, July 7.

Poster Sessions will be held during the morning and afternoon breaks on both day.

The **Gala Dinner** will be in the Westin Bayshore ballroom at 6:00 pm on the evening of July 7.

The ASAS-CSAS Annual Meeting & Trade Show will be held July 8-12 (Sunday-Thursday) at the Vancouver Convention Centre and area hotels. The Opening Session will be Sunday evening, July 8; scientific sessions will begin Monday morning, July 9, and run through noon on Thursday, July 12.

Opening Night Activities

We will kick everything off on Sunday, July 8 with the **Opening Session** (5:30-6:15). The 2018 opening Session will feature a **series of "TED" style talks**.

Join us for an Evening on the Jack Poole Plaza

with friends and family overlooking the Vancouver Harbour while the sun sets on the opening day of the 2018 ASAS-CSAS Annual Meeting & Trade Show. The BBQ and Ice Cream Social will begin immediately following the Open Session.

Scientific Program Highlights

- Triennial Growth Symposium
- ASAS-ASN Pre- Conference
- EAAP - ASAS Global Hot Topics Symposium

For more please information visit the [website](#)

From WAAP Members

From the American Dairy Science Association (ADSA)

American Dairy Science Association celebrates 100 years of the Journal of Dairy Science. The first issue of the Journal of Dairy Science® was published in 1917. To reflect on that century of research, the December issue of the journal's 100th volume contains the ADSA Foundation Collection of 100-Year Reviews, a special 100th anniversary retrospective containing 30 focused reviews of progress in areas of research that are featured in JDS. The timelines in each review place major discoveries and events into historical context.

This special reprint represents an effort to summarize and highlight 100 years of scientific and technical progress in dairy science. It was made possible through the financial support of the ADSA Foundation. Thirty separate but related papers, with 1,000 unique references, provide the dedicated reader an opportunity to learn where we are now and how we got here. Included in each article is a timeline of the major findings in each area. This series of papers can be used by anyone interested in the role that scientific research and technological advancement has played in efforts to make a safe and plentiful food supply for a growing

population.

ADSA announced that, starting in 2018, page charges paid by ADSA members for Journal of Dairy Science® (JDS) articles will decrease from \$85 to \$65 per page. The reduced page charges will apply to papers published in 2018 (volume 101) and thereafter.

From Asociación Latinoamericana de Producción Animal (ALPA)

XXVI meeting of the Latin American Association of Animal Production (ALPA) and V International Symposium of Animal Production - May 28th – 31st, 2018, in Guayaquil, Ecuador

The XXVI meeting of the Latin American Association of Animal Production (ALPA) and the V International Symposium of Animal Production will take place on May 28-31, 2018, at the Simón Bolívar's Convention Center of Guayaquil, Ecuador. The meeting brings together scientists, technicians, students, producers and people from the animal production industry from Latin America and the Caribbean region, with the purpose of delivering advances in research carried out in various countries of the American continent. This event is useful as a tool to enhance human capacities in our countries to learn, teach, adopt, generate, transfer, coordinate and share science and technology for a sustainable, equitable and non-contaminant animal production in Latin America and the Caribbean region. Activities in this meeting include conferences from outstanding scientists about state of the art on animal production topics, symposiums and poster presentations. Deadline for submitting summary research contributions to be presented at ALPA meeting is January 31st, 2018. For additional information, please visit the [webpage](#).

From American Association of Animal Science

ASAS moves the Journal of Animal Science, Translational Animal Science and Animal Frontiers Authors to Oxford University Press:

On September 11, 2017, American Society of Animal Science (ASAS) announced a new partnership with Oxford University Press (OUP). OUP is slated to provide production, distribution and marketing services for the three journals in the ASAS Animal Science Collection. Officially, OUP begins hosting our journals on Jan. 1, 2018, but there are several items related to the transition that membership and authors must know:

1. As of Oct. 31, 2017, submissions are still occurring through Scholar One on the same page as previously used. However, our Scholar One site has changed look and feel a bit as we have added OUP branding. In addition, for any article submitted after Oct. 31, processing through Scholar One will now be handled in the ASAS office by Lindsey Burnett. If you have any questions, please contact Lindsey by email at Lindseyb@asas.org.

2. After papers move through review, they will now undergo tech editing and production with OUP. Because of increased journal revenue generated by the move to OUP, ASAS will be able to offer authors an enhanced level of tech edit, reducing the workload on authors and reviewers, while increasing the quality of the journals. Over the next several weeks as papers are accepted, author proofs will begin coming from OUP Production. Please note, if a paper is slated for publication in November or December of 2017 all correspondence with authors will continue to go through ACSESS.

3. Because we are hosted on the ACSESS platform until December 31, 2017, but articles slated for publication January 1, 2018 forward will be published on the OUP platform, we are forced to suspend First Look (for JAS and TAS) and Open Review (for TAS) until December 18, 2017 (we will soft launch our new website with the reactivation

of these features on that date). We apologize for the inconvenience, but it cannot be avoided.

4. Based on changes in production both in the ASAS offices and within OUP, we expect to be able to decrease our total time to publish by another 30 days over the next 6 months!

If you have any questions regarding the transition or the decision to move from ACSESS to OUP, please do not hesitate to contact Dr. Jim Sartin (JAS, TAS and AF EiC) or Dr. Meghan Wulster-Radcliffe (ASAS CEO).

From European Federation Animal Science (EAAP)

News from the EAAP Council

The EAAP Council held its 165th meeting on December 14th and 15th, 2017 in Rome, Italy. The agenda of the meeting had many important items, among them there was the analysis of the answers to the questionnaire sent by the attendants at Tallinn annual meeting. The analysis was very satisfactory, with over 92% of participants considering the general organization of the meeting from good to extremely good and 83% had the same opinion of the quality of the scientific program. In general, the comments were all very positive with interesting comments and critics that will help us to improve the services for the future annual meetings.

The Council also agreed on the creation of the EAAP Knowledge Transfer Team that will be body in charge of carrying out dissemination of scientific information for this is the core business of the EAAP. The team would be composed of the EAAP staff, experts providing scientific support to EU and other projects and IT, e-learning and graphic experts. Tasks of the team include organization of industry workshops and support to the EU and other projects.

Among country members, Ukrainian is a new member of EAAP since last summer. The Secretariat and Ukrainian contacts are communicating on issues related to individual membership to render available to Ukrainian animal scientists the services offered already to all EAAP individual members. The Council also monitored and discussed the preparation of the Dubrovnik annual meeting that will be held in August 2018.

The support offered to the young scientists has recently been a key point of EAAP strategies and at last meeting the Council did many steps in favor of young scientists like to establish a second award of young researchers in the field of Pig breeding. Furthermore, it was decided to facilitate the liaison of young scientists with industry people in a kind of “Speed Dating format” to be held at Dubrovnik annual meeting.

The Future annual meetings will be held in Ghent (Belgium, in 2019), in Porto (Portugal, 2020), Davos (Switzerland, 2021) and Florence or Verona (Italy, 2022) meetings.

The Council reviewed in details proposals submitted by Publishing Companies Wageningen in offering their services for publication of the Books of Abstracts and Programme booklets for the period 2019 - 2021. The Council graded best the proposals arrived from Wageningen Academic Publishers and therefore the negotiation with this Dutch company will begin soon to continue to offer a high quality service. Next Council meeting will be held in March 2018.

Preparation of 2018 Dubrovnik annual meeting

The 69th Annual Meeting of the European Federation of Animal Science (EAAP) will be held in Dubrovnik in “Valamar Resort”. Dubrovnik is one of the most prominent tourist destinations in the Mediterranean, well connected with the rest of the world. Unique for its impressive medieval forts, churches, monuments and palaces, Dubrovnik is

often called the pearl of the Adriatic. More than a thousand-year old history of Dubrovnik made it one of the cultural centres of Europe. In the 1979 the City was included in the UNESCO World Heritage Site list. EAAP 2018 builds on the success of previous EAAP meetings, and it will provide an excellent opportunity for scientists working with a wide range of animal species and in related disciplines to meet and discuss the latest developments in animal sciences. Approximately 1300 scientists are expected to attend the conference with around 60 scientific sessions related to animal scientists, around 700 theatre presentations and 400 posters will be performed during the four days (August 27th – 30th, 2018) plus there will be organized technical tours on the final day, August 31st, and other related interesting workshops the days immediately before the conference. For registration and other information please visit EAAP 2018 [website](#). We look forward to seeing you in August 2018!



News from Science

**March 21st – 22nd, 2018, in Wageningen, The Netherlands
Symposium “Edible Insects: the value chain”**

The symposium “Edible Insects: the value chain” will be held on 21-22 March 2018 in Ede-Wageningen to celebrate 10 years of insect research in The Netherlands. Researchers of Wageningen University & Research will present the latest insights and findings related to the applicability of insects as a novel protein source considering different steps

of the value chain. The symposium connects the latest research results with the broad expertise of industry, and government obtained also thanks to the private public research initiative of the last 10 years. Renewed international scientists will also present their last findings. The interdisciplinary conference is an excellent opportunity for researchers, industries and users interested in the research on insects to explore potential solutions for a more efficient and effective use of this novel protein sources. For more information read [here](#).

Research farm teams up with the world

In a world that is increasingly connected, research has to reflect that. At Cargill's Global Innovation Center in Velddriel, the Netherlands, each trial is connected to various others across the globe and is aimed at understanding effects on the entire pig. Trials for the market in South East Asia? At the Cargill Global Innovation Center in Velddriel, the Netherlands, these are preferably carried out in winter, when outside temperatures can drop to below 0°C. Read the full article on [Pig Progress](#).



Revolutionizing chick vaccination

The Foundation for Food and Agriculture Research (FFAR) has awarded an \$800,000 Seeding Solutions grant to Applied LifeSciences & Systems (ALS-S), a startup company that is using imaging and robotics technology to develop a device for vaccination of

newly hatched chicks. This device is designed to provide an efficient system for high throughput vaccination potentially enhancing bird health, increasing productivity for poultry producers, and reducing the need for antibiotics. The FFAR grant has been matched with funding from Merck Animal Health for a total \$1.6 million investment.

The limited precision of current vaccination methods results in an estimated 5-20 percent of chicks left unvaccinated or partially vaccinated and vulnerable to disease. By significantly increasing the rate of successfully vaccinated chicks, this method has potential to provide greater protection against disease and infection.

[Learn more](#) about the project.

News from Industry

France to better market its maize seeds

France remains the biggest European producer of maize seeds and hence a major exporter. To be able to remain in this position, efforts are being made to step up branding the French corn seeds. This is stated by the National French Federation of Maize and Sorghum Seed Production (FNPSMS). In total, about 128,500 hectares of maize seed have been harvested this year in the EU-28. Of this total, 58 000 hectares came from France. The share of France is around 45% in the EU which makes it the biggest producer of maize seeds. Hungary and Romania account for 21,000 hectares each. Read the full article on [All About Feed](#).



VIDEO: Sow insemination in group housing

Lactation and gestation are increasingly being done without confining the sows – but so far for insemination it is thought better to lock up the sows. A producer from Germany however has found a way to inseminate while leaving the sows walk in groups. See the [video](#).

Publications

I. The new scientific opinion on “[Food from the Oceans](#)” is now available. The EC Scientific Advice Mechanism High Level Group advises on how more food and biomass can be obtained from the oceans in a way that does not deprive future generations of their benefits. The aim of the Opinion is to inform maritime, fisheries and aquaculture policy development and implementation in the coming years to help increase the quantity of sustainable food coming from the ocean. This includes preparations for whatever succeeds the present European Maritime and Fisheries Fund under the post-2020 Multi-Annual Financial Framework for EU policy priorities.



2. New technical articles have been recently published on Engormix:

I. **“Validation of the M-stage scoring system for digital dermatitis on dairy cows in the milking parlor”** ([https://](https://en.engormix.com/dairy-cattle/articles/validation-stage-scoring-system-t40757.htm)

en.engormix.com/dairy-cattle/articles/validation-stage-scoring-system-t40757.htm);

II. **“Role of Heat-Stable Enterotoxins in the Induction of Early Immune Responses in Piglets after Infection with Enterotoxigenic Escherichia coli”** ([https://](https://en.engormix.com/pig-industry/articles/role-heat-stable-enterotoxins-t40829.htm)

III. **“Nutritional Intervention to Improve the Calcium and Energetic Status of High Producing Transition Dairy Cattle”** ([https://](https://en.engormix.com/dairy-cattle/articles/nutritional-intervention-improve-calcium-t40713.htm)

IV. **“World Aquaculture: Environmental Impacts and Troubleshooting Alternatives”** ([https://](https://en.engormix.com/aquaculture/articles/world-aquaculture-environmental-impacts-t41399.htm)

Meetings and Conferences

January 27th - 28th, 2018 in Mymensingh-2202, Bangladesh

Ist International Conference on Challenges for Future Agriculture 2018

The Ist International Conference on Challenges for Future Agriculture 2018 will be held at the Bangladesh Agriculture University in Mymensingh-2202, Bangladesh on 27th - 28th January. ICCFA2018 will provide a platform for researchers, academician and industry stakeholders to share science, experiences and opinions for combating the challenges in future agriculture in the world. ICCFA2018 receives strong support from a group of senior experienced researchers who

are willing to help out to achieve this important objective. For more information and registration please visit the [website](#).

January 31st – February 1st, 2018 in Surrey, United Kingdom

VetBioNet Workshop: “BSL3/BSL3+ Aquatic Animal Infection Facilities: Steps To Achieving Conformity With ISO Biocontainment Standards”

The VetBioNet consortium is organizing the workshop “BSL3/BSL3+ Aquatic Animal Infection Facilities: Steps To Achieving Conformity With ISO Biocontainment Standards”, which is related to the activities of WVP3, Task 3.2. The workshop will take place at APHA Weybridge on 31st January and 1st February 2018. Participation to the first day of the event is open to stakeholders and organizations outside VetBioNet project partners. If interested in taking part to the workshop, please contact Ms. Una McCarthy (Una.McCarthy@gov.scot). For more information and the agenda please visit the [website](#).

February 11th - 16th, 2018 in Auckland, New Zealand

WCGALP meeting

The Organising Committee of the World Congress on Genetics Applied to Livestock Production is gearing up to the meeting in Auckland, New Zealand, that will be held in February 2018. WCGALP congress is the premier event for researchers and professionals involved in genetic improvement of livestock. For more information, please visit the [congress website](#).

February 25th - 27th, 2018 in Tel Aviv, Israel

Congress on Controversies in Bovine Health, Industry & Economics (BovineC)

The Congress on Controversies in Bovine Health, Industry & Economics (BovineC) is a unique get-together meeting where controversial topics in bovine health, industry and economics will be discussed between veterinarians, scientists and farmers. The main subjects of the Congress should be related to cattle however, abstracts related to sheep and goats will be also accepted. For more information please visit the [congress website](#).

March 21st – 22nd, 2018, in Wageningen, The Netherlands

Symposium “Edible Insects: the value chain” Genome



The symposium “Edible Insects: the value chain” will be held on 21-22 March 2018 in Ede-Wageningen to celebrate 10 years of insect research in The Netherlands. Researchers of Wageningen University & Research will present the latest insights and findings related to the applicability of insects as a novel protein source considering different steps of the value chain. The symposium connects the latest research results with the broad expertise of industry, and government obtained also thanks to the private public research initiative of the last 10 years. Renewed international scientists will also present their last findings. The interdisciplinary conference is an excellent opportunity for researchers, industries and users interested in the

research on insects to explore potential solutions for a more efficient and effective use of this novel protein sources. For more information read [here](#).

May 15th – 20th, 2018, in Wuhan, China

2nd International Conference "Insects to Feed the World" (IFW 2018)

The 2nd International Conference “Insects to Feed the World” aims to address all aspects related to insects as food and feed and will bring together research scientists, government officials and private sector representatives from the food and feed sector from both developing and developed countries. The overall objective of the conference is to further explore the potential of edible insects for food and feed security.

For more information, please get in contact with Dr. Longyu Zheng (Huazhong Agricultural University, China. Email: ly.zheng@mail.hzau.edu.cn), Dr. Arnold van Huis (Wageningen University, the Netherlands. Email: arnold.vanhuis@wur.nl), and Dr. Jeffery K. Tomberlin (Texas A&M University, USA. Email: jktomberlin@tamu.edu).

May 28th – 31st, 2018, in Guayaquil, Ecuador

V International Symposium of Animal Production

The XXVI meeting of the Latin American Association of Animal Production (ALPA) and the V International Symposium of Animal Production will take place on May 28-31, 2018, at the Simón Bolívar's Convention Center of Guayaquil, Ecuador. The meeting brings together scientists, technicians, students, producers and people from the animal production industry from Latin America and the Caribbean region, with the purpose of delivering advances in research carried out in various countries of the American continent. This event is useful as a tool to enhance human capacities

in our countries to learn, teach, adopt, generate, transfer, coordinate and share science and technology for a sustainable, equitable and non-contaminant animal production in Latin America and the Caribbean region. Activities in this meeting include conferences from outstanding scientists about state of the art on animal production topics, symposiums and poster presentations. Deadline for submitting summary research contributions to be presented at ALPA meeting is January 31st, 2018. For additional information, please visit the [webpage](#).

June 20th – 22nd, 2018, in Bozen – Bolzano, Italy

1st European Symposium on Livestock Farming in Mountain Areas

The Symposium is a joint initiative of the Free University of Bozen-Bolzano, the EURAC Research Center, FiBL Switzerland, Università degli studi di Padova and EAAP. It will be held for the first time in 2018 at the Eurac Research Center in Bozen-Bolzano. The symposium will focus on mountain livestock farming and will cover a broad range of thematic fields such as animal husbandry and breeding, agricultural economics, landscape conservation and social sciences related to mountain livestock. The overall objective of the Symposiums is to bring together scientists that deal with questions regarding livestock farming in mountain areas in Europe. Mountain regions face challenges due to their environmental condition that affect the success of production and that are similar regardless of geographic location. Invited keynote speakers, oral presentations as well as poster presentations are foreseen, the program will be completed by field trips to local farms and industries.

Important dates:

February 28th 2018: Deadline for abstract submission

March 15th 2018: Notification about abstract acceptance

April 1st 2018: Final registration for presenters (both oral and poster)

June 2nd 2018: Registration closes

For further information, access to the submission platform and registration please visit the [website](#).

June 24th-27th, 2018, in Knoxville, TN, USA

ADSA Annual Conference and Tradeshow

Mark your calendars now for the [2018 Annual Meeting of the American Dairy Science Association \(ADSA\)](#), the most comprehensive dairy science meeting in the world. As a global forum for professionals, educators, and students, the meeting will attract more than 1,500 dairy foods and production specialists with common but diverse interests in the future of dairy science. Abstract submission deadline 21 February 2018. For further information and registrations, please visit [ADSA website](#).

July 5th-8th, 2018, in Vancouver, Canada

12th World Conference on Animal Production

The 12th World Conference on Animal Production will be held in July 5-8 at the Westin Bayshore Vancouver. The meeting will be followed by the 2018 ASAS-CSAS Annual Meeting & Trade Show that will be held always in Vancouver in July 8-12. For more information please read [the brochure](#).

July 8th-12nd, 2018, in Vancouver, Canada

2018 ASAS-CSAS Annual Meeting & Trade Show

The American Society of Animal Science (ASAS) and the Canadian Society of Animal Science (CSAS) will hold the 2018 ASAS-CSAS Annual Meeting & Trade Show in Vancouver, Canada. The meeting will be held in July. We have three main goals for the 2018 meeting: 1) to present high quality, relevant science that links animal science and animal agriculture, 2) to return to our roots, by having a number of social events to enhance networking and add a family feel to the meeting and 3) to continue to provide a successful and sustainable meeting model. For more information and registration please visit the [Annual Meeting website](#).

August 1st-3rd, 2018, In Kuching Sarawak, Malaysia

18th AAAP Animal Science Congress

The 18th Asian Australasian Animal Production Science Congress will be held in Kuching Sarawak, Malaysia. The host of the 2018 congress is [MSAP](#) (Malaysian Society of Animal Production). The organizing committee was launched already in early 2016 and now in vivid action. It is expected to have again more than 1,000 enrollments representing usually 30~40 countries along with about 800 scientific presentations. Please remind the date and venue city, which is one of the well-known tourist attraction city in Malaysia. For further information please refer the official homepage of the 2018 AAAP Animal Science Congress .

August 27th - 31st, 2018 in Dubrovnik, Croatia

69th EAAP Annual Meeting (EAAP 2018)

The Organising and the Scientific Committees are delighted to announce that Croatia has been chosen as the venue for the 69th Annual Meeting of the European Federation of Animal Science. The

meeting will take place from 27th to 31st August 2018 in Dubrovnik, one of the most prominent tourist destinations in the Mediterranean. The venue for the meeting will be the Valamar Resort. EAAP 2018 builds on the success of previous EAAP meetings, and it will provide an excellent opportunity for scientists working with a wide range of animal species and in related disciplines to meet and discuss the latest developments in animal sciences. For registration and other information about the European animal science annual meeting, please visit [EAAP 2018 website](#).

September 2nd -6th, 2018, in Clermont-Ferrand, France

10th International Symposium on the Nutrition of herbivores

The International Symposium on the Nutrition of Herbivores (ISNH) is an international scientific conference that addresses a whole range of issues linked to the nutrition of herbivores in production systems or in the wild. The 10th edition will be hosted by the French National Institute for Agricultural Research (INRA) in Clermont-Ferrand, France. The 10th International Symposium on the Nutrition of Herbivores conference will be a forum to discuss herbivore nutrition supporting agro-ecological and sustainable intensification approaches. The Symposium will feature plenary sessions, paper sessions, and posters by international experts. The sessions of the Symposium will cover basic herbivores nutrition to nutritional strategies to improve nutritional efficiency, product quality, health and animal welfare, and environmental issues. Contributions from young scientists are encouraged. The registration will open mid-January 2018. Deadline for submitting the abstract is **1st February 2018**. For further information and the paper submission procedure please visit the [website](#).

September 5th-7th, 2018, in Utrecht, The Netherlands

6th European Veterinary Immunology Workshop

The European Veterinary Immunology Group (EVIG) and the local organizing committee are organising the 6th EVIW, EVIW2018 in Utrecht, The Netherlands.

Plenary and concurrent session topics will include: 1. Innate immunity; 2. Adaptive immunity; 3. Infection and immunity; 4. Vaccination; 5. Clinical immunology; 6. Allergy; 7. Mucosal immunology; 8. The microbiome in relation to immune responses. Further information on registration, abstract submission and deadlines will be available soon at <https://www.eviw2018.com/>

October 16th -19th, 2018, in Mar del Plata, Argentina

41st Argentine Congress of Animal Production

The 41st Argentine Congress of Animal Production will be held in October 16th -19th 2018, in Mar del Plata in Argentina. The Congress will be organised by [AAPA](#). For further information please see the [leaflet](#).

October 23rd -27th, 2018, in Mumbai, India

19th World Congress of Food Science and Technology

The 19th World Congress of Food Science and Technology will be held in October 23rd -27th 2018, at CIDCO International Convention Centre, in Mumbai in India and the theme will be "25 Billion Meals a Day by 2025 with Healthy, Nutritious, Safe and Diverse Foods". The target highlights about 250 plus internationally well known speakers of high repute along with special Plenary talks and 60 plus Scientific sessions and more than 800 poster presentations with a spectrum of about 3000 plus

delegates. For more information and registration please visit the website. Deadline for submission abstract: 28th February 2018.

October 25th – 27th, 2018, in Osijek, Croatia

International Scientific-Expert Conference on the Preservation of Animal Genetic Resources

The conference is organized by the Croatian Agricultural Agency, the University of Zagreb, the Josip Juraj Strossmayer University of Osijek and the University of Zadar. It provides the possibility for verbal presentation, presentation via posters and the presentation of your institution/company or as a participant. For further information, please read the [first notification of the conference](#) and visit the [conference website](#).

November 27th -29th, 2018, in Alexandria, Egypt.

1st International Conference on Animal Genetic Resources Conservation in Africa and Asia

The 1st International Conference on Animal Genetic Resources Conservation in Africa and Asia will be held in November 27th -28th 2018 at the University of Alexandria, Egypt. The conference main theme will be: "Towards a rational conservation strategy for animal genetic resources for food and agriculture in Africa and Asia". More information will be available soon.

September 3rd– 6th, 2019 in Leipzig, Germany

International Symposium on Ruminant Physiology

The Symposium about Ruminant Physiology will be held in Germany in 2019 at the *Kongresshalle am Zoo of Leipzig*. The Symposium is the major international conference on ruminant physiology. It provides an overview of current, important scientific findings and areas of research in the physiology of ruminants of all kinds. For more information, please visit the [symposium website](#).





The **World Animal Science News** is the Official WAAP Newsletter. This interesting update about activities of the global animal science community presents information on leading research institutions in the entire world and also informs on developments in the industry sector related to animal science and production. The Newsletter is sent to all WAAP member organizations and to their associates. You are all invited to submit information for the newsletter. Please send information, news, text, photos and logo to waap@waap.it.

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