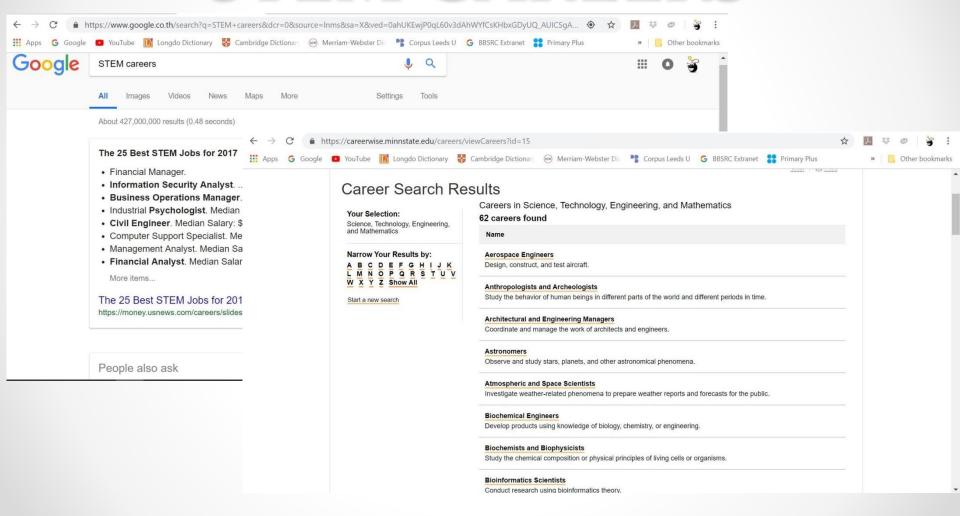
# STEM CAREERS

**OVERVIEW** 

## STEM CAREERS



## STEM INDUSTRIES



Civil Engineering



Electronic engineering



Environmental engineering



Industrial engineering



mechanical engineering



Systems engineering



Health



Computer Science



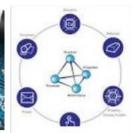
Computer Software



Robotics



Electronics



Materials Science



Research



Summer camp

## STEM INDUSTRIES (cont.)









## Technical Service in Thailand

Assessment and certification of regulations or standards requirements

- Assessment & certification process: ISO 90
- •Laws & regulations compliance support
- •Environmental Impact Assessment
- •Health Impact Assessment

Product design

- •Eco design
- •Industrial design: Packaging
- •Industrial design: Product features
- Graphic design: Labelling & logo

Design and improvement of production technology

- Product design: Machinery & parts
- Product design: Automation

Operations efficiency

- Efficiency improvement: Production process
- Quality (Process) Management
- •Manufacturing process specialization

Energy efficiency

- Efficiency improvement: Energy
- •Energy management / ISO 50001
- Selection and Implementation of alternative energy
- •Selection and Implementation of clean technology

Waste treatment solutions

- Selection and Implementation of waste treat ment systems
- Waste management solutions
- Environmental management

Organization development

- •Corporate Social Res ponsibility / ISO 26000
- •Integrated management consulting: TQM. TPM, TQA
- •Safety management
- Workplace improvement
- Workforce development

Others

- Green-field setup: plant design & construction
- Laboratory services
- ERP Software implementation
- Networking with government services
- Plant services provider: maintenance



### **Energy Efficiency in SMEs Project**



### Goal



### **Outcomes**



Users of **Outputs** 



### **Outputs**



Activities

### Reduction of climate affecting emissions through improvement of energy efficiency in Thai SMEs

- Improvement of energy efficiency and environmental performance in Thai SMEs with focus on medium sized enterprises in 5 selected sectors: glass, ferrous, aluminium, textile, canned food.
- · Improvement of personnel and organizational capacities of facilities responsible for (i) implementation of relevant energy and environment policies, and (ii) consulting or training for relevant energy and environment sectors

**SMEs and Pilot Plants** (owners, managing and technical directors, engineers, operators)

Government offices responsible for permitting and inspection (DIW and Provincial Industrial Offices)

Policy determining and implementing agencies (Mol & other Line Ministries)

**Technical and Engineering** Service Providers: consulting and training

Industrial Associations / Institutes

Academic (Universities, Technical Institutes)

Journalists - Media

#### Component 1

Sector specific guideline on improving energy efficiency and environmental performance for Thai SMEs have been developed

#### Component 2

Capacity Building programs on improving the energy efficiency and environmental performance have been developed

- Review EU BAT sources Conduct baseline study
- · Visit factories, survey current situation, provide ad-hoc advice
- Arrange workshops on integrated approach and tool for improving energy efficiency and environmental performance
- Support pilot plants, provide recommendations for increasing energy efficiency, environmental performance and safety conditions
- Study visits to Germany

- Develop training curriculum for improving energy efficiency. environmental performance, safety conditions
- Conduct training curriculum for improving energy efficiency, environmental performance, safety conditions
- Support implementation of suitable measures and programs in Thai SMEs

### Component 3

Network on Energy Efficiency Promotion and Services has been designed and established

 Survey & investigation of energy-relevant advisory services and promotional

components for Thai SMEs

- Identify the potential areas and suitable cooperating mechanism on synergizing the different efforts on energy efficiency promotion and services
- Establish the energy efficiency network (EENet)
- Acquisition of the potential cooperation in Thai and German institutions, organizations and model plants

### Component 4

Recommendations on permission and inspection procedures have been provided

- · Present relevant existing international systems on pollution prevention, promotion programs and advisory service
- · Provide recommendations for permitting & inspection, develop and disseminate concept for integrated pollution prevention and control
- Conduct experience exchange between Thai & German Administration and entrepreneurs



## S & I in Diplomacy

- The Science and Innovation Network (SIN) has approximately 90 officers in over 30 countries and territories around the world building partnerships and collaborations on science and innovation.
- SIN officers work with the local science and innovation community in support of UK policy overseas, leading to mutual benefits to the UK and the host country.



## S & I in Diplomacy

### What SIN does

- SIN teams develop country-specific action plans and work to the following global objectives:
- Prosperity enhancing UK growth and exports; connecting innovative UK industries and scientific expertise with international opportunities
- Security delivering solutions to global challenges such as anti-microbial resistance (AMR), health, energy, the conservation and sustainable use of oceans, and enhancing resilience to natural disasters
- Influence strengthening the UK's foreign policy influence through science and innovation
- Development supporting international development goals and matching UK expertise to international need



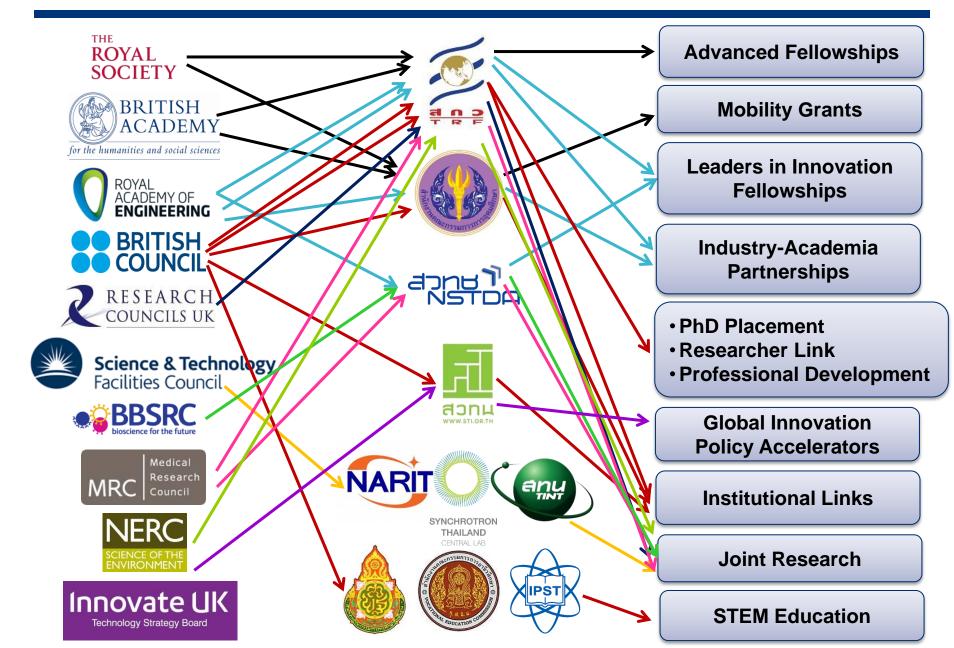
## S & I in Diplomacy

## series of thematic programmes:

- Health and Life Sciences
- Clean Energy
- Food and Agriculture
- Future Manufacturing
- Cyber and Information Communications Technology (ICT)
- Quantum Technology
- Future Cities
- Resources and resilience
- Polar Regions
- Space
- Oceans

## In-Country Coordination / Facilitation





## **Newton Programmes in THAILAND**



### **PEOPLE**

- STEM Education
- PhD Placement: PhD. Scholar and Travel Grant for PhD. Supervisor
- Mobility Grants
- Advanced Fellowships
- Professional Development:
  Mid-Career Researchers and
  Project Officers
- Researcher Links: Workshop Grant and Travel Grant

#### RESEARCH

- Skills in Data Analysis and Advanced Engineering through Astronomy
- Exploiting Synchrotrons for Industry and Societal Needs
- Skills for Using Large Facilities: Synchrotrons Source, Neutron Source and High Power Laser
- **UK-TH Health Research:** *Infectious Diseases and Non-Communicable Diseases*
- UK-China-PH-VN-TH Rice Research
- UK-China-PH-TH Swine and Poultry Initiative
- Atmospheric Pollution and Human Health
- Energy Food Water –
  Environment Nexus
- Increasing Resilience to Hydrometeorological Hazards

### **TRANSLATION**

- Industrial-Academia Partnerships
- Leader in Innovation Fellowships
- Global Innovation Policy Accelerators
- Institutional Links

# S & I in Diplomacy: CSA

Most government departments have a Chief Scientific Adviser (CSA) to provide scientific advice. Presently there is 26 CSAs

## Role

- The network advise the Government Chief Scientific Adviser on all aspects of policy on science and technology. In particular, they:
- provide advice to ministers, through the Cabinet committee system
- discuss and facilitate implementation of policy on science, technology, engineering and mathematics (STEM)
- identify and share good practice in STEM-related areas, including the use of scientific advice in policy making
- facilitate communication on particular high profile STEMrelated issues and those posing new challenges for government

# S & I in Diplomacy: CSA

## FCO Chief Scientific Adviser: Professor Carole Mundell



She is Professor of Extragalactic Astronomy, Head of Astrophysics at the University of Bath and a Fellow of the Institute of Physics.

### Her career highlights include:

- Royal Society Wolfson Research Merit Award (2011 to 2016) for the study of black hole-driven explosions and the dynamic Universe
- FDM Everywoman in Technology Woman of the Year (2016)
- Science and Technology Facilities Council (STFC) Board Member and STFC Skills and Engagement Advisory Board Chair (2015)

# THANK YOU