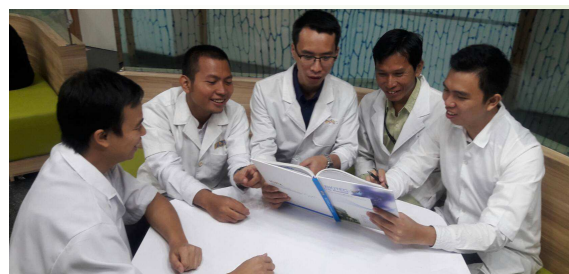


Call for Applications

Human Resource Development Program in Biotechnology 2017



The National Center for Genetic Engineering and Biotechnology (BIOTEC) invites research scientists from developing countries in ASEAN to participate in the Human Resource Development Program in Biotechnology for year 2017. The Program aims to build up R&D capability for developing countries as well as to foster the research network among countries in this region. The Program places importance on improving research skill, thus it is designed to be an on-the-job and research-based training in the BIOTEC's laboratories. **Two types of training will be on offer: fundamental courses (3 months) and advanced courses (6 months).** The training course consists of classroom session, designing and conducting a mini research project and site visit to factories or project sites. A total of 12 fellowships will be provided.

Eligibility

- 1) Must be scientists currently being employed in either a public or private academic institute, OR a governmental research organization in the list of eligible countries. Some courses are only open to specific countries, so please check the detail in the available course section.
- 2) Must hold at least a **Bachelor's degree in sciences for application to a fundamental course** or at least a **Master's degree in sciences for application to an advanced course**. All applicants must have finished course work in biology, microbiology or any related areas that will be required for particular training topics.
- 3) Must have good command in English.
- 4) Must be able to attend the course, during;
 - 4.1) Fundamental course: October 2 – December 29, 2017
 - 4.2) Advanced course: October 2, 2017 – March 30, 2018
- 5) Must not be older than 32 years of age as of October 1, 2017.
- 6) Since the training is research-based and trainees will be working in the laboratories, applicants must show on his/her application form that his/her current job involves research, not administrative work.
- 7) Each selected grant recipient will be assigned to **ONE** of the available courses. Applicants will have to identify only **ONE** course on the application form.

List of Eligible Countries

Application is open to developing economies in ASEAN, according to the World Bank data. These countries are Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines and Vietnam

Sponsorship

Selected candidate will be provided with monthly allowance, and accommodation. **The international roundtrip airfare will only be available for the successful applicants from Laos, Myanmar and Cambodia.** However, applicants from those countries who are able to obtain airfare from their own institutes or other funding agencies are strongly encouraged to indicate this fact on the application form.

Available Courses

Course No.	Project title	Course Content
Fundamental Course (3 months)		
F-1*	Phylogenetic relationships and taxonomy of invertebrate-pathogenic fungi in the Hypocreales.	<ul style="list-style-type: none"> Learn how to collect, isolate and identify fungi collected in the forest. Learn basic knowledge on the taxonomy of hypocrealean insect pathogens. Learn how to write descriptions of species and how to collect relevant data for taxonomic publications. Learn how to use the microtome and take photos of important taxonomic features.
F-2	Enhancement of antioxidants and secondary metabolite production of crops and vegetables by controlled and stressed environments.	<ul style="list-style-type: none"> Crops and vegetables under controlled environments Training on determination of plant physiological and biochemical parameters (emphasis on photosynthetic parameters), and starch and sugar analysis Antioxidant and secondary metabolite analysis Experimental design and statistical analysis
F-3	Investigation of antimalarial drug resistance mechanism in <i>Plasmodium</i> parasites.	<ul style="list-style-type: none"> <i>Plasmodium</i> parasite biology Techniques in molecular biology Gene expression analysis Sequencing of drug resistance genes
F-4	Development of bioinsecticide formulations from <i>Bacillus thuringiensis</i> .	<ul style="list-style-type: none"> Produce Vip3A & crystal proteins from <i>Bacillus thuringiensis</i>. Harvest and concentrate protein product. Prepare liquid and dry bioinsecticide formulations. Bioassay against insect larvae
F-5	Development of nanosensor array for diabetes biomarker detection and analyzer.	<ul style="list-style-type: none"> Gas nanosensor Aptasensor Breath biomarkers Screen printed electrode Foodborne pathogen detection
Advanced Course (6 months)		
A-1*	Identification and characterization of biofilm formation inhibitors in plant and/or microbe extracts.	<ul style="list-style-type: none"> Shrimp pathogenic bacterial biofilm culturing Extraction and separation of compounds from plants/microbe Biofilm formation and bioluminescent inhibition testing Shrimp challenge test
A-2*	Synthesis and route optimization of 2, 4 diaminopyrimidine as a scaffold of antimalarial drug.	<ul style="list-style-type: none"> Organic chemistry synthetic design and route optimization Heterocyclic chemistry Spectroscopy techniques for structure determination (NMR, MS)
A-3*	Development of high-throughput genotyping platforms for rice breeding programs.	<ul style="list-style-type: none"> Use bioinformatics approach to identify candidate SNP locations. Develop SNP markers using KASP and/or Taqman probe technologies. Validate and applied markers for genotyping improved varieties and diverse rice germplasms. Marker haplotype-trait association analysis
A-4	Programmable bio-nano-chip for point-of-care diagnostics.	<ul style="list-style-type: none"> Biosensors Paper-based microfluidics Molecular diagnostics Fabrication Nanotechnology
A-5	Identification and characterization of red claw crayfish (<i>Cherax quadricarinatus</i>) pathogens.	<ul style="list-style-type: none"> Transcriptomic analysis of red claw crayfish Nucleic acid extraction and amplification Red claw/shrimp Histology, in situ hybridization
A-6	Biotyping of yeasts and characterization of yeast strains producing fatty acids using MALDI-TOF.	<ul style="list-style-type: none"> Lipid, fatty acid, and protein extraction from various yeast strains Analysis of lipids and fatty acids Biotyping (lipid profiling and protein profiling) of various yeast strains
A-7	Microorganisms as alternative malaria transmission control tools.	<ul style="list-style-type: none"> Mosquito biology and molecular biology Microbiology and aseptic techniques Concepts on malaria transmission control Identification of mosquitocidal and larvicidal compounds from microorganisms Gene expression analysis

***Courses no. F-1, A-1, A-2 and A-3 are open to candidates from Cambodia, Lao PDR and Myanmar only.**

Application Procedure

Each applicant should submit a completed application form along with an English university-transcript, full Curriculum Vitae, certificate of health and copy of passport (if any) in **PDF format** to international@biotec.or.th by **19 June 2017**. Successful candidates will be informed by July 2017. For further inquiries, please contact:

International Cooperation Section c/o Ms. Papawee Nupason

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