

MARCH 2022

# GARA NEWSLETTER



THIS NEWSLETTER CONTAINS RELEVANT INFORMATION  
ABOUT ASF FOR ORGANIZATIONS, SCIENTISTS,  
VETERINARIANS AND STAKEHOLDERS.



[VISIT THE GARA WEBSITE](#)

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## Message from the GARA Executive

Dear GARA Community,

It has been four long years since the highly successful 4th GARA Scientific Workshop was held in Sardinia from 11-14 April 2018. After multiple attempts to arrange the 5th GARA Scientific (initially scheduled to take place in Kampala, Uganda in 2020), we are pleased to inform you that the dates and venue of the next GARA meeting have now been finalized. Our 5th GARA Scientific Workshop will be held at the Melia Caribe Beach Resort, Punta Cana in The Dominican Republic from 24-26 May 2022. The meeting will provide an opportunity to connect with ASF collaborators and friends of old (and new), to get an update on advances in ASF research and to lend your expertise to a region grappling with a recent introduction of ASF. Critically, it will provide us with the opportunity to update the ASF GAP analysis report, a core component of the workshop. Whilst updates on ASF research activities have been possible through virtual webinars and training sessions (held whilst we were in the grips of the COVID-19 pandemic, and summarized in this newsletter), these can never replace the valuable in-person discussions that a GARA meeting affords. We look forward to welcoming you to Punta Cana together with our local organizing committee from the Universidad Autónoma de Santo Domingo!



# GARA 2022 Scientific Meeting

It is our great pleasure to invite you to the 2022 Scientific Meeting of the Global African Swine Fever Research Alliance (GARA)!

CONFERENCE  
ANNOUNCEMENT

REGISTER TODAY

## GARA 2022 SCIENTIFIC MEETING

May 24 - 26, 2022  
Punta Cana, Dominican Republic  
Meliá Caribe Beach Resort

Organized by the Global African Swine  
Fever Research Alliance (GARA) and the  
Universidad Autónoma de Santo  
Domingo (UASD)

[Click here for more information](#)



# GARA 2022 Scientific Meeting

The GARA 2022 Scientific Meeting is hosted by the Universidad Autónoma de Santo Domingo and will take place from 24-26 May at the Melia Caribe Beach Resort in Punta Cana, Dominican Republic.

[REGISTER NOW!](#)

## See below for important dates:

Deadline for abstract submission for Student Travel Awards: **31 March 2022**

Deadline for abstract submission: **15 April 2022**

Deadline for early registration: **15 April 2022**

Deadline for guaranteed lodging: **20 April 2022**

Deadline for late registration: **15 May 2022**

## Submit an abstract!

Abstracts must be related to the overarching themes of the 2022 GARA Scientific Meeting. ASF conference topics include **Epidemiology, Virology, Pathogenesis, Immunology, Diagnostics** and **Vaccines**. All accepted abstracts will be approved as posters. If you would like to be considered for an oral presentation, please indicate your preference when submitting your abstract via the link below. The deadline for abstract submission is **31 March 2022** for students who wish to be considered for the Travel Award & 15 April 2022 for all other delegates.

[SUBMIT AN ABSTRACT!](#)

## Sponsor the 2022 Scientific Meeting!

The 2022 Global African Swine Fever Research Alliance Scientific Meeting will convene over 100 leading scientists, students, and industry professionals in African Swine Fever research. Sponsoring the 2022 scientific meeting can provide international recognition of your company and products. Build your network and develop meaningful client relationships in beautiful Punta Cana!

[INTERESTED IN BECOMING A SPONSOR?](#)



# GARA 2022 Scientific Meeting

## Travel Awards and Guidelines

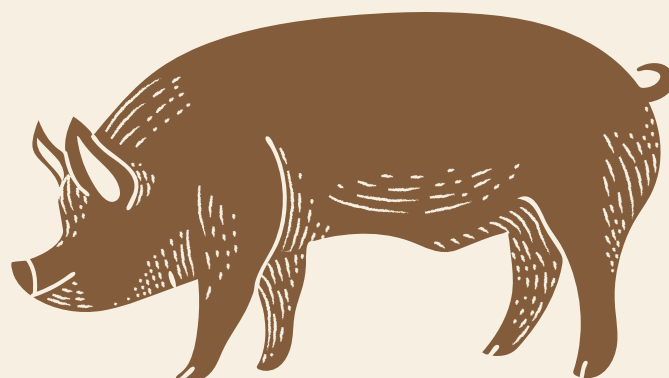
The Global African Swine Fever Research Alliance (GARA) and its sponsors offer Travel Awards to qualified students, early-career investigators, and scientists actively working in African Swine Fever research to attend the 2022 Scientific Meeting. These awards facilitate participation for those who might not otherwise be able to attend. Selected recipients will enhance the overall scientific quality and learning potential of the meeting through their oral and poster presentations. Travel Awards will cover the cost of lodging and round-trip travel to the 2022 GARA Scientific Meeting.

### Who is eligible?

- Students and early-career (< 5 years) ASF Scientists from GARA Partner Institutions
- Non-US Citizens from Africa, Asia, and Latin America are strongly encouraged to apply!

### Selection Criteria

Awardees will be selected by the Travel Award Committee based on abstract quality, research results and the relevance of applicant's work to the field of African Swine Fever. Award recipients participate in the meeting through oral or poster presentations. Notifications will be sent in April 2022.



# Travel Awards and Guidelines continued...

## Final Report

Awardees are required to submit a maximum two-page report within 30 days of the Scientific Meeting outlining their meeting experience with respect to learning opportunities and professional development. Reports should be submitted to Ms. Hayley Harman, GARA Secretariat, [hharman@crdfglobal.org](mailto:hharman@crdfglobal.org).

## Application Process and Deadlines

1. Complete the Travel Award Application **by 31 March 2022** – linked [here](#).
2. Submit an abstract for oral or poster presentation – linked [here](#).

***Application deadline: 31 March 2022***

## Award Notification

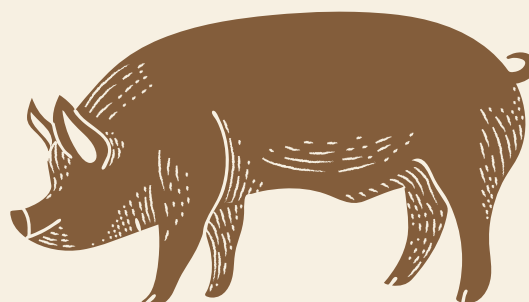
Applicants will be notified of Travel Award decisions in early April. Once notifications are issued, recipients will receive additional information regarding travel to and from the Scientific Meeting. Award recipients are required to participate in the meeting through oral or poster presentations.

## Travel Award recipients will be responsible for:

- Registration (including registration fees) for the GARA 2022 Scientific Meeting
- Securing a passport that is valid for at least six months after the planned return travel date. For most awardees this date will be November 2022.
- Contacting the embassy in their country to arrange for all necessary travel documents (e.g. travel visas)

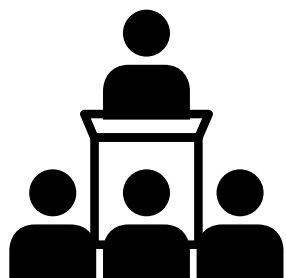
## Information needed to complete the application:

- Applicant's curriculum vitae or resume
- Brief statement explaining why applicant wants to attend the GARA 2022 Scientific Meeting (2,000 character limit)
- Abstract describing the applicant's research
- Travel information, including:
  - City and airport where travel will originate
  - Passport information



# Looking back...

## GARA 2021 Webinars



During the course of 2021 and in light of the pandemic, GARA hosted a number of interesting virtual seminars capturing recent developments in ASF vaccines, comparing various sequencing platforms and honouring Eustace Montgomery and the First 100 Years of ASF Research.

Find below a summary of each webinar and the attendance statistics:

### Current Efforts in African Swine Fever Vaccines: A Virtual Seminar and Discussion

Date of event: 6 May 2021

*The Virtual Seminar on African Swine Fever Vaccines was a joint webinar by the Global African Swine Fever Research Alliance (GARA), the International Alliance for Biological Standardization, and the International Research Consortium on Animal Health (STAR-IDAZ). The Seminar featured keynote speakers from the US, Europe, Africa and China. They discussed recent developments in African Swine Fever Vaccines including licensing, regulation, and commercialization.*

Total participants: 800

Total countries represented: 71







## Troubleshooting Techniques for Full Genome Sequencing of African Swine Fever: A GARA Webinar

Date of event: 30 September 2021

*This seminar discussed the pros and cons of various sequencing platforms for full genomic sequencing of African Swine Fever. It summarized the state-of-the-art technology available and discussed possible directions for future work. The seminar hosted speakers from Hungary, China, the United Kingdom, South Africa, Germany, and the United States.*

Total participants: 270\*

Total countries represented: 46

\*Note: approximately 50 individuals did not list a country.

## Seminar: Honouring Eustace Montgomery and the First 100 Years of ASF Research

Date of event: 8 December 2021

*A virtual seminar to honour Eustace Montgomery and the first one hundred years of African Swine Fever Research was arranged by the Swedish National Veterinary Institute (SVA) and the Swedish University of Agricultural Sciences (SLU) and hosted by GARA in collaboration with the Swedish International Agriculture Network Initiative (SIANI). The main focus of the event was to explore the global ASF situation and give an insight into some of the difficulties in controlling the disease, especially in smallholder farm settings, and from a veterinary as well as a social science perspective.*

Total participants: 623

Total countries represented: 70



Catch up on our webinars [here!](#)

# Ongoing projects:

## Decoding a virus Achilles heel: the African swine fever virus interactome

### Acronym: ASFVINT

#### Consortium:

- ANSES Marie-Frédérique Le Potier (Coordinator)
- The Pirbright Institute (UK)
- INIA Covadonga Alonso (Spain)
- FLI Axel Karger (Germany)
- INRAE Gregory Caignard (France)
- Estonian Tartu University Priit Adler (Estonia)

Funders: ERA-NET ICRAD EU co-funded call on infectious animal diseases

Start date: April 2021- March 2024



A major challenge in the development of strategies to prevent and fight ASFV is the absence of knowledge of the functions of viral proteins and their interactions with host proteins, which is a prerequisite for the rational development of new antiviral strategies, or vaccines. Functional characterization of virus-host protein-protein interactions will be critical to understand how viral proteins target cellular functions to allow viral replication and spread. To achieve this goal, we will use high-throughput systems biology approaches to map interactions between viral and cellular proteins in a systematic way. In this project, six partners from leading research institutes (ANSES, FLI, INIA, INRAE, TPI and UTARTU) will combine their expertise in ASFV and protein-protein interactions to define and validate the first ASFV interactome.

As a starting point, a high-throughput yeast two-hybrid (Y2H) approach will be performed using 80 selected viral proteins encoded by ASFV as baits to screen a cDNA library from domestic pig macrophages, the target cells for ASFV replication. An affinity purification mass spectrometry (AP-MS) method will also be used to extend our functional interactomic strategy in a multiparametric analysis. Data obtained from our laboratories and others have provided evidence that ASFV targets the host interferon and autophagy responses which could play a significant role in ASFV virulence and pathogenesis. Therefore, in parallel to these unbiased proteomic approaches, the function of selected ASFV proteins in IFN and autophagy cellular pathways will be studied using multiple approaches. The most relevant interactions will be validated by co-immunoprecipitation, AP-MS, and NanoLuc assays and characterized in detail by microscale thermophoresis. After confirmation of the physical interactions by biochemical approaches, their biological significance will be independently tested in the context of infection by deleting genes of interacting viral proteins and/or silencing interactors from the host. Using this strategy we will evaluate the potential pro or antiviral functions associated with the interactions identified. We have the unique advantage of the tools and skills from partners within this consortium in the genetic manipulation of ASFV and the benefit of already having a number of gene-deleted ASFV strains available in our laboratories. Such recombinant viruses and strains, in comparison with their corresponding parental/wild type viruses, will be very valuable to study the role of a specific protein interaction in viral replication.

The ASFVint project is designed to identify cellular signalling pathways, functional modules, and machineries that are manipulated by the virus to its own benefit or even are essential for ASFV replication. Knowledge of such pathways would represent a valuable resource for the development of antiviral strategies. Collectively, deciphering virus-host molecular interactions opens new perspectives to predict/simulate future emergences and develop effective countermeasures for disease control, such as novel spectrum anti-infectious compounds and rationally designed ASFV vaccines.

[Visit the website here.](#)

## “A safe DIVA vaccine for African Swine Fever control and eradication”

### Acronym: VACDIVA

#### Consortium:

- Prof. Sánchez-Vizcaíno from Universidad Complutense de Madrid (coordinator)
- ASF Internacional Reference Laboratories: UCM, INIA.
- ASF National Reference Laboratories: SVI, VFL, NFCSO, IZSUM, BIOR, NFVRAI.
- Industrial companies: MSD, INGENASA.
- Research Organizations: IZS, FMV, MPG, WBVR.
- Partners from non-EU countries: ARRIAH, IAS-CAAS, CAHEC, ILRI.
- Farmers: European Coordination Via Campesina (ECVC).
- Management and Dissemination: HORIZCIENCE.



African Swine Fever (ASF) is one of the most important viral diseases affecting swine, with a serious socio-economic impact. It is present in more than 13 countries in Europe (10 in the EU), 28 sub-Saharan African countries, and 2 Asian countries, China and Mongolia. No vaccine is available and recent incursions in Europe and Asia are jeopardizing the pig industry worldwide. Control of ASF is based on early diagnosis and the implementation of strict sanitary measures. However, measures taken by affected countries have not been sufficient to stop spread.

The objective of VACDIVA is to solve the ASF problem in Europe and affected countries through innovation efforts. VACDIVA will provide:

1. Three safe and effective pilot vaccines for wild boar and domestic pigs ready for registration,
2. validated companion DIVA tests and
3. cost-benefit and effective surveillance and control-vaccination strategies, with field trials in Lithuania and Kenya.

Two world leader companies in vaccine production and ASF diagnostic kits will provide production of the new vaccines and DIVA tests. Epidemiological modelling of worldwide scenarios will be offered in a portfolio of services to help animal health authorities control and eradicate the disease. This project will provide policy makers valuable decision support tools to better prevent and control ASF.

VACDIVA counts with the expertise of two world ASF Reference Laboratories (OIE and FAO), the EU reference laboratory (EURL), six EU national Reference Laboratories (of 6 out of the 10 countries currently affected by ASF) and four prestigious ASF research institutions. Participation of Russian, Chinese and African laboratories will provide useful support, increasing acceptance of the vaccines. Active involvement of pig producers, agricultural associations and International agencies like FAO will enlarge the impact of communication, dissemination and training activities.

[Visit the website here.](#)

# “A safe DIVA vaccine for African Swine Fever control and eradication”

## Acronym: VACDIVA

- 2 ASF WORLD REFERENCE LABORATORIES
- 1 INTERNATIONAL HEALTH AUTHORITY
- 3 EU RESEARCH ORGANIZATIONS
- 2 INT. FARMERS & HUNTERS ASSOCIATIONS
- 2 INDUSTRIAL WORLD LEADER COMPANIES
- 7 EUROPEAN UNION ASF NATIONAL REFERENCE LABORATORIES
- 3 NON - EU SCENARIOS LABORATORIES
- 1 COMMUNICATION & RESEARCH MANAGEMENT COMPANY



**SPECIFIC OBJECTIVES**

**3 VACCINE PROTOTYPES**

- / Tested, safe and effective
- / For wild boar and domestic pigs

**DIVA TESTS**

- / Infected vs Vaccinated
- / Monitoring effectiveness

**EPIDEMIOLOGICAL TOOLS & MODELS**

- / Planning control & eradication
- / Different worldwide scenarios



## THE VACCINE

**PRODUCTION**

**MSD**  
Animal Health

The first world company in vaccine production

**INGENASA**

The world leader in ASF diagnosis tests

**OBJETIVE** To develop effective models to transfer and adapt control and eradication strategies **WORLDWIDE**.



## VACCINE PROTOTYPES LIVE ATTENUATED VACCINES (LAVS)

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# Addressing the dual emerging threats of African swine fever and lumpy skin disease in Europe

## Acronym: DEFEND

### Consortium:

- The Pirbright Institute, UK, Dr Pip Beard (coordinator)
- Sciensano, Belgium, Dr Kris De Clercq (co-leader)
- Friedrich-Loeffler-Institut, Germany
- Sveriges lantbruksuniversitet, Sweden
- Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia Romagna, Italy
- Agricultural Research Council, South Africa
- European University Institute, Italy
- Veterinari Senza Frontiere Italia, Italy
- Zoetis Belgium SA, Europe
- ID Vet Sarl, France
- Klifovet AG, Germany
- University of Pretoria, South Africa
- Canadian Food Inspection Agency, Canada
- CSIRO, Australia
- Ministry of Rural Development and Food, Greece
- The Jenner Institute, University of Oxford, UK
- State Food and Veterinary Service, Lithuania
- Azerbaijan Food Safety Agency (Republican Veterinary Laboratory), Azerbaijan
- FGI Federal Centre for Animal Health (FGI ARRIAH), Russia
- The Agricultural University of Tirana, Albania
- Diagnostic Veterinary Laboratory, Montenegro
- Institute for Diagnosis and Animal Health, Romania
- Bulgarian Food Safety Agency, Bulgaria
- Risk Assessment Centre On Food Chain, Bulgaria
- SS. Cyril and Methodius University Skopje, Republic of Macedonia
- Istanbul University - CERRAPASAH, Turkey
- Ministry of Food Agriculture and Livestock, Turkey
- ISPRA, Italy
- Veterinary Specialised Institute Kraljevo, Serbia
- Scientific Veterinary Institute Novi Sad, Serbia

**Run date: 2018-2023**

The DEFEND project 'Addressing the dual emerging threats of African swine fever and lumpy skin disease in Europe' is a large, multi-disciplinary project that is funded by the European Commission's Horizon 2020 research programme and led by Dr Pip Beard from the Pirbright Institute. There are over thirty partners drawn from academia, industry, government and the third sector all working together to answer questions on disease drivers, epidemiology, virology and immunology in relation to two large double-stranded DNA viruses. DEFEND began in 2018 and is funded for five years.

Six of the eleven science work packages in the project have tasks focussed on African swine fever, with two of them having African swine fever as the sole focus. Dr Carola Sauter-Louis from the Friedrich-Loeffler-Institut leads a work package that aims to develop a risk analysis framework for the emergence and spread of disease spread within Europe and apply this to African swine fever and lumpy skin disease. Dr Silvia Bellini's group at Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia Romagna in collaboration with Istituto Superiore per la Protezione e la Ricerca Ambientale and Lithuanian State Food and Veterinary Service are developing practical strategies to prevent the spread of African swine fever within Europe by focusing on biosecurity and risk management practices. Scientists at Veterinarians Without Borders Italy and the European University Institute co-headed by Dr Giorgia Angeloni and Dr Michele Nori are focussed on the role of human and animal migration and trade routes, particularly in insecure areas, in the spread of animal diseases. Dr Steven Van Borm at Sciensano is leading a phylogenetic analysis of both viruses based on full genome sequencing of isolates obtained from partners within the project. The search for the elusive African swine fever vaccine is the subject of the work package led by Dr Chris Netherton at the Pirbright Institute. This research concentrates on adenovirus vectored T-cell antigens. Finally Professor Dirk Jan De Konig at the Swedish University of Agricultural Sciences leads a work package that includes research on the genetic contribution of the host to the outcome of African swine fever vaccination.

[Visit the website here.](#)



# Unraveling the Effect of Contact Networks & Socio-Economic Factors in the Emergence of Infectious Diseases at the Wild-Domestic Interface

## Acronym: ASF NIFNAF

### Consortium:

- Beatriz Martínez López (Principal Investigator), University of California, Davis (UCD), USA
- Eric Etter (Co-Principal Investigator), CIRAD, France
- University of Pretoria, South Africa
- Universidade Eduardo Mondlane, Mozambique
- Universidad Complutense Madrid, Spain
- Agricultural Research Council, South Africa
- National Center for Applied Research on Rural Development (FOFIFA), Madagascar
- Institute of Agrarian Research of Mozambique (IIAM)

A project supported by the NSF-USDA-NIH Ecology and Evolution of Infectious Disease (EEID) program Award #: 2019-67015-28981 is contributing to a better understanding of the emergence and complex transmission pathways of transboundary animal diseases (TADs) at the wildlife-domestic livestock interface. Specifically, the project focus on the transmission of African Swine Fever (ASF) in several countries of the Southern African Development Community (SADC), which is the region with higher ASF viral diversity and where ASF is believed to have originated and spread to Europe in 2007, contributing to the current global ASF pandemic situation we have today. Their approach is based on intensive field data collection (i.e. wild and domestic pigs and tick sampling, camera traps and surveys conducted in seven study areas of representative SADC countries: Madagascar, South African and Mozambique) and on experimental studies (i.e., ticks competence and variability due to extrinsic and intrinsic factors such as temperature, humidity or tick microbiome).

“We believe that this interdisciplinary, multi-institution, research project represents a substantive advance in scope by integrating many scales of research and by linking both ecological and socioeconomic factors influencing disease emergence and transmission and providing a modeling framework and generalizable principles useful for the study of the emergence, prevention and control of many other TADs at a local, continental and global scale” said Dr. Beatriz Martínez López, Professor at the UC Davis School of Veterinary Medicine and Principal Investigator of the project.

Key activities of the project are:

- Assess the pig contact networks within the region
- Collect data on pig management and socio-economic factors characterizing local swine producers
- Explore tick involvement in ASFV transmission
- Assess ASF seroprevalence and viral diversity in the sylvatic and domestic cycles
- Model ASFV transmission dynamics, economic impact and risk of introduction into free areas in different eco-epidemiological settings using multi-scale simulation models
- Integrate genomic-to-population level data and modeling methods into a comprehensive, open-access, user-friendly, long-term, analytical platform referred to as ASF-BioPortal to facilitate the analysis and visualization of pig contact networks and ASF-related data.

“The project outcomes (better knowledge of factors contributing to disease emergence and transmission dynamics and new modeling, visualization, educational and technology transfer tools) will be directly used by veterinary and public health services in the SADC region and beyond to inform the development of more cost-effective preventive and control programs for ASF and other TADs, including those with zoonotic potential, which will lead to a huge positive translational impact in both animal and public health”, said Martínez López.

[Visit the website here.](#)

# African Swine Fever pathogenesis and immune responses in Resistant And Susceptible Hosts

## Acronym: ASF RASH

Consortium:

- Friedrich-Loeffler-Institut (Coordinator), Germany
- Statens Serum Institut, Denmark
- Institute of Virology and Immunology, Switzerland
- Wageningen Bioveterinary Research, Netherlands
- Ghent University, Belgium
- Sciensano, Belgium

Run date: March 2021-February 2024

This consortium will comparatively investigate the pathogenesis of African Swine Fever (ASF) in susceptible and resistant host species. Furthermore correlates of immune responses associated with the favourable or lethal outcome of the disease will be defined. This will include the issues of long-term protection, protection via maternal antibodies, alternative routes of transmission, evolution on the part of the pathogen, and dose dependencies.

The main objectives of this project are to:

- Define host/cellular susceptibility and protection to ASF.
- Explain occurrences of higher seroprevalence rates or resistance of ASF.
- Address the impact of maternal immunity on the outcome of disease through the use of a suckling piglet model.
- Address the possibility of ASF reactivation after surviving ASF infection.
- Investigate the presence of virus in semen and vertical transmission.
- Examine evolutionary pressure on the viral genome by host immune response.
- Investigate aspects of cellular susceptibility in macrophage subpopulations using complementary in vivo and in vitro approaches.

Throughout this project, knowledge, expertise and reagents will be combined across six international teams to address gaps in our understanding regarding ASFV host interactions and the mechanisms of protective immunity. This will allow for the revelation of mechanisms of higher resistance, immunity and alternative transmission pathways as virus-host interactions at an animal and cellular level will be investigated.

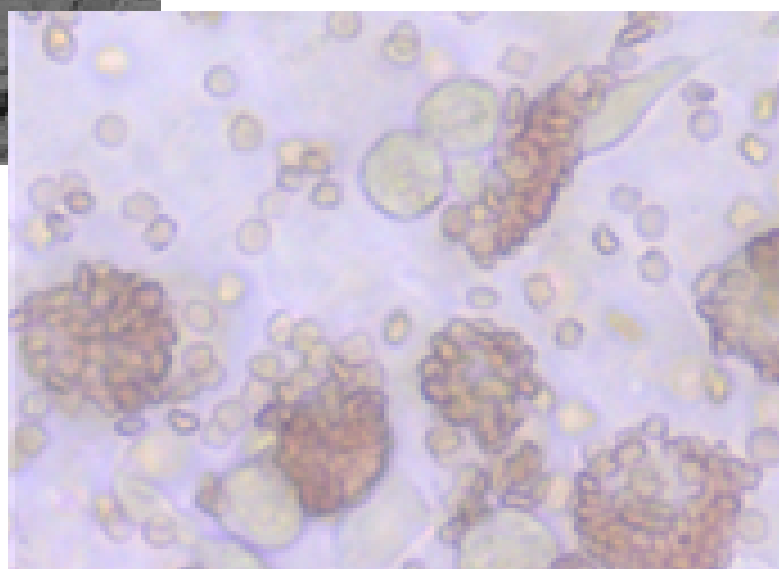
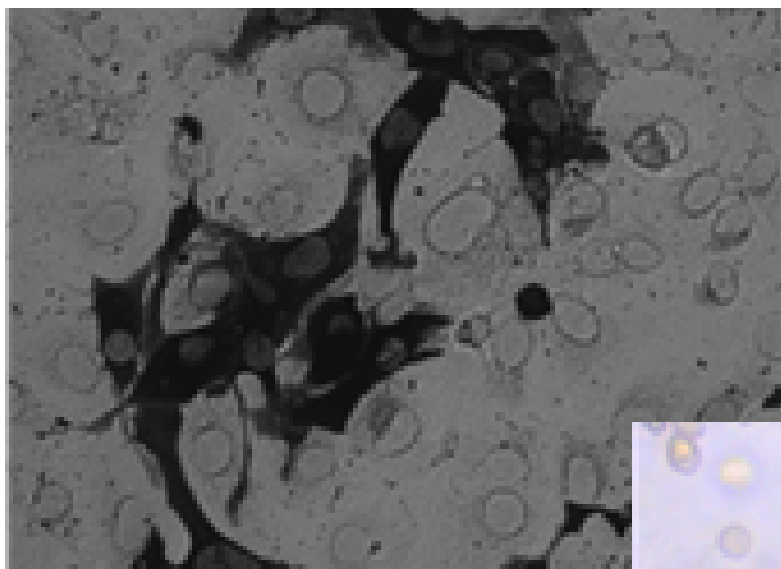


Keep up to date with ongoing ASF projects [here!](#)

# Filling the GAPS:

## Identification of a cell line for ASFV Diagnostics

Detection of live African swine fever virus (ASFV) has historically relied on the use of primary swine macrophages (PSM). PSM do not replicate and have to be isolated fresh from donor swine. Plum Island Animal Disease Center has identified MA-104 (ATCC# CRL-2378.1), a commercially available cell line isolated from African green monkey cells (*Cercopithecus aethiops*) kidney epithelial cells, supports the detection of ASFV from field samples with a sensitivity comparable to that of primary swine macrophages. MA-104 could thus be used as substitute for primary swine macrophages to save significant lead time by avoiding the production of primary swine macrophages. Which require collection of swine blood or lungs, which is often not readily available in most veterinary diagnostic laboratories. Information on this discovery was recently published: [Viruses. 2020 Jul 28;12\(8\):820.](#)



[A detailed protocol](#) for use of Ma104 cells was published on March 20, 2021 in Bio-Protocol.



## Commercializing ASFV-G-Δ177L a safe and effective vaccine for African Swine Fever”



Collaboration:

- Plum Island Animal Disease Center; USDA, ARS, USA
- Navetco, Vietnam

The partnership between Plum Island Animal Disease Center and NAVETCO to commercialize the first ASFV Live-attenuated Vaccine intends to fully commercialize both the USDA discovery of the live-attenuated vaccine ASFV-G-Δ177L and the cell culture adapted vaccine ASFV-G-Δ177L LVR. Both vaccines are able to provide full protection to the Pandemic strain of ASFV. The Technology to produce both vaccines has been successfully transferred to the National Veterinary Joint Stock Company NAVETCO. Several advances have been made that are necessary for ASFV ASFV-G-Δ177L commercialization.

### Completed tasks for the commercial development of the ASFV-G-Δ177L Vaccine

- Transfer of technology to grow the vaccine in primary cell cultures
- Large scale growth in primary cell cultures achieved
- Full protection achieved in both European and Vietnamese breeds of pigs
- Reversion to virulence has been completed successfully
- Vaccine has completed field trials both in North and South Vietnam with success.

### Next Steps:

- Awaiting emergency use approval for Vietnam for ASFV-G-Δ177L
- Currently we are in the process for the second generation Live-attenuated Vaccine ASFV-G-Δ177L LVR Vaccine.
- ASFV-G-Δ177L LVR vaccine grows in PIPEC (Plum Island Porcine Epithelial cell cultures)
- Transfer of technology to grow the vaccine in PIPEC cells
- Large scale growth in primary cell cultures achieved



### Awards Received

- 2021 Federal Laboratory Consortium Technology Transfer Northeast Area Award
- 2022 Federal Laboratory Consortium Technology Transfer National award



### Peer Reviewed Publications

- Hanh TX, Phuong LT, Huy NQ, Thuy DT, Dung NV, Gay CG, Borca MV, Gladue DP. African swine fever virus vaccine candidate ASFV-G- $\Delta$ I177L efficiently protects European and native pig breeds against circulating Vietnamese field strain. *Transboundary and Emerging Diseases* Sep 28. doi: 10.1111/tbed.14329 Online ahead of print
- Borca MV, Rai A, Ramirez-Medina E, Silva E, Velazquez-Salinas L, Vuono E, Pruitt S, Espinoza N, Gladue DP. (2021) A Cell Culture-Adapted Vaccine Virus against the Current African Swine Fever Virus Pandemic Strain. *J Virol.* Jun 24;95(14):e0012321
- Borca MV, Ramirez E, Siva E, Vuono E, Rai A, Pruitt S, Holinka LG, Velazquez-Salinas L, Zhu J, Gladue DP. (2020) Development of a highly effective African swine fever virus vaccine by deletion of the I177L gene results in sterile immunity against the current epidemic Eurasia strain. *Journal of Virology.* 2020 Mar 17;94(7)
- Borca MV, Ramirez-Medina E, Silva E, Vuono E, Rai A, Pruitt S, Espinoza N, Velazquez-Salinas L, Gay CG, Gladue DP. (2021) ASFV-G- $\Delta$ I177L as an Effective Oral Nasal Vaccine against the Eurasia Strain of Africa Swine Fever. *Viruses.* Apr 27;13(5):765

### Publications on Progress towards DIVA addition to ASFV vaccine

- Ramirez-Medina E, Vuono E, Silva E, Rai A, Valladares A, Pruitt S, Espinoza N, Velazquez-Salinas L, Borca MV, and Gladue DP. Evaluation of the Deletion of MGF110-5L-6L on Swine Virulence from the Pandemic Strain of African Swine Fever Virus and use as a DIVA Marker in Vaccine Candidate ASFV-G- $\Delta$ I177L Under Review
- Velazquez-Salinas L, Ramirez-Medina E, Rai A, Pruitt S, Vuono EA, Espinoza N, Gladue DP, Borca MV. Development Real-Time PCR Assays to Genetically Differentiate Vaccinated Pigs From Infected Pigs With the Eurasian Strain of African Swine Fever Virus. *Front Vet Sci.* 2021 Oct 27;8:768869
- Ramirez-Medina E, Vuono E, Rai A, Pruitt S, Espinoza N, Velazquez-Salinas L, Pina-Pedrero S, Zhu, J, Rodriguez F, Borca MV, Gladue DP. (2021) Deletion of E184L, a putative DIVA target from the pandemic strain of African swine fever virus, produces a reduction in virulence and protection against virulent challenge. *Journal of Virology.* Jan 12;96(1)

### Publications on new determinants of virulence

- Gladue DP, Ramirez-Medina E, Vuono E, Silva E, Rai A, Pruitt S, Espinoza N, Velazquez-Salinas L, Borca MV. (2021) Deletion of A137R gene from the pandemic strain of African swine fever virus is attenuated and offers protection against virulent pandemic virus. *Journal of Virology.* Oct 13;95(21).

### US Patents Related to this project (worldwide patents not listed)

- Douglas P. Gladue & Manuel V. Borca. Development of a novel live attenuated African swine fever vaccine based on the deletion of gene I177L. US Patent No. 11,007,263 (2021)
- Douglas P. Gladue & Manuel V. Borca. Genomic deletion in African swine fever vaccine allowing efficient grow in stable cell lines. Docket No 103-20. U.S. Patent Application Serial No. 17/130,814 (2020)



# Here's what the FAO have been up to...

## Globally

- Find the FAO-OIE [awareness-raising\\_posters\\_on ASF for veterinarians](#) in more languages!
- Find a FAO-OIE factsheet targeting policymakers [here](#) and other joint ASF communication tools [here](#).
- The animated video on "[Biosecurity is key to stopping African swine fever: Be a champion farmer!](#)" is available in [Portuguese](#) and more!
- Find the manual on Conducting After Action Reviews for animal health emergencies [here](#).
- Find the manual on Developing field epidemiology training for veterinarians - Technical guidelines and core competencies [here](#).
- FAO released the new [Global Animal Disease Information System - EMPRES-i +](#)

## In Africa

The FAO online ASF course that ended on 7 October 2021 has been accredited by the South African Veterinary Council for continuous professional development (CPD). The 4-week course has been completed by 241/320 veterinarians and vet paraprofessionals from 15/16 Southern African countries. [Find the article here.](#)

The course has also been translated to Portuguese and will be delivered in Mozambique and Angola when funds become available.

## In Europe

- The [18th meeting of the Standing Group of Experts on ASF \(SGE ASF18\)](#) was held on 23 November 2021. The SGE ASF19 took place on 23 February.
- The Regional Emergency FAO project for ASF preparedness in the Balkans ended in November 2021. [Find the article here.](#)
- The [Carcass management guidelines](#) is now available online in Albanian, Macedonian and more.
- FAO, together with UC Davis researchers published its results of field surveys with pig farmers in North Macedonia and Kosovo: [a Descriptive and Multivariate Analysis of the Pig Sector in North Macedonia and Its Implications for ASF Transmission](#)
- During November-December 2021, FAO trained over 300 Russian-speaking veterinarians on ASF preparedness through its regional Virtual Learning Centre (VLC). [Find the article here.](#)
- FAO has conducted four trainings in Kosovo on detecting and preventing ASF in pig farms for farmers and veterinarians. [Find the article here.](#)
- FAO helped to [adapt and promote the iMammalia App](#) for the early reporting of wild boar carcasses.

# Here's what the FAO have been up to...

## In America

Find the Qualitative risk assessment for ASF spread in America [here](#). This assessment considers six risk pathways of ASF introduction and spread, along with an economic impact assessment and recommendations. It compiles information collected from 35 countries through a questionnaire.

Find the recently launches ASF website for the FAO Regional Office for Latin America and the Caribbean (RLC) [here](#).

## In Asia

- Find fortnightly updates about the ASF situation by country, actions taken (by countries and FAO), recommendations and useful links at the [ASF situation in Asia & Pacific update](#).
- On 3 February 2022, the FAO launched [a project in Lao PDR](#) to strengthen the capacity of veterinarians to control ASF and other high-impact TADs.
- Find the [farm biosecurity poster](#) for preventing spread of ASF online in multiple languages.
- FAO, in collaboration with PHILVET Health Services, piloted a 2-week online training smallholders in Papua New Guinea and Cambodia on the application of FAO ASF practical guidelines.
- On 15 December 2021, FAO and OIE co-organized the **Standing Group of Experts for ASF** (SGE-ASF) for Asia and the Pacific, this event was held online.
- FAO and GDAHP organized **ASF community forum in Cambodia** (Tboung Khmum, Rattanakiri, Takeo, Svay Rieng and Kandal Provinces) from 22 November to 17 December 2021
- On 12 October 2021 through Virtual Learning Centre (VLC), FAO launched the 3-week [ASF virtual training for the Pacific Island Countries](#).
- During September-October, FAO and GDAHP organized **trainings at provincial level in Cambodia on investigation and emergency response** in Kandal, Tboung Khum and Ratanakiri.
- FAO organized a **virtual workshop on the development of ASF tabletop simulation exercises for Asia** on 23 and 30 September 2021.
- FAO supported, in September, **Applied Epidemiology Training and ASF preparedness workshop in the Philippines** (Surigao Del Sur and North Cotabato Provinces) in collaboration with Philvet Health Services.

