NSTDA Initiatives for Cooperation with Europe

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Smart Aged-Friendly Cities and Silver Economy
Silver Economy

Silver Economy is a cross-cutting economy that drives 4 new economies

- **Smart People**
- **Smart Industry**
- **Smart Age-Friendly Cities**
- **Innovative Services**
- **Innovative Products**

**Digital Economy**
- Home automation, Digital healthcare platform

**Bio Economy**
- Personalized food, Herbs, Spa and wellness

**Creative and Cultural Economy**
- Furniture, Lifestyle products, Tourism

**Social Economy**
- Social enterprises, Crowdfunding
Research Funding Programs with Europe
Funding Scheme

• **Projects must involve at least 3 partner countries** (either 2 different Southeast Asian partners and 1 European partner or 2 different European partners and 1 Southeast Asian partner)

• follows the principle of a **virtual common pot**

• duration of a **maximum of three years (36 months)**

Participating Countries

• **Total 13 participating countries**

• 5 from South East Asia – Thailand, Lao PDR, Cambodia, The Philippines, Vietnam

• 8 from Europe - Belgium (Wallonia), France, Germany, Poland, Spain, Sweden, Switzerland, Turkey

Deadline for proposal submission: 30 June 2017

Currently in the selection process
Thematic areas

1) Health, with preference:
   • Sub-topic 1: Anti-microbial drug resistance (new drug candidates (preclinical), Diagnostics, Transmission, antibiotic use and resistance in livestock, Surveillance)
   • Sub-topic 2: Emerging infectious diseases (New drug and vaccine candidates (preclinical), diagnostics, epidemiology, public health preparedness)

2) Climate Change/Environment, with preference:
   • Sub-topic 1: Adaptation/Resilience of food production systems (including varietal improvement of (plantation) crops)
   • Sub-topic 2: Impacts of Climate Change on Ecosystems/Biodiversity (including analysis of diversity-stability relationships and ecosystems productivity)
UK Newton – Thailand Research and Innovation Partnership Fund now a £735 million fund

Three broad activities:

People: increasing capacity for science and innovation in partner countries.

Research: research collaborations on development topics.

Translation: creating collaborative solutions to development challenges and strengthening innovation systems.

capacity for science and innovation
1) UK-Thailand Joint Initiative on infectious Diseases and Non-Communicable Diseases

**NSTDA/MRC: Infectious Diseases**
- Antimicrobial Resistance (AMR) especially multidrug-resistant tuberculosis (MDR-TB)
- Emerging infectious diseases especially leishmaniasis and influenza
- Measles
- Mosquito Borne diseases

**TRF/MRC: Non-communicable diseases**
- Cardiovascular diseases
- Diabetes Mellitus
- Osteoporosis
- Metabolic Syndrome
2) UK – China – Philippines – Thailand Swine and Poultry Research Initiative

Host pathogen interactions

• Understanding the pathogen in the context of the pathogenesis of the disease in poultry and swine
• Understanding the genetic basis of host resistance in pigs and poultry
• Understanding the pathogen interactions with swine and poultry based food
• The role of the microbiome and nutrition in controlling pathogens and maintaining health
• Research on the evolution of pathogens

Microbiology

• Understanding the survival of pathogens, on farm and in the food chain
• Transmission mechanisms between host species including transmission dynamics and biological factors affecting transmission
• The molecular mechanisms determining the pathogenicity of pathogens
Epidemiology

- The biological effects of swine and poultry management and welfare on disease epidemiology (prevalence, pathogenicity and transmission), including mathematical modelling

Disease management and control

- Diagnostics for pathogens, especially rapid on farm, or food associated diagnostics; and other biological tools and technologies
- Novel alternatives for pathogen control, including immune stimulation
- Novel agents for pathogen control, including anti-microbials, therapeutics and vaccines, in host and within the food chain
NSTDA International Collaborations
NSTDA International Collaborations

**Europe**: EU-FP7, UK-Thailand Partners in Science, Thai-German Mobility Scheme, BMBF, Fraunhofer-Gesellschaft, Fraunhofer-ISE, Fraunhofer-IFF, University of Magdeburg, Karlsruhe Institute of Technology, Imperial College London, University of Zurich, CNRS, CIRAD, Institut National Polytechnique de Toulouse (INPT), Universite de Bourgogne, The Franco - Thai Scholarship program, Ecole Polytechnique, DESY, Lindau, CERN, K.U. Leuven, IMEC, etc.


**Latin America**: Brazil, Argentina

**Middle-east**: Technion – Israel Institute of Technology, Ben-Gurion University of the Negev (BGU), Israel

**China**: CAS, GUCAS, Xiamen University, SAAS, KIB, SSRC, Sino – Thai Scientific and Technical Cooperation, Sichuan Academy of Agricultural Science (SAAS)

**Japan**: AIST, RIKEN, JICA, JST, e-ASIA, JAXA, JETRO, METI, MEXT, NUT, NIMS, NISTEP, NEDO, Tokyo Tech, Hiroshima U., Toyota, Shiseido, Shimadzu, Ube, Denso, ATPIJ, YU, Yamagata Univ., etc.

**Korea**: KIRBB, KRISS, STEPI, Korea Science Foundation

**Taiwan**: ITRI

**ASEAN**: ASEAN COST, SIRIM, MIGHT, LIRE, VAST, NISTPASS, A*STAR, Singapore Polytechnic, CEBU Technological University

**Australia**: QUT, U. of Queensland, Australasian Corrosion Association

**Middle-east**: Technion – Israel Institute of Technology, Ben-Gurion University of the Negev (BGU), Israel

**Europe**: EU-FP7, UK-Thailand Partners in Science, Thai-German Mobility Scheme, BMBF, Fraunhofer-Gesellschaft, Fraunhofer-ISE, Fraunhofer-IFF, University of Magdeburg, Karlsruhe Institute of Technology, Imperial College London, University of Zurich, CNRS, CIRAD, Institut National Polytechnique de Toulouse (INPT), Universite de Bourgogne, The Franco - Thai Scholarship program, Ecole Polytechnique, DESY, Lindau, CERN, K.U. Leuven, IMEC, etc.


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Type of International Collaboration in S&T

- Bilateral/Multilateral Collaborations
- Joint Research
- Consortium
- Collaborative Workshop/Training Programmes
- Researcher Mobility Scheme
- Co-Funding Cooperation Program
- Etc.
10 targeted industries with investment privileges

- 5 existing industries (First 5 S-Curves)
  - Next-Generation Automotive
  - Smart Electronics
  - Affluent, Medical and Wellness Tourism
  - Agriculture and Biotechnology
  - Food for the future

- 5 new industries (New 5 S-Curves)
  - Robotics
  - Aviation and Logistics
  - Biofuels and Biochemicals
  - Digital
  - Medical hub
NSTDA’s Cluster and Program Management (Health & Medical Cluster) 2017 - 2021
Objective
Technology, medical products and services for people's health. To optimize the use of the public health budget. And prepare for the health security of the country.
Program: Emerging Infectious Diseases

**Objective**
Knowledge & Know-how and products that solve problems and respond to cope with emerging and recurrent problems.

- **WIG 1**: Dengue vaccine tested in humans by year 2021
- **WIG 2**: IVIG is effective and safe for treating severe EV71 infections.

- Dengue vaccine
- IVIG for EV71
- Antimalarial drug development
- TB/Zika/Influenza/Leishmania
- EID Lab Network

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Program: Biotechnology Health Care for the People

Objective
Using genetic information in conjunction with clinical data for the creation of technology or Knowledge for diagnosis Prognosis in the early stages. Health care Precise treatment for major public health problems.

WIG 1: Protein / mRNA assay / assay
To diagnose or diagnose kidney disease at an early stage. Causes of lupus and diabetes within 2021

WIG 2: Get Data of safety of gene editing in erythrocyte stem cells. For the treatment of blood diseases (WAS, thalassemia) By the year 2021

WIG 3: Get lead antibody ready for pre-clinical testing by 2021.
Program: Digital Technology and Medical Equipment

Objective
Digital technology for the health of people throughout the life and health care equipment for the people.

WIG 1: Deliver a healthcare data collection platform that tested security and exchange of data with other connected applications by 2021.

WIG 2: Deliver Medical Device for the Disabled and Elderly At least 3 prototype production technologies will be transferred to the private sector by the year 2021.

- Hearing aids
- Mobility aids and bone / tooth replacement materials

WIG 3: Tele-Healthcare & IoT
* Tele-Healthcare & IoT results in at least 1 emergency medical service within 2064.
* The device sends vital signs such as heart rate, pressure, etc.
Eastern Economic Corridor (EEC) and Eastern Economic Corridor of Innovation (EECi)

Infrastructure

Business, Industrial clusters and Innovation hub

Tourism

New cities and communities
EECi Strategic Partners

Thai Research Institutes

University 4.0

Companies

Foreign Research Institutes

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Thank you

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