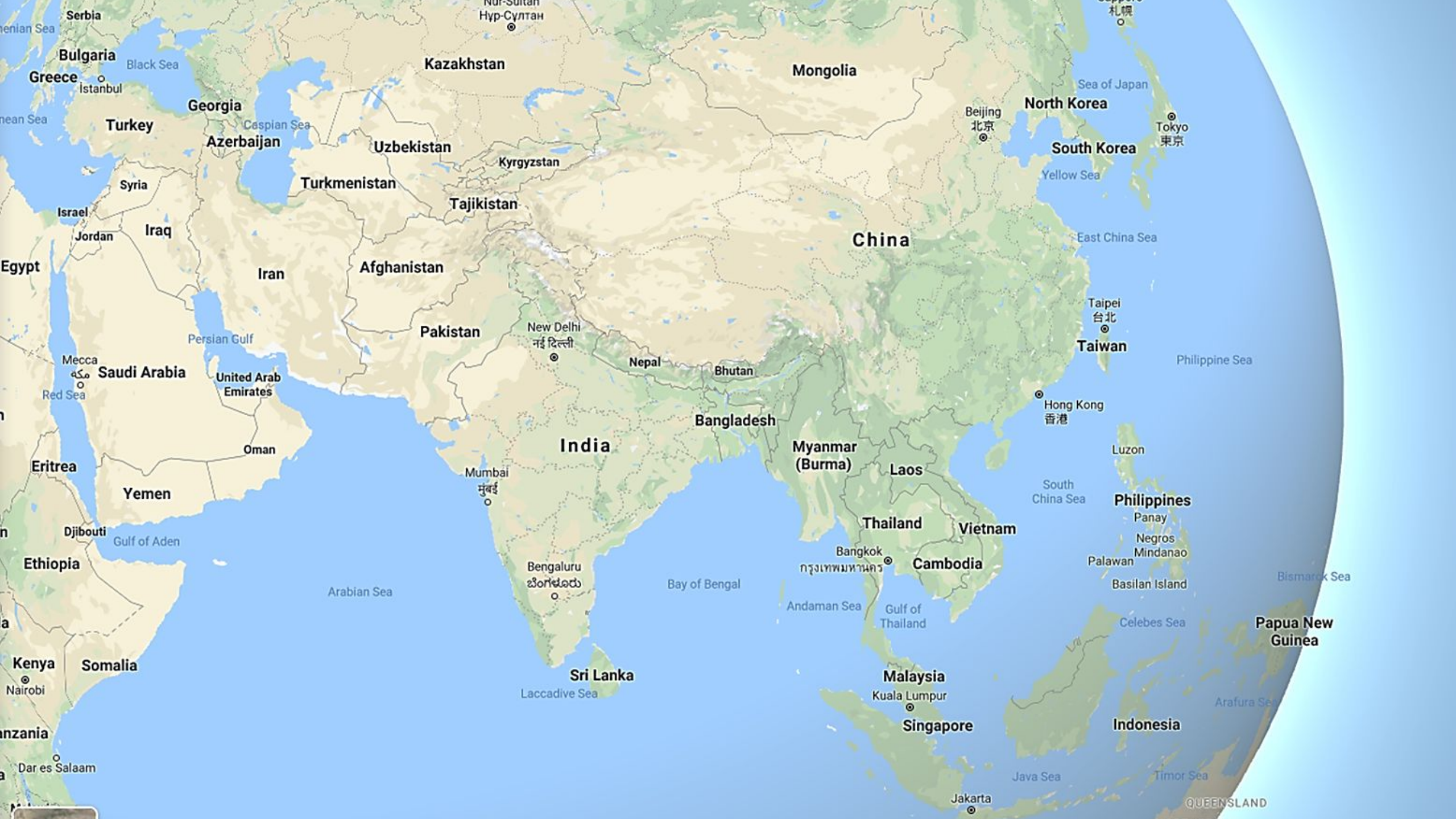
Aitakin Kamarli

National Institute of Animal Health

NARO

April-September 2019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Gulf of Aden
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Singapore
Jakarta
Java Sea
Sea of Japan
North Korea
Beijing
北京
South Korea
Tokyo
東京
Yellow Sea
East China Sea
Taipei
台北
Taiwan
Philippine Sea
Hong Kong
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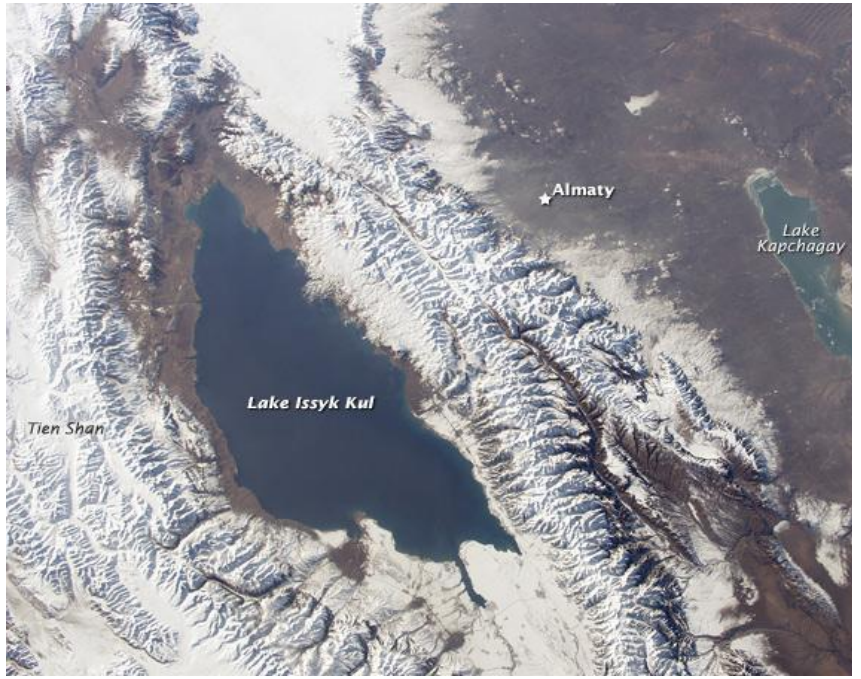


Climate and weather of Kyrgyzstan

The climate of Kyrgyzstan is continental, because Kyrgyzstan is located far from the oceans.

Issyk-Kul is a pearl of Kyrgyzstan

(heads)	2018
Sheep & goats	6,167,949
Poultry	6,009,697
Cattle	812,596
Horses	498,684
Pigs	51,265
Bee colonies	93,892

Livestock industry in Kyrgyzstan

- Population more 6 million
- Main table meats
  - Lamb & mutton
  - Chicken
  - Beef
  - Horse meat
- Main livestock products
  - Dairy
  - Wool and fur
  - Fats and oil
  - Honey

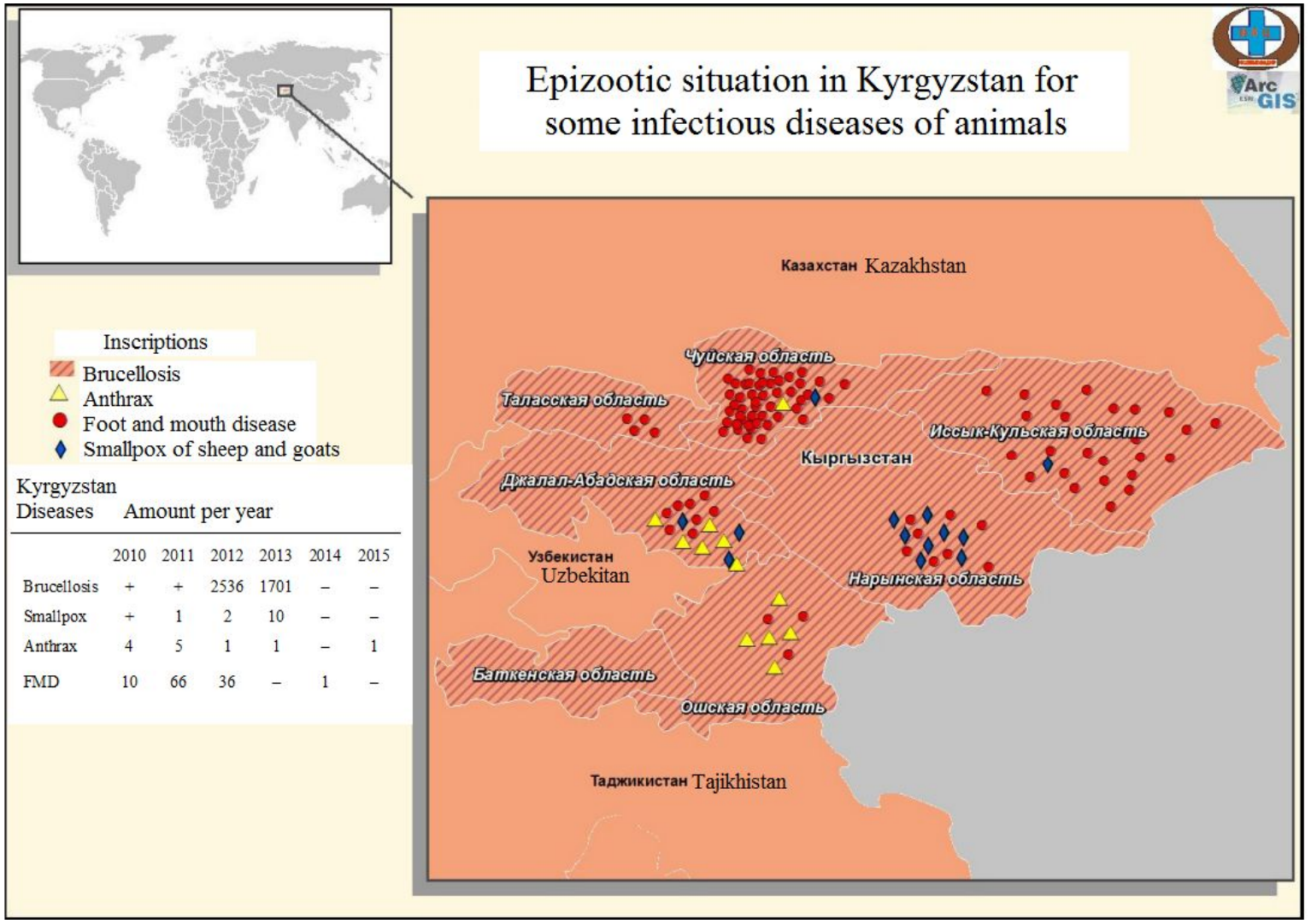
Important diseases in livestocks

- Brucellosis (cattle)
- Anthrax (cattle)
- Foot and mouth disease (cattle)
- Smallpox (small ruminants)

- Rabies mainly in dogs
- Newcastle disease in poultry
- Pasteurellosis
- Leptospirosis
- Salmonellosis
- Chlamydia
- Emphysematous carbuncle in cattle

- <u>Echinococcosis in dogs</u>

In the Kyrgyz Republic there is only one Program for the Eradication for **Echinococcosis**.



Kyrgyzstan
Diseases Amount per year

	2010	2011	2012	2013	2014	2015
Brucellosis	+	+	2536	1701	–	–
Smallpox	+	1	2	10	–	–
Anthrax	4	5	1	1	–	1
FMD	10	66	36	–	1	–

Preliminary Report on the Inspection of Animal Production Enterprises of the Kyrgyz Republic by Experts of the Eurasian Economic Union 2015.02.16.-2015.02. 27.

Problems in securing Animals Health

Laws and regulations

- No regulation to stop movement of diseased animals

Finance

- No compensation for farmers to slaughter diseased animals
- No enough funding for diagnostic services

Laboratory

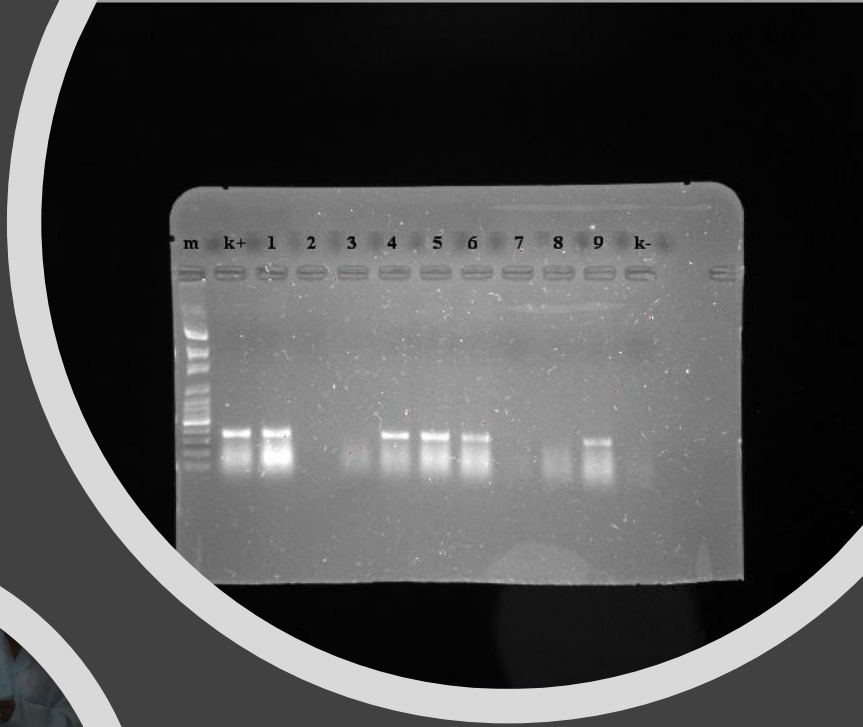
- Few certificated laboratories for diagnosis
- Vets are not qualified for diagnostics skills

Kyrgyz Scientific Research Institute of Veterinary Medicine

- One of the oldest scientific centers for veterinary medicine
- Research Laboratories on
  - Epidemic infectious diseases (FMD, respiratory diseases in cattle etc.)
  - Brucellosis
  - Parasitology
  - Domestic animals (canine parvovirus, canine distemper virus, feline panleukopenia etc.)
  - Virology (cattle, small ruminants, poultry)
  - Bees

My work in Kyrgyzstan

- Monitoring of infectious diseases
- Development and improvement of the specific prevention and treatment of infectious diseases
- Serological and molecular characterization of pathogens to design domestic vaccines and diagnostic products



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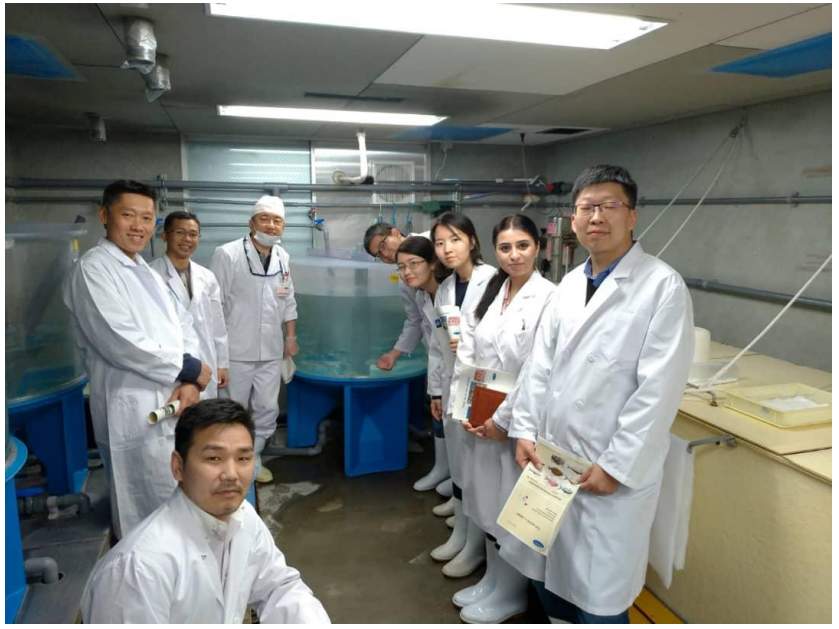
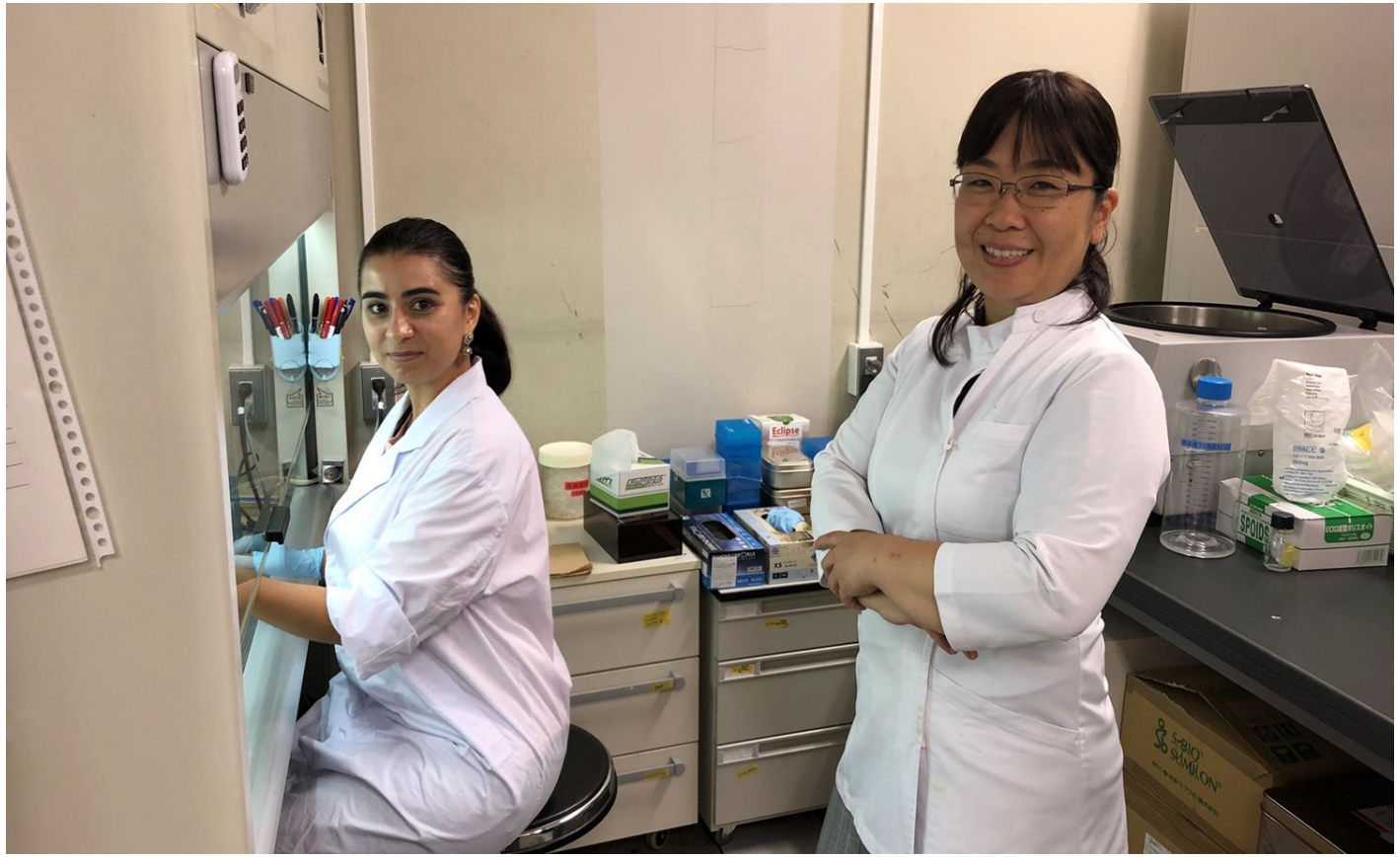
Japan Veterinary Medical Association



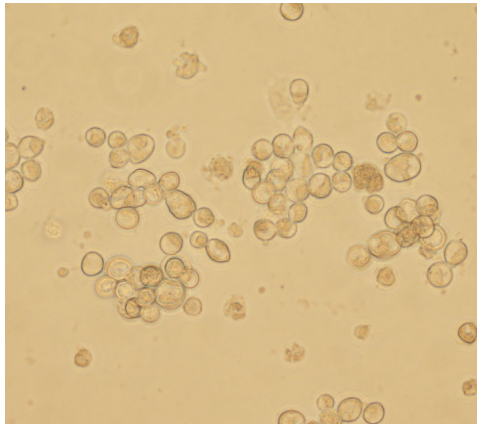


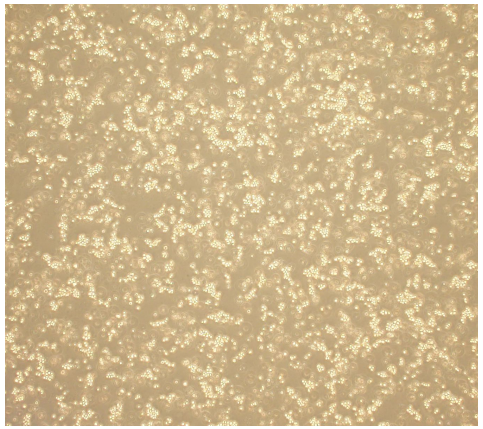
My work in Tsukuba
“Diagnosis of viral diseases in livestock animals”

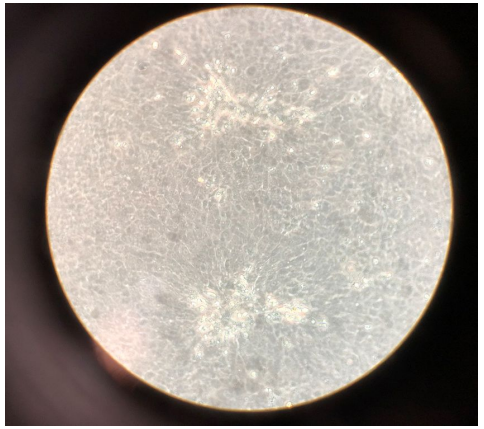
1. Practicing the basic policies and protocols for bio-safety and bio-security at NIAH
2. Learning basics of virology, immunology and molecular epidemiology
3. Acquiring virology skills
4. Acquiring molecular skills
5. Working on preparing scientific presentation and drafting scientific paper

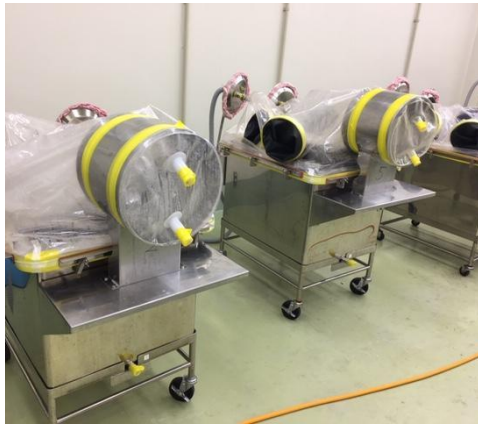
Acquiring new knowledge

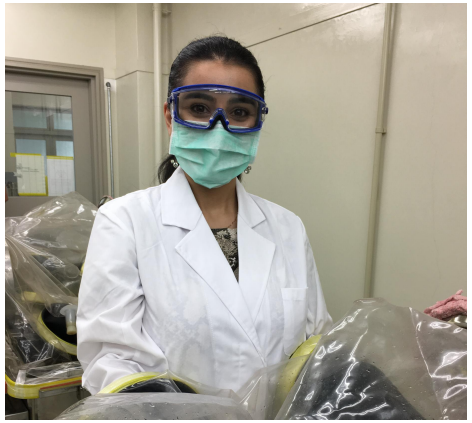
- Learned basic techniques of virology
  - ✔ cell culture
  - ✔ virus propagation and titration
  - ✔ virus neutralization tests
    - Classical swine fever virus,
    - Foot and mouth disease virus in Kodaira
    - Pseudorabies virus
    - Bovine viral diarrhea virus in Tsukuba
- Helped animal experiments using gnotobiotic piglets in NIAH











Molecular characterization of Rabbit Hemorrhagic Disease

Rabbit Hemorrhagic Disease

- highly infectious and often fatal disease of rabbits
- caused by Rabbit Hemorrhagic Disease virus
- high morbidity and mortality (70-90 %)
- Nervous and respiratory signs

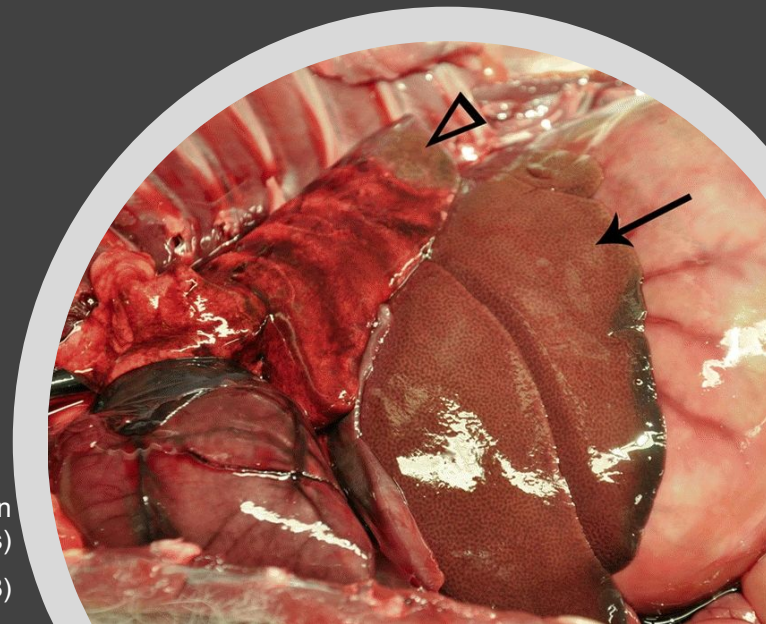
Emergence of highly pathogenic strains since 2010 in Europe and Australia

Two new suspected cases in 2019 in Japan (no outbreak since 2002)

→ Need to characterize the virus to understand whether they are from the past domestic outbreaks in 2002 or introduction of emergent strains from other countries

I have collected data for a molecular epidemiological study

And searched literatures to draft scientific reports



Overcoming species barriers: an outbreak of Lagovirus europaeus GI.2/RHDV2 in an isolated population of mountain hares (Lepus timidus)

BMC Veterinary Research volume 14, Article number: 367 (2018)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Japan Veterinary Medical Association
Thank you Japan Veterinary Medical Association
and
National Institute of Animal Health for this opportunity!
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National Agriculture and Food Research Organization
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ご清聴ありがとうございました
Thank you for your attention!