STAR-IDAZ International Research Consortium on Animal Health

Newsletter
November 2019

Animal Health Innovation: Latin America

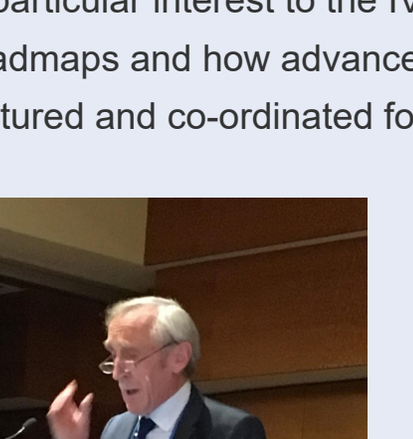
Members of the Secretariat to the STAR-IDAZ International Research Consortium on Animal Health (IRC) participated in the Animal Health Innovation: Latin America event in São Paulo, Brazil in August. The event brought together academia, start-ups and biotech companies to meet with financial investors and established multinational veterinary pharmaceutical companies and stimulate the growth of the animal health industry and the speed of innovation through partnerships and investment.

Recognising the importance of establishing links and partnerships to enable research to be taken forward by industry, the IRC organised a session entitled "Shortening the Innovation Pipeline". As the IRC mission is to coordinate public and private sector R&D funders/programme owners research programmes to contribute to new and improved animal disease control strategies and tools including candidate vaccines, diagnostic tests, and therapeutics for a number of priority diseases/issues, shortening the innovation pipeline is an important way to get new and improved tools and control strategies into the hands of the livestock industry quickly.

The IRC session comprised presentations followed by a funding panel discussion involving the UK Science and Innovation Network representing the Newton Fund and Innovate UK, the São Paulo Research Foundation (FAPESP) and the European Commission. The issues discussed included pathways to impact, improving knowledge exchange along the pipeline from basic science to industry, barriers to cross-sectoral engagement, handling intellectual property and the importance of international collaboration in the face of diminishing resources.

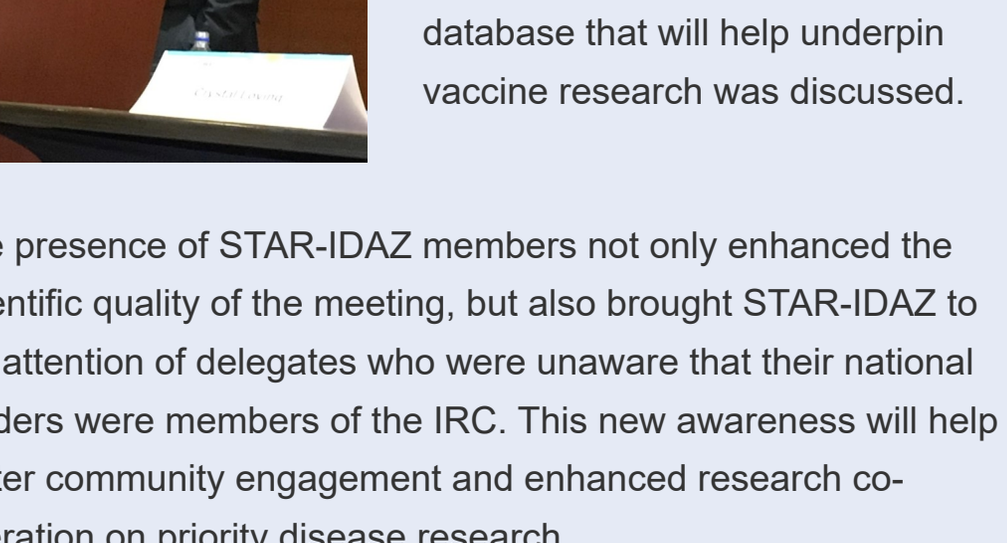
STAR-IDAZ IRC at IVIS, Seattle

The Scientific Committee of the STAR-IDAZ IRC met on 12th August 2019 in Seattle, immediately before the 12th International Veterinary Immunology Symposium (IVIS) which ran from 13th-16th August. The 12th IVIS was a special meeting co-organised by the Veterinary Immunology Committee (VIC) of the International Union of Immunological Societies (IUIS) and the American Association of Veterinary Immunology (AAVI). In line with the vision of IUIS which is 'Immunology without Borders', the theme of the 12th IVIS was to provide a forum for veterinary immunologists from around the world to 'Get Connected'.
The 12th IVIS was attended by 237 delegates from 26 countries across all continents. This included several members of the STAR-IDAZ IRC Scientific Committee, providing a unique opportunity for IVIS delegates to learn about the strategic priorities and activities of STAR-IDAZ. In the opening session Alex Morrow provided an overview of STAR-IDAZ, describing how the Working Groups are conducting Gap Analyses into specific diseases and the Roadmaps that are being developed to accelerate the development of disease solutions. He demonstrated how the Roadmaps can be accessed on the STAR-IDAZ website and the research challenges that have been identified.
Of particular interest to the IVIS audience were the Vaccine Roadmaps and how advances in veterinary immunology can be captured and co-ordinated for global benefit.



This theme recurred throughout the meeting, particularly in the VIC Toolkit session where progress towards the development of a searchable veterinary immunology database that will help underpin vaccine research was discussed.

The presence of STAR-IDAZ members not only enhanced the scientific quality of the meeting, but also brought STAR-IDAZ to the attention of delegates who were unaware that their national funders were members of the IRC. This new awareness will help better community engagement and enhanced research co-operation on priority disease research.



STAR-IDAZ IRC Workshop: 2019 Global Foot and Mouth Disease Research Alliance (GFRA). Bangkok, Thailand

The workshop was held on 31st October at the 2019 Global Foot and Mouth Disease Research Alliance (GFRA) Meeting in Bangkok, Thailand to validate research roadmaps for the development of foot and mouth disease (FMD) diagnostics, vaccines and control strategies. About 30 experts participated bringing a well-balanced range of specialisms (across diagnostic, vaccine and epidemiology) and wide geographical representation.
The workshop was facilitated by Dr Stefano Messori, who presented research roadmaps for the development of FMD candidate vaccines, diagnostics and disease control strategies. These roadmaps were constructed using the research gaps identified in recent GFRA publications and meeting outcomes, and the invited experts reviewed and refined them. The group started identifying the main priority leads for each of the roadmaps, and then looked into the details of the identified challenges for each of these leads. Participants agreed that the level of details of the research needs identified in the roadmaps was adequate for having an informed discussion, and adequately identifying priorities.

The level of discussions and engagement of participants in this STAR-IDAZ IRC workshop was excellent, and a good level of agreement was reached on the priorities identified. As the workshop provided a valuable contribution to developing roadmaps, it is recommended that a similar approach should be followed to validate research roadmaps for other STAR-IDAZ IRC priority diseases/issues.

African Swine Fever: increased research effort

The spread of African swine fever (ASF) throughout 2019 has had a devasting effect throughout east Asia and eastern Europe. With about half of the world's pig population in China, the destruction of large numbers of pigs in China alone has had knock-on effects on the prices of pork and other meats around the world, and on demand for animal feeds.
There is currently no vaccine available for ASF, and research to find a vaccine has been increasing. In response to the global research effort there has been a significant increase in research outputs with 167 research papers published in 2018 compared with 47 in 2009.

Year	CAB Abstracts	PubMed
2019	135	125
2018	167	104
2017	137	101
2016	109	72
2015	137	63
2014	98	33
2013	93	68
2012	59	33
2011	73	40
2010	53	24
2009	47	26

Of the 302 papers on the disease indexed CAB Abstracts in 2018-2019, 44 were from China, and 94 from Europe.
Road maps for the development of diagnostic tests, and for the development of candidate vaccines have been created in collaboration by the Working Group and can be seen at: https://roadmap.star-idaz.net/#/mB2ck

International Coordination of Research on Infectious Animal Diseases (ICRAD)

Pre-Announcement of a co-funded Call for Transnational Collaborative Research Projects

The International Coordination of Research on Infectious Animal Diseases (ICRAD) is a new ERA-Net Cofund Action under Horizon 2020 that will build upon the achievements of the ERA-NET EMIDA (Emerging and Major Infectious Diseases of Animals) and the ERA-NET ANIHWA (Animal Health and Welfare). Its purpose is to:

- support cross-cutting research to improve animal health and welfare, with associated benefits towards public health, the environment and the economy.
- connect research partners with different but complementary scientific and technological expertise to maximise resources and share risks, costs and skills.

The partnership between industrial and academic researchers, where appropriate, will improve and accelerate the development of technological solutions for the benefit of animal health and welfare.

Research and innovation jointly funded by the European Commission (EC) and the ICRAD partners will seek concerted approaches towards developing new and improved instruments to address and control infectious diseases, particularly regarding detection, intervention and prevention strategies.
ICRAD has announced the upcoming call for joint transnational research projects on animal health. The Joint Call, with an indicative budget of approximately 23.7M€, brings together 23 funding organizations from nineteen countries. The co-funded call covers the major groups of infectious diseases of animals (including fishes and bees), and infections by viral, bacterial, parasitic and fungal pathogens, prions, and multifactorial diseases, with particular emphasis on ASF and animal influenza. Pre-proposal should be submitted by 20 February 2020. For full details see: https://www.icrad.eu/

EU funded VACDIVA Project for an Africa swine fever vaccine

The 'kick-off' meeting of the project VACDIVA was held on the 18th November at the Complutense University of Madrid (UCM). The project aims to develop an effective vaccine against African swine fever which is spreading in Europe, China and other countries. The vaccine developed will allow differentiation of infected from vaccinated animals (DIVA). The project will last the following four years.
The VACDIVA project has been financed with 10 million euros by the European Union (EU) in the call "H2020-SFS-2019-1, topic: A vaccine against African Swine Fever". Two international ASF reference laboratories, both of them in Spain, will participate in the project: the Centre for Veterinary Health Surveillance (VISAVET) of the University Complutense and the Animal Health Research Centre (CISA-INIA) of the National Institute for Agricultural and Food Research and Technology. The 'kick-off' meeting was attended by the Advisory Committee, consisting of the University of Lisbon, the Medicines Agency, STAR-IDAZ IRC, OIE, FAO, Cornell University, University of Iowa, and the European Association of Pig Producers and the International Council for Hunting and Wildlife Conservation.

Research Roadmaps

The research roadmaps in the IRC Priority Topics can be accessed on the **STAR-IDAZ IRC website**

The roadmaps can be interrogated to show the paths to developing disease control solutions, and can help identify the gaps in the research. There are links to current projects undertaken by IRC members.

The following roadmaps are already available:
Diseases

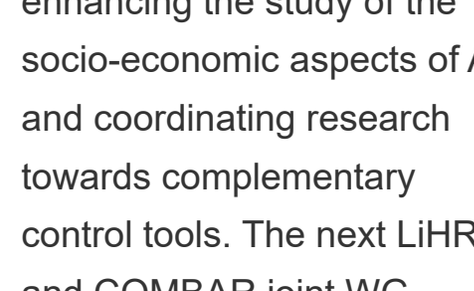
- African swine fever: Development of diagnostic tests
- African swine fever: development of candidate vaccines
- Brucellosis: development of candidate vaccines
- PRRS: development of candidate vaccines
- Bovine TB: development of candidate vaccines

Generic Roadmaps

- Development of disease control strategies
- Development of diagnostic tests
- Development of therapeutics
- Development of candidate vaccines

LiHRA and COMBAR meetings, Ghent, Belgium, August 2019

The fifth annual meeting of the Livestock Helminth Research Alliance (LiHRA) was held back-to-back with the Joint Working Group meetings of the COST Action COMBAR in Ghent on 27-28 August 2019. Participants from 30 (research) organisations in 23 countries presented overviews of their current research areas to discuss pathways for collaboration and new ideas to be explored. Jozef Vercruysse (Ghent University) presented an overview of the work of the STAR-IDAZ Helminth Working Group (WG) and Dr Johannes Charlier of SIRCAH facilitated the review of the roadmaps. WG members were appointed by LiHRA to develop the STAR-IDAZ research roadmaps on therapeutics, vaccines, diagnostics and control. Since the appointment of the WG at the end of 2017, sub-working groups were created for each roadmap. The roadmaps of vaccine development and control strategies were further split into roadmaps for nematodes and trematodes. The roadmaps were completed, presented at the STAR-IDAZ scientific committee meeting in Seattle and will now proceed to publication on the STAR-IDAZ website. The Helminth WG is currently producing a summary document highlighting the top research priorities based on the 6 developed road maps. During 2 days following the LiHRA meeting, the COST Action COMBAR gathered 125 participants from 31 countries and 5 continents. The central theme of the meeting being "Anthelmintic resistance (AR) in ruminants: who cares?", the economic perspective of the topic as well as views from medicines industry and extension workers in non-European continents (Australia, USA, Africa) were presented. Early-career investigators comprise 40% of the 180 COMBAR members and have benefitted so far from 14 short-term scientific missions and 2 specific training schools being organised around the topic. COMBAR will run for two more years to deliver on its key aims of harmonising diagnostic approaches, pooling efforts to map AR, enhancing the study of the socio-economic aspects of AR and coordinating research towards complementary control tools. The next LiHRA and COMBAR joint WG meeting will be held during 8-9 October in Kaunas, Lithuania.



STAR-IDAZ IRC Scientific Committee

The STAR-IDAZ IRC Scientific Committee met for their second meeting of 2019 at the Bill & Melinda Gates Foundation (BMGF) office in Seattle on the 12 August. The SC was welcomed by Dr Nick Juleff who described the work of BMGF in agriculture, which is to help make markets functional, with a focus on smallholder farmers in Asia and Africa. Their main focus in animal health are developing and improving products for priority animal diseases, leveraging on existing vaccines and drug producers, and exploring translational sciences to contribute to global health. BMGF is a partner of the STAR-IDAZ IRC.
The SC considered the outcomes of the Executive Committee meeting in Beijing including adding of Mycoplasmas to the list of priority topics, and consideration of a working group on fish diseases. Two members of the SC had resigned this year, Sergio Rosati and Gustavo Zielinski. Both Gustavo and Sergio were thanked for their contributions to the SC. The SC considered possible replacements in particular looking for subject areas where the committee was not so strong. Potential replacements will be put to the Executive Committee for agreement.
The SC reviewed the roadmaps for Therapeutics and Disease Control Strategies, which had been substantially revised. The roadmap for diagnostics was also endorsed. The road maps for vaccines, diagnostics, therapeutics and control strategies of helminths were presented and approved. The roadmaps are available on the STAR-IDAZ IRC website.
The terms of reference for a Working Group on anti-microbial resistance (AMR), entitled the AMR and innovative alternatives to antibiotics Working Group, were agreed. The 3rd Symposium on Alternative to Antibiotics (ATA) in December in Thailand was identified as a suitable opportunity for the first meeting of the WG.
The Working Group on Vector borne diseases was changed to Vector Transmission and Control. Progress on all of the priority topics including, helminths, bTB, diagnostics (tools and technologies), African swine fever, FMD, brucellosis, PRRS, coronaviruses, emerging issues, influenza, and vaccinology was reviewed.
The next meeting of the SC will be in Ghent, Belgium, 21-22 January 2020.

International Brucellosis Society Meeting, Chicago, USA, 2-3 November, 2019 Chicago, USA

A presentation on STAR-IDAZ IRC was given by Dr Stefano Messori at the International Brucellosis Society Meeting (IBS), which was held at the annual CRWAD meeting. The Board of the IBS was invited to suggest experts to be members of groups to review and validate separate roadmaps for vaccines, diagnostics, therapeutics and disease control. It was proposed that the roadmaps be constructed so that they can be reviewed at the global symposium to be held in Italy, at the Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise, in Teramo, later in 2020.

DISCONTOOLS: Save the date

DISCONTOOLS, the database with research gaps for improving infectious disease control in animals is close to completion of the updating cycle of the more than 50 listed diseases. The update of the disease chapters will be celebrated during a symposium (29 April 2020) with the aim to develop an overview of disease-specific as well as cross-cutting animal health research needs. The symposium is open to animal health scientists, academics, research managers, risk managers, policy-makers, private sector actors, representatives of funding bodies, foundations and trusts. The programme will cover DISCONTOOLS animal health research gaps for epizootic, production and zoonotic animal diseases; the STAR-IDAZ research roadmaps for new animal health solutions; challenges to public-private partnerships in animal health, recent animal health funding initiatives (ERA-NET ICRAD, Horizon Europe) and a discussion on the future of DISCONTOOLS and cross-cutting research priorities.

Events

3rd International Symposium on Alternatives to Antibiotics (ATA) - 2019. Challenges and Solutions in Animal Health and Production. 16-18 December 2019 Bangkok, Thailand

STAR-IDAZ IRC Scientific Committee, 20-21 January 2020 Ghent, Belgium

African swine fever: knowledge and future challenges; contribution from the COST Action ASF-STOP. 29-30 January 2020 Brescia, Italy

STAR-IDAZ IRC Executive Committee meeting 9-12 March 2020

DISCONTOOLS: Filling the knowldge gaps in animal disease control, Brussels, 29 April 2020

IRC Members

The complete list of members is:
1. Danish National Veterinary Institute (DTU Vet), Denmark
2. National Institute of Agricultural Research (INRA), France
3. French Agency for Food, Environmental and Occupational Health & Safety (ANSES), France
4. Ministry of Health, Italy
5. Ministry of Agriculture, Nature and Food Quality, The Netherlands
6. National Institute for Agriculture and Food Research and Technology (INIA), Spain
7. Department for the Environment, Food and Rural Affairs (Defra), UK
8. Biotechnology and Biological Science Research Council (BBSRC), UK
9. Regional Consortium; Universiteit Gent (Ghent University), Université de Liège, the Federal Public Service Health, Food Chain Safety and Environment (Unit Contractual Research) and CODA-CERVA (Veterinary and Agrochemical Research Centre)
10. Kimron Veterinary Institute, Israel
11. International Livestock Research Institute (ILRI), Kenya
12. Tanzania Veterinary Laboratory Agency (TVLA), Tanzania
13. National Institute of Animal Health, National Agriculture and Food Research Organisation (NIAH), Japan
14. Agriculture Research Services, United States Department of Agriculture (USDA ARS), USA
15. National Institute of Agriculture Technology (INTA), Argentina
16. Ministry of Science, Technology and Productive Innovation (MINCYT), Argentina
17. Canadian Food Inspection Agency (CFIA), Canada
18. Zoetis
19. OIE-World Organisation for Animal Health
20. Bill and Melinda Gates Foundation (BMGF)
21. HealthforAnimals (Global Animal Medicines Association)
22. Diagnostics for Animals (Manufacturers of Animal Health Diagnostics)
23. European Commission
24. Regional Consortium; Nigerian Animal Health Research Network led by National Veterinary Research Institute Vom
25. National Advisory Council on Animal Health (CONASA) and the National Autonomous University of Mexico (UNAM), Faculty of Veterinary Medicine and Zootechnics (FVMZ)
26. Australian Animal Health Laboratory, CSIRO, Australia
27. Lanzhou Veterinary Research Institute (LVRI), China.
28. National Veterinary Institute of Sweden (SVA), Sweden

SIRCAH

SIRCAH, funded by the European Commission through H2020, is run by a partnership including Defra (UK Department for Environment, Food and Rural Affairs), World Organisation for Animal Health (OIE), CAB International, BBSRC (Biotechnology and Biological Sciences Research Council), and AnimalhealthEurope (association representing animal medicines industry in Europe). It provides organisational and communication support to the IRC, facilitates research gap analysis including the provision of literature reviews for working groups, maps funding activities against identified research needs, and helps mobilise resources to address them. The Secretariat also plays an important role in advocacy for the consortium and bringing in new members.

Further Information

For further information about the IRC please visit www.star-idaz.net. Research funding organisations and programme owners interested in joining the IRC or researchers interested in joining the working groups should contact the STAR-IDAZ IRC Project Office:
Alex Morrow: Alex.Morrow@Defra.gsi.gov.uk or Luke Dalton: Luke.Dalton@Defra.gsi.gov.uk.

SIRCAH
Alex Morrow (Defra) - alex.morrow@Defra.gsi.gov.uk
Luke Dalton (Defra) - luke.Dalton@Defra.gsi.gov.uk
Stefano Messori (OIE) – s.messori@oie.int
Johannes Charlier (AnimalhealthEurope) j.charlier@animalhealtheurope.eu
Sadhana Sharma (BBSRC) - sadhana.sharma@bbsrc.ac.uk
Robert Taylor (CABI) – r.taylor@cabi.org

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