



หลักสูตรอายุรศาสตร์เขตร้อนคลินิกมหาบัณฑิต
สาขาวิชากุมารเวชศาสตร์เขตร้อน
(หลักสูตรนานาชาติ)

MASTER OF CLINICAL TROPICAL MEDICINE PROGRAM
IN
TROPICAL PEDIATRICS
(INTERNATIONAL PROGRAM)

DEPARTMENT OF TROPICAL PEDIATRICS
FACULTY OF TROPICAL MEDICINE
AND
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY

REVISED PROGRAM 2018

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**Master of Clinical Tropical Medicine Program in Tropical Pediatrics
(International Program)
Revised Program 2018**

Name of institution Mahidol University
Campus/Faculty/Department Faculty of Tropical Medicine,
 Department of Tropical Pediatrics

Section 1 General Information

1. Curriculum name

(Thai) : หลักสูตรอายุรศาสตร์เขตร้อนคลินิกมหาบัณฑิต
 สาขาวิชากุมารเวชศาสตร์เขตร้อน (หลักสูตรนานาชาติ)
 (English) : Master of Clinical Tropical Medicine Program in Tropical Pediatrics
 (International Program)

2. Name of degree

Full name Thai : อายุรศาสตร์เขตร้อนคลินิกมหาบัณฑิต (กุมารเวชศาสตร์เขตร้อน)
 English : Master of Clinical Tropical Medicine (Tropical Pediatrics)
 Abbreviation Thai : อค.ม. (กุมารเวชศาสตร์เขตร้อน)
 English : M.C.T.M. (Tropical Pediatrics)

3. Major subjects: none

4. Required credits: at least 36 credit

5. Curriculum characteristics

5.1 Curriculum type/model: Master degree program
 5.2 Language: English
 5.3 Recruitment: Thai and international students
 5.4 Cooperation with other universities: Only MU program
 5.5 Degrees offered to the graduates: One degree of one major

6. Curriculum status and curriculum approval

6.1 The program was revised in 2018
 6.2 The program will start: Trimester 1, Academic Year 2018 onwards

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The Mahidol University council has approved the adjusted program on 18 April, 2018

6.3 Curriculum committee approved the program in its meeting 5/2018

On February 22, 2018

6.4 The MU Council approved the program in its meeting 531 on 18 April, 2018

7. Readiness to implement/promote the curriculum

This program curriculum complies with Thai Qualification Framework for Higher Education. It has been approved and implemented since 2013. This revised program will be implemented in 2018 after approval and to be promoted in 2019 (one years after implementation)

8. Opportunities of the graduates

8.1 Tropical pediatric practitioner

8.2 Clinical researcher

9. Name, I.D. Number, title and degree of the person in charge of the curriculum

	ID number Academic position Name -surname	Degree (Field of study), University: Year of graduate	Department
1.	XXXXX XXXXX XX X Associate Professor Kriengsak Limkittikul	Dip. Thai Board of Pediatrics, Thai Medical Council: 1999 Diploma (Virus), Institute of Tropical Medicine, Nagasaki University, Nagasaki, Japan: 2001 D.T.M.&H., Mahidol University: 2006 M.D., Mahidol University:1995	Department of Tropical Pediatrics, Faculty of Tropical Medicine, Mahidol University
2	XXXXX XXXXX XX X Assistant Professor Weerawan Hattasingh	Dip. of Pediatric in Infectious Diseases, Thai Medical Council: 2009 Dip. Thai Board of Pediatrics, Thai Medical Council: 2002 D.T.M.&H., Mahidol University: 2011 M.D., Mahidol University:1996	Department of Tropical Pediatrics, Faculty of Tropical Medicine, Mahidol University
3	XXXXX XXXXX XX X Lecturer Dr. Supawat Chatchen	Ph.D. (molecular genetics and genetic engineering) Mahidol University: 2005 M.Sc. (Medical science), Mahidol	Department of Tropical Pediatrics, Faculty of Tropical

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	ID number Academic position Name -surname	Degree (Field of study), University: Year of graduate	Department
		University: 1999 D.T.M.&H., Mahidol University: 2014 M.D., Mahidol University: 2008	Medicine, Mahidol University

10. Venue to conduct the study

Faculty of Tropical Medicine, Mahidol University

11. External factors to be considered in curriculum planning

11.1 Economic situation/development

Tropical diseases are important global problems particularly in developing tropical countries where 2/3 of the world population are living. Common tropical diseases; malaria, dengue and other parasitic diseases, result in huge DALYs and economic losses. Children have higher risk of disease susceptibility and severity than adults. Moreover, global warming results in changing environment and wider spreading of tropical pathogens and their vectors. These aggravate the burden of tropical diseases. General medical curricula, particularly in developed countries do not focus on tropical diseases. Therefore, most of medical doctors may have inadequate knowledge and experience in diagnosis and management of tropical disease particularly in pediatric patients. This curriculum is therefore designed to enhance the knowledge, experience and skills in tropical pediatrics, including clinical researches.

11.2 Social and Cultural situation/development

Globalization facilitated rapid global traveling and mobilization resulting in disease spreading, especially infectious diseases. As a result, there is an increasing demand for experts in tropical medicine and pediatrics. In addition, it is important that a medical doctor should be able to analyse and criticize data in an era of rapid expansion in medical information via advanced information technology.

12. The effects mentioned in no.11.1 and 11.2 on curriculum development and its relevance to the missions of the university/institute

12.1 Curriculum development

This revised program aims to create graduates with efficient knowledge, experience and skills in tropical pediatrics to meet the global requirement and stakeholder needs, particularly the clinical skills. The graduate should be able to manage general and tropical pediatric cases, particularly in resource-limited countries. The graduate should demonstrate capacity on criticizing data and life long learning.

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12.2 Relevance to the Missions of the University/Institution

As the mission of Mahidol university is “To excel in health, sciences, arts and innovation with integrity for the betterment of Thai society and the benefit of mankind” and of Faculty of Tropical Medicine is “To strive for excellence in research, education, and health services in tropical medicine”, this revised program generates medical doctors specialized in tropical pediatrics who have high capacity on providing health services and medical researches, with integrity of the betterment of mankind.

13. Cooperation with other curricula of the university (if any).

There are 8 subjects (20 credits) co-taught with Diploma in Tropical Medicine and Hygiene Program (DTM&H), Faculty of Tropical Medicine, Mahidol University.

Section 2 Information of the Curriculum

1. Philosophy, justification and objectives of the curriculum

1.1 Philosophy

The graduates from this program will have adequate clinical and research knowledge, as well as skills on tropical pediatrics to apply in clinical practice for the benefit of mankind.

1.2 Objectives of the program:

To produce graduates who have the characteristics, knowledge and skills as follows:

- (1) Perform clinical practice and research in compliance with academic integrity.
- (2) Perform standard clinical practice in general and tropical pediatrics.
- (3) Perform clinical research in tropical pediatrics.
- (4) Formulate professional teamwork in clinical practice and research.
- (5) Retrieve, process, analyze and present data as well as communicate using appropriate technologies.

1.3 Program Learning Outcomes (PLOs)

PLO1: Demonstrate ethical consideration in medical practice.

PLO2: Demonstrate ethical consideration and code of conduct in clinical research.

PLO3: Describe the tropical diseases in important aspects of epidemiology, clinical presentations, diagnosis, treatment, prevention and control.

PLO4: Describe research methodologies and principle of good clinical practice.

PLO5: Formulate the diagnosis and management of tropical pediatrics based on clinical information.

PLO6: Organize clinical research in tropical pediatrics according to international standard.

PLO7: Formulate professional teamwork in clinical practice.

PLO8: Formulate professional teamwork in clinical research.

PLO9: Retrieve, process and analyze data using appropriate technologies.

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PLO10: Present data and communicate using appropriate technologies.

2. Plan for development and Improvement

Plan for development/revision	Strategies	Indexes
Minor revision of the curriculum annually	The evaluation and minor revision will be performed every year after completion of the program, using student, staff comments and evaluations.	-Annual evaluation report from stakeholders -Evaluation report (TQF7) -Meeting minute of Program administrative board
Major revision/reconstruct of the curriculum every 5 years based on the policy of Thai Office of Commission of Higher Education	This program curriculum will be evaluated by SWOT analysis using information on Graduates' achievement, Stakeholder opinion and world health status, every 5 year and revised.	-Revised curriculum (revised TQF2)
Improve instructor's skills in aspect of teaching, English language, examination and evaluation	-Taking course in advanced teaching skills, examination and evaluation. -Take English course for instructor who had TOEFL ITP score less than 550.	-TOEFL score of instructors -Percentage of the instructors who attend the courses.
Improving quality of thematic paper/ thesis	-Strengthening cooperation with high quality research site/hospital -Prepare more grant for conducting research	-Number of publication (Plan A(2) only)

Section 3 Educational Management System, Curriculum Implementation and Structure

1. Educational management system

1.1 System: Semester system

1.2 Summer session: Summer session is not offered

1.3 Credit equivalent to semester system: Not applicable

2. Curriculum implementation

2.1 Teaching schedule: conducted on the official hours

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2.2 Qualifications of prospective students

- 2.2.1 Students must hold a M.D., M.B.B.S. or other equivalent qualification that qualifies them to practice as a medical doctor, which is accepted by Mahidol University.
- 2.2.2 Students must have at least 1 year clinical experience (recommendation or confirmation documents required).
- 2.2.3 Have good mental and physical health.
- 2.2.4 Pass the English Proficiency Examination offered by the Faculty of Graduate Studies, Mahidol University
- 2.2.5 Other exceptions may be considered by the Program Director and the Dean of the Faculty of Graduate Studies

2.3 Problems that new students encounter when they start the program (predictions)

- 2.3.1 Having insufficient clinical skills in pediatrics.
- 2.3.2 Lacking of statistics knowledge and skills.

2.4 Strategies to solve problems in No.2.3

Problem	Strategies
Having insufficient clinical skills in pediatrics	TMTP 512 containing pediatric skills is elective subjects in the program.
Lacking of statistics knowledge and skills	A student who lacks statistics background will be encouraged to attend TMID510.

2.5 Five-Year-Plan for recruitment and graduation of students

2.5.1 Plan A (2)

Academic Year	2018	2019	2020	2021	2022
The number of students enrolled	3	4	4	4	4
Cumulative number	-	7	8	8	8
The number of graduates	-	3	4	4	4

2.5.2 Plan B

Academic Year	2018	2019	2020	2021	2022
The number of students enrolled	5	6	6	6	6
Cumulative number	-	-	-	-	-
The number of graduates	5	6	6	6	6

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2.6 Budget

Details of estimated budget for this program

Plan A2

Registration fee	Baht
-Credit fee [24 credits (xxxx Baht/ credit)]	xxxxxx
-Research fee	xxxxxx
-Thesis credit fee	xxxxxx
Total per student	xxxxxx
Estimated expenses	
Variable expense/ student	
-Thesis support budget	xxxxxx
-Translator incentive	xxxxxx
-Research site fee	xxxxxx
-Position allowance of thesis advisor and committee	xxxxxx
-College/university allocation	xxxxxx
Total per student	xxxxxx
Fixed expense/ program	
-Lecturer	xxxxxx
-Refreshment	xxxxxx
-Transportation	xxxxxx
-Allowance for extra faculty activity	xxxxxx
-Accommodation for extra faculty activity	xxxxxx
-Utility fee	xxxxxx
-Material fee	xxxxxx
-Equipment fee	xxxxxx
Total per program	xxxxxx
Number of student at break even point = 3 students	
Cost of student at break even point = 693,800 baht	

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Plan B

Registration fee	Baht
-Credit fee [30 credits (4500 Baht/ credit)]	xxxxxx
-Research fee	xxxxx
-Thematic paper credit fee	xxxxx
Total per student	xxxxxx
Estimated expenses	
Variable expense/ student	
-Thematic paper support budget	xxxxx
-Translator incentive	xxxx
-Research site fee	xxxxx
-Position allowance of thematic paper advisor and committee	xxxxx
-College/university allocation	xxxxx
Total per student	xxxxx
Fixed expense/ program	
-Lecturer	xxxxxx
-Refreshment	xxxx
-Transportation	xxxxx
-Allowance for extra faculty activity	xxxxx
-Accommodation for extra faculty activity	xxxxx
-Utility fee	xxxxx
-Material fee	xxxxx
-Equipment fee	xxxxx
Total per program	xxxxxx
Number of student at break even point = 5 students	
Cost of student at break even point = 923,500 baht	

2.7 Educational system : Classroom mode

2.8 Transfer of credits, courses and cross university registration (If any)

Credits transferring must be in compliance with Regulations of Mahidol University on Graduate Studies. Should you have more information, please visit our website: www.grad.mahidol.ac.th.

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3. Curriculum and lecturers

3.1 Curriculum

3.1.1 Number of Credits : At least 36 Credits

3.1.2 Curriculum Structure

The MBA curriculum for both Plan A2 and Plan B are structured according to Thailand Higher Education Standard and Quality B.E. 2558 as follows:

	Plan A(2)	Plan B
Required Courses	17 credits	17 credits
Elective Courses (at least)	7 credits	13 credits
Thesis	12 credits	-
Thematic paper	-	6 credits
Total (not less than)	36 credits	36 credits

3.1.3 List of course

Credits (lecture-lab-field practice)

(1) Required Courses: 17 credits

TMMH 502	Food- and Water- borne Diseases: Soil-transmitted Helminthiases	3 (2-2-5)
วขอส ๕๐๒	โรคที่ติดต่อทางอาหารและน้ำ: หนอนพยาธิที่ติดต่อทางดิน	
TMMH 503	Food- and Water-borne Diseases: Tissue Parasites	2 (2-0-4)
วขอส ๕๐๓	โรคที่ติดต่อทางอาหารและน้ำ: ปรสิตในเนื้อเยื่อ	
TMMH 504	Important Mosquito-borne Diseases	3 (3-0-6)
วขอส ๕๐๔	โรคติดต่อสำคัญที่นำโดยยุง	
TMTP 510	Seminar in Tropical Pediatrics	3 (3-0-6)
วชมข ๕๑๐	สัมมนากุมารเวชศาสตร์เขตร้อน	
TMTP 511	Common Pediatric Problems	2 (2-0-4)
วชมข ๕๑๑	ปัญหาทางกุมารเวชศาสตร์ที่พบบ่อย	
TMTP 513	Tropical Pediatric Apprenticeship	4 (1-6-5)
วชมข ๕๑๓	เวชปฏิบัติในกุมารเวชศาสตร์เขตร้อน	

(2) Elective Courses: at least 7 credits for PlanA and at least 13 credits for Plan B

TMID 510	Statistics for Clinical Research	3 (2-2-5)
วขสว ๕๑๐	สถิติสำหรับการวิจัยทางคลินิก	
TMMH 501	Principal of Tropical Medicine and Hygiene	3 (3-0-6)
วขสว ๕๐๑	หลักสำคัญเวชศาสตร์เขตร้อนและสุขวิทยา	

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		Credits (lecture-lab-field practice)
TMMH 505	Non-mosquito Vector-borne Diseases and Zoonoses	2 (2-0-4)
วขส ๕๐๕	โรคติดต่อจากพาหะอื่นนอกจากยุงและโรคติดต่อจากสัตว์สู่คน	
TMMH 506	Sexually Transmitted Diseases and Human Immunodeficiency Virus Related Problems	2 (2-0-4)
วขส ๕๐๖	โรคติดต่อทางเพศสัมพันธ์และปัญหาที่เกี่ยวข้องกับการติดเชื้อไวรัสเอชไอวี	
TMMH 507	General Health Problems and Common Diseases in the Tropics	2 (2-0-4)
วขส ๕๐๗	ปัญหาสุขภาพทั่วไปและโรคที่พบบ่อยในเขตร้อน	
TMTF 512	General Pediatric Apprenticeship	4 (2-4-6)
วขมข ๕๑๒	เวชปฏิบัติในกุมารเวชศาสตร์ทั่วไป	
TMTF 514	Critical Review in Tropical Pediatrics	2 (2-0-4)
วขมข ๕๑๔	ทบทวนแบบพิเคราะห์ทางกุมารเวชศาสตร์เขตร้อน	

In addition to elective courses mentioned above, a student may register other courses in international program offered by other faculties equivalent to Faculty of Graduate Studies, Mahidol University or the ones offered by other universities according to the student's interest with the approval of the curriculum committee or the advisor.

(3) Thesis

TMTF 698	Thesis	12 (0-36-0)
วขมข ๖๙๘	วิทยานิพนธ์	

(4) thematic paper

TMTF 697	Thematic Paper	6 (0-18-0)
วขมข ๖๙๗	สารนิพนธ์	

3.1.4 Research Project of the Program (only for Plan A2):

Guidelines for conducting a research project are as follows:

- (1) Prospective study on tropical pediatrics eg. Risk factor of disease severity, Clinical manifestation and epidemiology.
- (2) Development of diagnostic tools including clinical criteria and laboratory tests.
- (3) Clinical trial in pediatrics eg. Vaccines, New drug regimen.
- (4) Meta-analysis on interesting topics in tropical pediatrics.

3.1.5 Thematic Paper Project (only for Plan B)

Guidelines for conducting a Thematic paper project are as follows:

- (1) Descriptive study on tropical pediatrics in aspects of clinical features, laboratory finding and treatment.
- (2) Analytic study on tropical pediatrics eg. comparison among diagnostic tests/ treatment regimens.

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(3) Epidemiological study on tropical pediatrics eg. incidence/ prevalence of pediatric infectious diseases, nutritional status.

(4) High quality literature review on tropical pediatrics.

3.1.6 Course Code Explanation

Four main alphabets are defined as follows::

The first two alphabets are abbreviation of the faculty offering the course.

TM = Faculty of Tropical Medicine

The latter two alphabets are abbreviation of the department or the major offering the course.

CD = Department of Clinical Tropical Medicine

ID = Inter-department

MH = Medical Hygiene

TP = Department of Tropical Pediatrics

3 digits of number are 5XX and 6XX indicate that the courses are in the graduate study level.

3.1.7 Program schedule

Plan A 2				
Year	Semeter 1	Credits	Semeter 2	Credits
1	TMMH 502 Food- and Water-borne Diseases: Soil-transmitted Helminthiases	3 (2-2-5)	TMTP 510 Seminar in Tropical Pediatrics	3 (3-0-6)
	TMMH 503 Food- and Water-borne Diseases: Tissue Parasites	2 (2-0-4)	TMTP 511 Common Pediatric Problems	2 (2-0-4)
	TMMH 504 Important Mosquito-borne Diseases	3 (3-0-6)	TMTP 513 Tropical Pediatric Apprenticeship	4 (1-6-5)
	Elective subjects		Elective subjects	
	Total 12 credits	4 credits	Total 12 credits	3 credits
2	TMTP 698 Thesis	6 (0-18-0)	TMTP 698 Thesis	6 (0-18-0)
	Total 6 credits		Total 6 credits	

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Plan B				
Year	Semeter 1	Credits	Semeter 2	Credits
1	TMMH 502 Food- and Water-borne Diseases: Soil-transmitted Helminthiases	3 (2-2-5)	TMTP 510 Seminar in Tropical Pediatrics	3 (3-0-6)
	TMMH 503 Food- and Water-borne Diseases: Tissue Parasites	2 (2-0-4)	TMTP 511 Common Pediatric Problems	2 (2-0-4)
	TMMH 504 Important Mosquito-borne Diseases	3 (3-0-6)	TMTP 513 Tropical Pediatric Apprenticeship	4 (1-6-5)
	Elective subjects	7 credits	Elective subjects	6 credits
	Total 15 credits		Total 15 credits	
Summer				
	TMTP 697 Thematic Paper	6(0-18-0)		

3.1.8 Course description : details in Appendix A

3.2 Name, I.D. Number, title and degree of instructors

3.2.1 Full time instructors of the curriculum: details in Appendix B

	ID number Academic position Name -surname	Degree (Field of study), University: Year of graduate	Department
1	XXXXX XXXXX XX X Associate Professor Chukiat Sirivichayakul	Dip. Thai Board of Pediatrics, Thai Medical Council Chulalongkorn University: 1991 D.T.M.&H., Mahidol University: 1997 M.D., Chulalongkorn University: 1985	Department of Tropical Pediatrics, FTM, MU
2	XXXXX XXXXX XX X Associate Professor Kriengsak Limkittikul	Dip. Thai Board of Pediatrics, Thai Medical Council, Khonaeen University: 1999 Diploma (Virus), Institute of Tropical Medicine, Nagasaki University, Nagasaki, Japan: 2001 D.T.M.&H., Mahidol University: 2006 M.D., Mahidol University: 1995	Department of Tropical Pediatrics, FTM, MU
3	XXXXX XXXXX XX X Assistant Professor	Dip. Thai Board of Pediatrics Infectious Diseases,	Department of

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	ID number Academic position Name -surname	Degree (Field of study), University: Year of graduate	Department
	Weerawan Hattasingh	Thai Medical Council, Chulalongkorn University: 2009 Dip. Thai Board of Pediatrics, Thai Medical Council (QSNICH) : 2002 D.T.M.&H., Mahidol University: 2011 M.D., Mahidol University: 1996	Tropical Pediatrics, FTM, MU
4	XXXXXX XXXXX XX X Lecturer Dr. Supawat Chatchen	Ph.D. (Molecular Genetics and Genetic Engineering) Mahidol University: 2005 M.Sc. (Medical science), Mahidol University: 1999 D.T.M.&H., Mahidol University: 2014 M.D., Mahidol University: 2008	Department of Tropical Pediatrics, FTM, MU

3.2.2 Full time instructors (details in Appendix B)

	ID number Academic position Name -surname	Degree (Field of study), University: Year of graduate	Department
1	XXXXXX XXXXX XX X Professor Dr. Kesinee Chotivanich	Ph.D. (Pathobiology), Mahidol University: 1998 M.Sc. (Pathobiology), Mahidol University: 1995 B.N.S., Mahidol University: 1992	Department of Clinical Tropical Medicine, FTM, MU
2	XXXXXX XXXXX XX X Professor Dr. Polrat Wilairatana	Ph.D. (Trop. Med.), Mahidol University: 2000 Dip. Thai Board of Internal Medicine-subspecialty Gastroenterology, Thai Medical Council: 2004 Dip. Thai Board of Internal Medicine-subspecialty Infectious Diseases, Thai Medical Council: 2004 Dip. Thai Board of Internal Medicine-subspecialty Gastroenterology, The Royal College of Physicians of Thailand: 1997 Dip. Thai Board of Internal Medicine, Thai Medical Council: 1990	Department of Clinical Tropical Medicine, FTM, MU

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	ID number Academic position Name -surname	Degree (Field of study), University: Year of graduate	Department
		M.D., Mahidol University: 1984	
3	XXXXX XXXXX XX X Professor Punnee Pitisuttithum	Dip. Thai Board of Internal Medicine, Thai Medical Council: 1993 D.C.M, Mahidol University: 1992 D.T.M.&H., Mahidol University: 1984 M.B.B.S., University of Delhi, India: 1982	Department of Clinical Tropical Medicine, FTM, MU
4	XXXXX XXXXX XX X Professor Dr. Rungsun Tungtrongchitr	Ph.D. (Trop. Med.), Mahidol University: 1988 M.Sc. (Trop. Med.), Mahidol University: 1981 B.Sc. (Med. Tech.), Mahidol University: 1977	Department of Tropical Nutrition and Food Science, FTM, MU
5	XXXXX XXXXX XX X Professor Dr. Sasithon Pukrittayakamee	D. Phil, University of Oxford, UK: 1985 Dip. in Clinical Science Ramathibodi Hospital, Mahidol University: 1982 D.T.M.&H., Mahidol University: 1981 M.B., B.S., University of Delhi, India: 1979	Department of Clinical Tropical Medicine, FTM, MU
6	XXXXX XXXXX XX X Professor Srivicha Krudsood	Dip. Thai Board in Internal Medicine, Thai Medical Council: 1993 M.Sc. (C.T.M.), Mahidol University: 1992 D.T.M.& H., Mahidol University: 1992 M.D., Faculty of Medicine, Far Eastern University, Philippines: 1990 B.Sc. (Biology), Chulalongkorn University: 1984	Department of Tropical Hygiene, FTM, MU
7	XXXXX XXXXX XX X Professor Yaowalark Sukthana	Dip. Thai. Board of Oto-Rhino-Laryngology, Thai Medical Council: 1995 M.C.T.M., Mahidol University: 1994 Cert. in Oto-Rhino-Laryngology. Ramadhibodi Hospital, Mahidol University: 1985 D.T.M.&H., Mahidol University: 1995	Department of Protozoology, FTM, MU

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	ID number Academic position Name -surname	Degree (Field of study), University: Year of graduate	Department
		M.D. (Hons.), Pramongkutkloa Medical College: 1993 D.V.M., Kasetsart University: 1978	
8	XXXXX XXXXX XX X Associate Professor Benjaluck Phonrat	M.Sc. (Trop.Med.), Mahidol University: 1983 B.Sc. (Biology), Silpakorn University: 1979	Department of Clinical Tropical Medicine, FTM, MU
9	XXXXX XXXXX XX X Associate Professor Dr. Chalit Komalamisra	Dr.Med.Sc., St. Marianna University, Japan: 1991 D.A.P. & E., Institute of Medical Research, Malaysia: 1984 M.Sc. (Trop.Med.), Mahidol University: 1983 B.Sc. (Biology), Silpakorn University: 1977	FTM, MU
10	XXXXX XXXXX XX X Associate Professor Dr. Direk Limmathurotsakul	Ph.D. (Life and Biomolecular Science) Open University, UK: 2008 M.Sc. (Statistics), London School of Hygiene and Tropical Medicine, UK: 2009 M.D., Chulalongkorn University: 2000	Department of Tropical Hygiene, FTM, MU
11	XXXXX XXXXX XX X Associate Professor Dr. Dorn Watthanakulpanich	Ph.D. (Biomolecular Sciences), Liverpool John Moores University, Liverpool, UK: 2009 M.D., Mahidol University: 2002 M.Sc. (Trop.Med.), Mahidol University: 1995 B.Sc. (Medical Technology), Chiangmai University: 1988	Department of Helminthology, FTM, MU
12	XXXXX XXXXX XX X Associate Professor Dr. Noppadon Tangpukdee	Ph.D. (Trop.Med.), Mahidol University: 2008 M.Sc. (Toxicology), Mahidol University: 2001 D.M.M. (Diploma in Medical Microbiology), Institute of Medical Research, Malaysia: 2003 B.N.S., Khon Kaen University: 1995	Department of Clinical Tropical Medicine, FTM, MU

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	ID number Academic position Name -surname	Degree (Field of study), University: Year of graduate	Department
13	XXXXX XXXXX XX X Associate Professor Dr. Parnpen Viriyavejakul	Ph.D. (Combined Molecular and Biochemistry Studies), University of Liverpool, UK: 2007 Dip. Thai Board of Anatomical Pathology, (Ramathibodi Hospital), Mahidol University: 1996 M.Sc. (C.T.M.), Mahidol University: 1993 D.T.M. &H., Mahidol University: 1992 M.D. University of the East Ramon Magsaysay, Memorial Medical Center, Philippines: 1990 B.S. (Biology – Genetics), University of the Philippines at Los Banos, Philippines: 1986	Department of Tropical Pathology, FTM, MU
14	XXXXX XXXXX XX X Associate Professor Dr. Paron Dekumyoy	Ph.D. (Trop. Med.), Mahidol University: 2003 M.Sc. (Trop. Med.), Mahidol University: 1985 B.S. (Biology), Ramkhamhaeng University: 1980	Department of Helminthology, FTM, MU
15	XXXXX XXXXX XX X Associate Professor Dr. Poom Adisakwattana	Ph.D. (Biomedical Sciences), Thammasat University: 2007 B.Sc. (Medical Technology), Thammasat University: 2000	Department of Helminthology, FTM, MU
16	XXXXX XXXXX XX X Associate Profess Dr. Porntip Petmitr	Ph.D. (Biochemistry), Mahidol University: 1993 M.Sc. (Trop. Med.), Mahidol University: 1985 B.Sc. (Medical Technology), Chiangmai University: 1982	Department of Protozoology, FTM, MU
17	XXXXX XXXXX XX X Associate Professor Dr. Pratap Singhasivanon	Dr.P.H. (Epidemiology), University of Michigan, USA: 1991 M.P.H., Harvard University, USA: 1985 D.T.M.&H., Mahidol University: 1982 M.B.B.S., Kasturba Medical College, India: 1970	Department of Tropical Hygiene, FTM, MU

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	ID number Academic position Name -surname	Degree (Field of study), University: Year of graduate	Department
18	XXXXX XXXXX XX X Associate Professor Vipa Thanachartwet	Dip. Subspecialty Board of Nephrology, Thai Medical Council: 2002 Dip. Board of Internal Medicine, Thai Medical Council: 2001 M.D., Mahidol University: 1997	Department of Clinical Tropical Medicine, FTM, MU
19	XXXXX XXXXX XX X Associate Professor Dr. Yaowapa Maneerat	Ph.D. (Pathobiology), Mahidol University: 1994 M.Sc. (Pathobiology), Mahidol University: 1987 D.V.M., Chulalongkorn University: 1984	Department of Tropical Pathology, FTM, MU
20	XXXXX XXXXX XX X Assistant Professor Dr. Aongart Mahittikorn	Ph.D. (Trop. Med.), Mahidol University: 2009 M.Sc. (Public Health), Mahidol University: 2003 B.Sc. (Public Health) (Hons.), Mahidol University: 2003	Department of Protozoology, FTM, MU
21	XXXXX XXXXX XX X Assistant Professor Dr. Apichart Nontprasert	Ph.D. (Trop. Med.) Mahidol University: 2001 M.Sc. (Public Health), Mahidol University: 1986 B.Sc. (Biology), Ramkhamhaeng University: 1983	Department of Clinical Tropical Medicine, FTM, MU
22	XXXXX XXXXX XX X Assistant Professor Dr. Jittima Dhitavat	D.Phil. (Clinical Medicine), University of Oxford, UK: 2003 Certificate of the Thai Board of Dermatology, Medical Council Thailand: 1995 M.Sc. (Internal Medicine), Chulalongkorn University: 1992 M.D. (Honors), Prince of Songkla University: 1989	Department of Clinical Tropical Medicine, FTM, MU
23	XXXXX XXXXX XX X Assistant Professor Kittiyod Poovorawan	Thai Board of Gastroenterology, Chulalongkorn University: 2012 Dip., Thai Board of Internal Medicine, Thai Medical Council: 2010 M.D. (First Class Honors), Chulalongkorn University:	Department of Clinical Tropical Medicine, FTM, MU

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	ID number Academic position Name -surname	Degree (Field of study), University: Year of graduate	Department
		2006	
24	XXXXX XXXXX XX X Assistant Professor Dr. Kobporn Boonnak	Ph.D. (Microbiology), Mahidol University: 2008 M.Sc. (Immunology), Mahidol University: 2000 B.Sc. (Biochemistry and Biochemical Technology) ChiangMai University: 1992	Department of Microbiology and Immunology, FTM, MU
25	XXXXX XXXXX XX X Assistant Professor Dr. Muthita Vanaporn	Ph.D. (Immunology), Mahidol University: 2008 B.Sc. (Medical Technology) (second class honor), Chulalongkorn University: 2001	Department of Microbiology and Immunology, FTM, MU
26	XXXXX XXXXX XX X Assistant Professor Dr. Nathamon Kosoltanapiwat	Ph.D. (Microbiology), Mahidol University: 2008 B.Sc. (Medical Technology), with 2nd Class Honor, Mahidol University: 2002	Department of Microbiology and Immunology, FTM, MU
27	XXXXX XXXXX XX X Assistant Professor Dr. Piengchan Sonthayanon	Ph.D. (Trop. Med.), Mahidol University: 2008 M.Sc. (Biochemistry), Mahidol University: 1992 B.Sc. (Biology), Chiangmai University: 1983	Department of Clinical Tropical Medicine, FTM, MU
28	XXXXX XXXXX XX X Assistant Professor Dr. Pornsawan Leaungwutiwong	Ph.D. (Trop. Med.), Mahidol University: 2005 M.Sc. (Trop. Med.), Mahidol University: 1999 B.Sc. (Radiological Technology), Mahidol University: 1996	Department of Microbiology and Immunology, FTM, MU
29	XXXXX XXXXX XX X Assistant Professor Dr. Ronald Enrique Morales Vargas	Ph.D. (Medical Science), Nagasaki University, Japan: 2002 M.Sc. (Biology), Kagoshima University, Japan: 1998 Licentiate (Biological Chemistry), University of San Carlos Guatemala: 1992	Department of Medical Entomology, FTM, MU

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	ID number Academic position Name -surname	Degree (Field of study), University: Year of graduate	Department
30	XXXXX XXXXX XX X Assistant Professor Dr. Suchada Sumruayphol	Ph.D. (Trop. Med.) Mahidol University: 2009 M.Sc. (Appropriate Technology for Resources and Environmental Development), Mahidol University: 2004 B.Sc. (Agriculture), Kasetsart University: 2001	Department of Medical Entomology, FTM, MU
31	XXXXX XXXXX XX X Assistant Professor Dr. Saengduen Moonsom	Ph.D. (Molecular Genetics and Genetic Engineering), Mahidol University: 2007 M.Sc. (Molecular Genetics and Genetic Engineering), Mahidol University: 2004 B.Sc. (Medical Technology), Chiang Mai University: 1998	Department of Protozoology, FTM, MU
32	XXXXX XXXXX XX X Assistant Professor Dr. Sumate Ampawong	Ph.D. (Trop. Med.), Mahidol University: 2009 M.Sc. (Trop. Med.), Mahidol University: 2001 D.V.M., Kasetsart University: 1998	Department of Tropical Pathology, FTM, MU
33	XXXXX XXXXX XX X Assistant Professor Dr. Supaluk Popruk	Ph.D. (Trop. Med.), Mahidol University: 2007 B.Sc. (Med. Tech.), Naresuan University: 2001	Department of Protozoology, FTM, MU
34	XXXXX XXXXX XX X Assistant Professor Supat Chamnanchanunt	Dip. Thai Board of Hematology, Thai Medical Council: 2005 D.T.M. &H, Mahidol University: 2001 M.D., Rangsit University: 1998	Department of Clinical Tropical Medicine, FTM, MU
35	XXXXX XXXXX XX X Assistant Professor Udomsak Silachamroon	Dip. Thai Board of Internal Medicine, Thai Medical Council: 1996 M.Sc. (Medicine), Chulalongkorn University: 1998 Dip. of Clinical Sciences (Internal Medicine), Chulalongkorn University: 1994	Department of Clinical Tropical Medicine, FTM, MU

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	ID number Academic position Name -surname	Degree (Field of study), University: Year of graduate	Department
		M.D. (Second Class Honor), Chulalongkorn University: 1990	
36	XXXXX XXXXX XX X Assistant Professor Dr. Urai Chaisri	Ph.D. (Trop. Med.), Mahidol University: 2001 M.Sc. (Trop. Med.), Mahidol University: 1987 B.Sc. (Biology), Ramkhumhang University: 1983	Department of Tropical Pathology, FTM, MU
37	XXXXX XXXXX XX X Assistant Professor Dr. Urusa Thaenkham	Ph.D. (Trop. Med.), Mahidol University: 2010 M.Sc. (Environmental Biology), Mahidol University: 2001 B.Sc. (Biology), Mahidol University: 1997	Department of Helminthology, FTM, MU
38	XXXXX XXXXX XX X Assistant Professor Viravarn Luvira	Dip. Thai Board of Internal Medicine, Thai Medical Council: 2008 D.T.M.&H., Mahidol University: 2004 M.D., Mahidol University: 2002	Department of Clinical Tropical Medicine, FTM, MU
39	XXXXX XXXXX XX X Assistant Professor Watcharapong Piyaphanee	Dip. Thai Board of Internal Medicine, Thai Medical Council: 2005 Diploma in Travel Medicine, The Royal College of Physicians and Surgeons of Glasgow, UK: 2008 Diploma in Clinical Science (Internal Medicine) Mahidol University: 2003 M.D. (1st Class Hons), Mahidol University: 1998	Department of Clinical Tropical Medicine, FTM, MU
40	XXXXX XXXXX XX X Assistant Professor Dr. Watcharee Arunsodsai	Ph.D. (Infectious & Tropical Diseases) University of London, UK: 2005 Diploma (Infectious Diseases), International Medical Center of Japan, Tokyo, Japan: 1998 Dip. Thai Board of Pediatrics, Thai Medical Council: 1993 D.T.M.&H., Mahidol University: 1996 M.D., Mahidol University: 1987	Department of Tropical Pediatrics, FTM, MU

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	ID number Academic position Name -surname	Degree (Field of study), University: Year of graduate	Department
41	XXXXX XXXXX XX X Assistant Professor Weerapong Phumratanaprapin	Dip. Thai Board of Nephrology, Thai Medical Council: 2002 Dip. Thai Board of Internal Medicine, Thai Medical Council: 1997 M.D., Chulalongkorn University: 1989	Department of Clinical Tropical Medicine, FTM, MU
42	XXXXX XXXXX XX X Assistant Professor Dr. Wirichada Pan-ngum	Ph.D. (Infectious Diseases), University of Liverpool, UK: 2006 M.Sc. (Applied Statistics), University of Oxford, UK: 1999 B.Sc.(Math & Operational Research Statistics & Economics), University of Warsick, UK: 1998	Department of Tropical Hygiene, FTM, MU
43	XXXXX XXXXX XX X Lecturer Dr. Borimas Hanboonkunupakarn	Ph.D. (Anatomy), Mahidol University: 2006 D.T.M.&H., Mahidol University: 2011 M.D., Mahidol University: 1999	Department of Clinical Tropical Medicine, FTM, MU
44	XXXXX XXXXX XX X Lecturer Chatporn Kittitrakul	Diplomate Thai Board of Gastroenterology, Chulalongkorn University and Thammasat University: 2009 Dip. Thai Board of Internal Medicine Thai Medical Council: 2007 M.D., Chulalongkorn University: 2000	Department of Clinical Tropical Medicine, FTM, MU
45	XXXXX XXXXX XX X Lecturer Chayasin Mansanguan	Dip. Thai Board of Cardiology, Thai Medical Council: 2015 Dip. Thai Board of Internal Medicine, Thai Medical Council: 2012 M.D., Naresuan University: 2005	Department of Clinical Tropical Medicine, FTM, MU
46	XXXXX XXXXX XX X Lecturer Dr. Natthida Sriboonvorakul	Ph.D. (Chemistry), Chulalongkorn University: 2014 B.Sc. (Chemistry), Chulalongkorn University: 2007	Department of Clinical Tropical Medicine, FTM, MU

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	ID number Academic position Name -surname	Degree (Field of study), University: Year of graduate	Department
47	XXXXX XXXXX XX X Lecturer Dr. Prakaykaew Charunwatthana	Ph.D. (Clin.Trop.Med.), Mahidol Univesity: 2008 M.C.T.M., Mahidol Univesity: 2001 M.D., Rungsit University: 2000	Department of Clinical Tropical Medicine, FTM, MU
48	XXXXX XXXXX XX X Lecturer Dr. Sant Muangnoicharoen	Ph.D. (Clinical Pharmacology), University of Liverpool, UK: 2008 M.D., Chiang mai University: 2001	Department of Clinical Tropical Medicine, FTM, MU
49	XXXXX XXXXX XX X Lecturer Dr. Sungsit Sungvornyothin	Ph.D. (Entomology), Kasetsart University: 2007 M.Sc. (Environmental Biology) Mahidol University: 2001 B.Sc. (Biology), Mahidol University: 1996	Department of Medical Entomology, FTM, MU
50	XXXXX XXXXX XX X Lecturer Supitcha Kamolratanakul	Dip. Thai Board of Dermatology Thai Medical Council: 2016 MD., Chulalongkorn University: 2009	Department of Clinical Tropical Medicine, FTM, MU
51	XXXXX XXXXX XX Lecturer Dr. Wirongrong Chierakul	Ph.D. (life and Biomedical Science) Open University, UK: 2009 Dip. Thai Board of Internal Medicine, Thai Medical Council: 2007 Diploma in Clinical Science Mahidol University: 1995 M.D., Mahidol University: 1991	Department of Clinical Tropical Medicine, FTM, MU

3.2.3 Part time lecturers

The program committee will consider an appointment for part time lecturer as appropriate.

4. Details of practicum (if any)

None

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5. Thesis and thematic paper requirement

5.1 Thesis

The thesis should be an original article or meta-analysis in tropical pediatrics in the scope as described in 3.1.4 or equivalent. The format and time schedule for conducting the thesis should follow the regulations of the Faculty of Graduate Studies.

5.1.1 Short description

Identifying research questions on tropical pediatrics, developing a research proposal, conducting research with concern for research ethics, collection data, analysis data, interpretation of the results and report the result in terms of thesis, presentation and publication of the research in standard journals or as conference proceedings.

5.1.2 Standard Learning Outcomes

The student should, as the principal investigator, be able to organise standard clinical research and formulate professional teamwork, and appropriately criticize data on tropical pediatrics, in accordance with research ethics and good clinical practice.

5.1.3 Time frame

Semester 1-2, year 2

5.1.4 Number of credits

12 credits

5.1.5 Preparation

Providing the thesis manual since the beginning of the program, setting the advisory schedule (at least every 2 weeks), recording the supervision logs, and setting the thesis milestones.

5.1.6 Evaluation process

Evaluation must be performed at least every month to assess the thesis progression and problems and to solve them. The final evaluation will be performed via a thesis defense examination and the final thesis. The GR 42 will be reported every semester.

5.2 Thematic paper

The thematic paper should be an original article in tropical pediatrics in the scope as described in 3.1.5 or equivalent. The format and time schedule for conducting the thesis should follow the regulation of the Faculty of Graduate Studies.

5.2.1 Short description

Identifying questions in tropical pediatrics, searching for knowledge to answer the research questions by reviewing publications and presenting or publishing the results.

5.2.2 Standard learning outcomes

Student should, as an investigator, be able to apply standard clinical research and formulate professional teamwork, appropriately criticize data on tropical pediatrics, in accordance with research ethics and good clinical practice.

5.2.3 Time frame

Semester 2 of Year 1

5.2.4 Number of credits

6 credits

5.2.5 Preparation

Providing the thematic paper manual since the beginning of the program, setting the advisory schedule (at least every 2 weeks) and recording the supervision logs, and setting thematic paper milestones.

5.2.6 Evaluation process

Evaluation must be performed at least every month to assess the thematic paper's progression and identify any problems and then to solve them. The final evaluation will be performed via a thematic paper defense examination and the final thematic paper. The GR 42 will be reported every semester.

Section 4 Learning Outcomes, Teaching Strategies and Evaluation

1. How to develop specific qualifications of students

Special Characteristics	Teaching Strategies or Student Activities
1. Fulfil the expected outcomes of Mahidol graduates M- Mastery A- Altruism H- Harmony I- Integrity D- Determination O- Originality L- Leadership	Through intra- and extra-curriculum activities, e.g., Ethics, GCP training, Cultural activities of the Faculty of Tropical Medicine, Academic Forum, Soft skills development
2. Fulfil the expected outcomes of the Faculty of Tropical Medicine Tr- Transformation and Innovation Op- Open and globally connected M- Multidisciplinary E- Entrepreneurship D- Data-driven decision	

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2. How to develop learning outcomes in each objective

Expected outcome	Teaching strategies	Evaluation strategies
1. Morality and ethics		
PLO1: Demonstrate ethical consideration in medical practice.	Instructor demonstrates ethical mind and practice during clinical practice (by roleplaying)	Observation on student's attitude and behavior (Rubric scale)
PLO2: Demonstrate ethical consideration and code of conduct in clinical research.	Instructor demonstrates ethical mind and practice during seminar and clinical research. (by roleplaying)	Observation on student's attitude and behavior (Rubric scale)
2. Knowledge		
PLO3: Describe the tropical diseases in important aspects of epidemiology, clinical presentations, diagnosis, treatment, prevention and control.	<ul style="list-style-type: none"> - Lecture - Case presentation/ clinic visit - Case discussion - Work assignment 	<ul style="list-style-type: none"> - MCQ - Participation (Rubric scale) - Assigned work
PLO4: Describe research methodologies and principle of good clinical practice.	<ul style="list-style-type: none"> - Work assignment/ Seminar - Thesis/thematic paper 	<ul style="list-style-type: none"> - Assigned work - Research plan in Thesis/thematic paper (Rubric scale)
3. Intellectual development		
PLO5: Formulate the diagnosis and management of tropical pediatrics based on clinical information.	<ul style="list-style-type: none"> - Case discussion - Case presentation/ clinic visit - Seminar - Bed side teaching - Ward practice/ procedure practice - Laboratory practice 	<ul style="list-style-type: none"> - OSCE - Participation (Rubric scale) - Assigned work (Rubric scale)
PLO6: Organize clinical research in tropical pediatrics according to international standard.	<ul style="list-style-type: none"> - Lecture - Seminar - Thesis/thematic paper 	<ul style="list-style-type: none"> - Participation (Rubric scale) - Assigned work (Rubric scale) - Research process in thesis/thematic paper (Rubric scale)
4. Interpersonal relationship and responsibility		
PLO7: Formulate professional	<ul style="list-style-type: none"> - Ward practice 	<ul style="list-style-type: none"> - Observation during ward

Expected outcome	Teaching strategies	Evaluation strategies
teamwork in clinical practice.		practice (Rubric scale)
PLO8: Formulate professional teamwork in clinical research.	- Practice in site preparation and data collection during research for thesis/thematic paper.	- Observation during research process (Rubric scale)
5. Mathematical analytical thinking, communication skills, and information technology skills		
PLO9: Retrieve, process and analyze data using appropriate technologies.	- Seminar - Thesis/thematic paper	- Participation (Rubric scale) - Assigned work (Rubric scale) - Analyzing data in Thesis/thematic paper (Rubric scale)
PLO10: Present data and communicate using appropriate technologies.	- Lecture - Seminar - Scientific presentation - Thesis/thematic paper	- Participation (Rubric scale) - Assigned work (Rubric scale)

3. Curriculum mapping Please see details in Appendix C

Section 5 Criteria for Student Evaluation

1. Grading system

Grading system and graduation will be complied with the criteria stated in Regulations of Mahidol University on Graduate studies.

2. Evaluation process for the learning outcome of students

2.1 Annual assessment of the student's examination results, both for each course and the overall program

2.2 Instructor assessment on the student's ability to apply their knowledge learnt from previous course

2.3 Instructors annually revise the content of each course

2.4 Graduate interview

2.5 Stakeholder interview

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3. Graduation requirement

3.1 For Plan A

3.1.1 Total time of study should not exceed the study plan.

3.1.2 Students must complete courses as stated in the curriculum at least 24 credits including thesis 12 credits, totally 36 credits with a minimum 3.00 CUM-GPA.

3.1.3 Students must meet the English Competence Standard of Graduate Students, Mahidol University defined by the Faculty of Graduate Studies, Mahidol University.

3.1.4 Student must participate in skill development activities of the Graduate Studies, Mahidol University.

3.1.5 Students must submit theses and pass the thesis defense by following Regulations of Mahidol University on Graduate Studies.

3.1.6 A part or overall thesis is published or accepted for publication in a peer reviewed journal or presented in an academic meeting with proceedings in compliance with the Faculty of Graduate Studies, Mahidol University

3.2 For Plan B

3.2.1 Total time of study should not exceed the study plan.

3.2.2 Students must complete their courses as stated in the curriculum with at least 30 credits and thematic paper 6 credits, totally 36 credits with a minimum 3.00 CUM-GPA.

3.2.3 Students must meet the English Competence Standard of Graduate Students, Mahidol University defined by the Faculty of Graduate Studies, Mahidol University.

3.2.4 Students must participate in skill development activities of the Graduate studies, Mahidol University.

3.2.5 Students must pass the qualifying examination following Regulations of Mahidol University on Graduate Studies.

3.2.6 Students must present their thematic paper and pass the defense examination by following Regulations of Mahidol University on Graduate Studies.

3.2.7 The thematic paper or a part of thematic paper must be published and can be searched

Section 6 Faculty Development

1. The orientation for new faculty members

1.1 The head of the department will orientate new faculty member on the program and courses as well as assign the members to teaching activity under at mentoring system.

1.2 New faculty member will be orientated according to the university's Human Resources Development Plan for proper teaching and learning methods, preparation, assessment as well as evaluation.

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2. Skills and knowledge development for new faculty members:

2.1 Skills development in teaching and evaluation

2.1.1 Faculty members will be continuously updated on proper teaching skills and learning methods, preparation, assessment as well as evaluation.

2.2 Other Academic and Professional Skill Development

2.2.1 Faculty members will be continuously trained on research proposal writing, conducting research, academic writing and publication for international journals.

2.2.2 Faculty members will be supported to apply for the research funding.

2.2.3 Faculty members will be supported to participate and present their research work in academic meetings.

Section 7 Quality Assurance

1. Regulatory Standards

1.1 Quality assurance is performed in accordance with the regulations of the Office of the Higher Education Commission, Thailand and the Faculty of Graduate Studies, Mahidol University.

1.2 The program and course evaluation will be performed after each academic cycle ends. The results will be considered for the program and course improvement. In addition, the improvement will be performed in a timely manner based on the technological innovations, stakeholders and international requirements.

2. Graduate

2.1 Graduates have to fulfill all the program requirement as shown in Section 5 and the requirements of the Faculty of Graduates Studies.

2.2 Labor market and/or employers' satisfaction with graduates: the accomplishment evaluation of graduates will be performed via employers' satisfaction, and on employers' opinions on the performance and capabilities of the graduates according to the program objectives. The graduates will be followed to assess their qualities, both by the employers and themselves.

3. Students

3.1 Students have to fulfill the enrollment criteria as shown in Section 3 Number 2.

3.2 Orientations: Program provides a student handbook. The orientation by instructor has been given to students at the beginning of each semesters. These include detail of each course objectives, course learning outcomes, teaching and learning activities & schedule and student assessments.

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- 3.3 Mentoring and advisory: Bangkok School of Tropical Medicine (BSTM) has appointed Student Affairs Advisory Team consisted of lecturers and volunteers. This Advisory Team, different from the Thematic Advisory Team, give personal advice to students in general aspects. Students can consult, report any problems, voice their opinions or give feedbacks by sending Email:tmbstm@mahidol.ac.th. This can facilitate the response of any problem arisen during the study at the program. Moreover, students can directly contact BSTM officer and director of the program via email or direct appointment at BSTM office or Department of Tropical Pediatrics Office.
- 3.4 Appeal Process: In case of any doubt or uncertainty in the marks or grades of the student assessments, students can directly contact advisors, supervisors, lecturers or Director of the Program. In case that student would like to appeal the marks or grades, there are several processes that can be done. Students can appeal via website <http://www.tm.mahidol.ac.th/eng/dean.php>, suggestion box, email or submit the Appeal form to Director of the Program, Deputy Dean for Education, Dean of Faculty of Tropical Medicine, or Dean of Faculty of Graduate Studies.

4. Instructors

- 4.1 Recruitment of new faculty members: the Faculty will recruit new instructors and supporting staffs according to Mahidol University's regulations, including recruitment system by a nomination committee and evaluation of a probation period. New instructors and supporting staffs will be orientated according to the university's Human Resources Development.
- 4.2 Participation of faculty members in planning, following up and reviewing of the curriculum: the program committee will set up meetings with instructors to prepare teaching activities and then evaluate for any revisions after the program. Additional meetings will be set up to solve any unexpected problem if necessary.

5. Program, Study and Student Assessment

- 5.1 The study process and program will be assessed in the aspects of program compliance, stakeholder satisfaction, and student's achievement. The assessment of student achievement will be performed in accordance with the objectives of each course. Evaluation of the program and course will be performed on all stakeholders via interviewing and/or questionnaire.
- 5.2 The curriculum will be evaluated annually. Minor revision will be considered every year and major revision will occur every 5 years.
- 5.3 Student evaluation on course content, teaching and learning process, assessment methods and curriculum will be performed regularly at the end of each semester. In addition, students' feedback using annual evaluation form, exit interview, and other information from

students (during Meet the Dean, Talk to Dean, suggestion box, etc) will be considered. All of these activities and relevant systems aim to help students achieve objectives of the program. Feedback from teaching staff and support staff is helpful in the process of the courses and curriculum development and improvement. The feedback from staff members are collected regularly through program- executive committee meetings.

6. Learning Support

- 6.1 Budgeting: the Faculty of Graduate Studies and the Faculty of Tropical Medicine will allocate adequate budget for conducting the course and program including teaching resources, funding, and personnel.
- 6.2 Utilizing available resources: the students can access all the libraries under Mahidol University, particularly the Rajvithi Campus Library and the library of the department. The computers of the IT unit and MU wifi are available for searching data. The students can also download some important scientific articles and softwares under subscription of Mahidol University. There are sufficient lecture rooms and student common rooms.
- 6.3 Finding more resources: the program will find more resources in response to any further needs of the students and teaching activities.
- 6.4 Studying the sufficiency of the resources: the program will conduct survey on the sufficiency of the resources after graduation. In addition, the students can inform their needs to the program coordinator at any time.
- 6.5 Support staff must be qualified for the specified position and comply with the recruitment regulations of Mahidol University. Development of supporting staff is complied with Mahidol University policy. Skill development is emphasized in a performance agreement (PA) for each staff. The faculty also provides short training courses on soft skills and learning-media production.
- 6.6 Academic guidance and general counseling services: the orientation will be arranged in the first week of the program to provide important information on curriculum, study schedule, extra-curriculum activities, supportive resources and personnel and etc. The faculty has a student affairs division to provide support and guidance on both academic and non-academic activities.

7. Key Performance Indicators

The Master in Clinical Tropical Medicine (Tropical Pediatrics) program, Department of Tropical Pediatrics, Faculty of Tropical Medicine, Mahidol University evaluates key performance based on the curriculum that meets the standards of Thai Qualifications Framework following conditions: (1) the compulsory performance indicators (numbers 1-5) must pass beyond expectations, and (2) the total number of performance indicators must reach their goal by not less than 80 percent each year. The Key Performance Indicators are as follows:

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Key Performance Indicators	Academic Year				
	2018	2019	2020	2021	2022
1. At least 80% of all in charge of the curriculum in each program have to participate in meetings that set up plans to evaluate and revise the curriculum.	/	/	/	/	/
2. The program must have the details of the curriculum according to TQF2 which is associated with the Thai Qualifications Framework or the standards of the program (if any)	/	/	/	/	/
3. The program must have course specifications and field experience specifications (if any) according to TQF3 and TQF4 before the beginning of each semester.	/	/	/	/	/
4. Instructors must produce course reports and file experience reports (if any) according to TQF5 and TQF6 within 30 days after the end of the semester.	/	/	/	/	/
5. Instructors must produce program reports according to TQF7 within 60 days after the end of the academic year	/	/	/	/	/
6. Instructors must revise the grading of students according to learning standards indicated in TQF3 and TQF4 (if any) for at least 25 percent of courses that are offered each academic year.	/	/	/	/	/
7. Instructors must assess the development and/or improvement of teaching methods, teaching techniques or the grading system from the evaluation results in TQF 7 of the previous year.		/	/	/	/
8. Every new instructor (if any) has to participate in the orientation and receive adequate information on the college's teaching requirements.	/	/	/	/	/
9. Full-time instructors must demonstrate academic and/or profession improvement at least once a year.	/	/	/	/	/
10. The number of supporting staff (if any) who demonstrate academic and/or professional improvement by at least 50 percent each year.	/	/	/	/	/
11. The level of satisfaction from the previous year's students and new graduates toward curriculum quality, with an average score of at least 3.5 out of 5		/	/	/	/

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Key Performance Indicators	Academic Year				
	2018	2019	2020	2021	2022
12. The level of satisfaction from employers of new graduates with an average score of at least 3.5 out of 5			/	/	/
Total key performance indicators (items) for each year	9	11	12	12	12
Required performance indicators (items)	8	9	10	10	10
Performance indicators that need to pass expectations	1-5	1-5	1-5	1-5	1-5

Section 8 Evaluation and improvement of the curriculum implementation

1. Evaluation on the teaching efficiency

1.1 Evaluation of teaching strategies

Program committee will annually evaluate teaching strategies based on student learning outcomes, instructors' and students' evaluation. Modification or adjustment may be done if indicated, under the decision of program committee. The student learning outcome will be evaluated via final grading. The instructors' evaluation will be performed via group discussion. The students' evaluation process will be performed via in-depth exit interview.

1.2 Evaluation of lecturers' skills in using teaching strategies

Each instructor will be evaluated each year by an assigned committee and students' opinion. Teaching skills will be determined by teaching performance, punctuality, teaching plan and materials.

2. Overall evaluation of the curriculum

The overall curriculum will be evaluated every 5 academic cycles from annual quality assessment (TQF7) and stakeholders including students, graduates, instructors, employers of graduates and experts in this field. The evaluation includes self assessment for achievement (students and graduates), satisfaction on required capabilities (graduates, employers and instructors), responsibility (employers and instructors), professional and global trend and requirement (employers, World Health Assembly, other expert opinion, and etc).

3. Evaluation of curriculum implementation in accordance with the curriculum

The curriculum implementation will be evaluated annually using Key Performance Indicators (KPI) as shown in section 7.7 by a committee comprising of 1) Faculty in charge of the program 2) Member of internal quality assurance committee 3) External expert in this field. The KPI will be updated every 4 years.

The evaluation result will be interpreted as

“to be improved” when score < 10 for the first 10 KPI

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“good” when score = 10 for the first 10 KPI

“very good” when all KPI are achieved.

4. Review of the evaluation and plans for improvement

All applicable results will be reviewed every year by the program committee. The review results will be considered for program improvement.

APPENDIX A
Course Description

APPENDIX A
Course Description

(1) Required Course

		Credits (lecture-lab-field practice)
TMMH 502	Food- and Water-borne Diseases : Soil-Transmitted Helminthiases	3 (2-2-5)
วขอส ๕๐๒	โรคที่ติดต่อทางอาหารและน้ำ: หนอนพยาธิที่ติดต่อทางดิน Bacteria, viruses, protozoa, soil-transmitted helminthes; life cycle; pathogenesis; pathology; clinical manifestations; diagnosis; treatment; control; prevention แบคทีเรีย ไวรัส โปรโตซัว หนอนพยาธิที่ติดต่อทางดิน วงจรชีวิต พยาธิกำเนิด พยาธิสภาพ ลักษณะทางคลินิก การวินิจฉัย การรักษา การควบคุมโรค การป้องกัน	
TMMH 503	Food- and Water-borne Diseases : Tissue Parasites	2 (2-0-4)
วขอส ๕๐๓	โรคที่ติดต่อทางอาหารและน้ำ: ปรสิตในเนื้อเยื่อ Pathogens; intermediate hosts; pathogenesis; pathology; clinical manifestation; diagnosis; management; prevention and control ปรสิตก่อโรค โฮสต์กึ่งกลาง พยาธิกำเนิด พยาธิสภาพ ลักษณะทางคลินิก การวินิจฉัย การรักษา การป้องกันและควบคุมโรค	
TMMH 504	Important Mosquito-borne Diseases	3 (3-0-6)
วขอส ๕๐๔	โรคติดต่อสำคัญที่นำโดยยุง Malaria, dengue infection, Japanese encephalitis and lymphatic filariasis; epidemiology; pathogens; mosquito vectors; life cycle; pathogenesis; pathology; clinical manifestations treatment; prevention and control มาลาเรีย ไข้เลือดออก ไข้สมองอักเสบเจอี โรคเท้าช้าง ระบาดวิทยา เชื้อก่อโรค ยุงนำโรค วงจรชีวิต พยาธิกำเนิด พยาธิสภาพ ลักษณะทางคลินิก การวินิจฉัย การรักษา การป้องกันและควบคุมโรค	
TMTP 510	Seminar in Tropical Pediatrics	3 (3-0-6)
วขมข ๕๑๐	สัมมนากุมารเวชศาสตร์เขตร้อน Knowledge in tropical pediatrics using evidence-based data; ethical consideration in tropical pediatric research ความรู้ทางกุมารเวชศาสตร์เขตร้อนโดยใช้ข้อมูลหลักฐานเชิงประจักษ์; ข้อพิจารณาทางจริยธรรมในการวิจัยทางกุมารเวชศาสตร์เขตร้อน	

Credits (lecture-lab-field practice)

TMTP 511 วชมข ๕๑๑	Common Pediatric Problems ปัญหาทางกุมารเวชศาสตร์ที่พบบ่อย Common pediatric problems; clinical presentation in pediatrics; differential diagnosis; investigation; management of the common pediatric problems ปัญหาทางกุมารเวชศาสตร์ที่พบบ่อย ลักษณะทางคลินิกในกุมารเวชศาสตร์ การวินิจฉัยแยกโรค การสืบค้น การจัดการปัญหาทางกุมารเวชศาสตร์ที่พบบ่อย	2 (2-0-4)
TMTP 513 วชมข ๕๑๓	Tropical Pediatric Apprenticeship เวชปฏิบัติในกุมารเวชศาสตร์เขตร้อน Clinical practice in diagnosis; plan of treatment and management of tropical pediatric problems; pediatric health counseling ฝึกปฏิบัติทางคลินิกด้านการวินิจฉัย การวางแผนการรักษาและการจัดการปัญหาในกุมารเวชศาสตร์เขตร้อน การให้คำปรึกษาทางสุขภาพเด็ก	4 (1-6-5)

(2) Elective subjects

TMID 510 วขสว ๕๑๐	Statistics for Clinical Research สถิติสำหรับการวิจัยทางคลินิก Statistical methods and their application in clinical research consisting of basic concepts; statistical methodology; chance or error from sampling; correlation; linear regression; survival analysis; sample size estimation วิธีทางสถิติและการประยุกต์ในการวิจัยด้านคลินิก แนวคิดพื้นฐาน ระเบียบวิธีทางสถิติ ความบังเอิญหรือข้อผิดพลาดจากการสุ่มตัวอย่าง การวิเคราะห์สหสัมพันธ์ การวิเคราะห์การถดถอยเชิงเส้น การวิเคราะห์การรอดชีพ การประมาณค่าขนาดตัวอย่าง	3 (2-2-5)
TMMH 501 วขอส ๕๐๑	Principle of Tropical Medicine and Hygiene หลักสำคัญเวชศาสตร์เขตร้อนและสุขวิทยา Fundamental knowledge in tropical diseases and hygiene; etiologies; hosts; vectors; environment; impact of nutrition; immunity and behavioral risks of diseases; epidemiology; disease control and prevention; holistic management ความรู้พื้นฐานด้านโรคเขตร้อนและสุขวิทยา สาเหตุของโรค โฮสต์ พาหะนำโรค สภาพแวดล้อม ผลกระทบจากภาวะโภชนาการ ภูมิคุ้มกัน และพฤติกรรมที่เสี่ยงต่อการเกิดโรค ระบาดวิทยา การควบคุมและป้องกันโรค การดูแลรักษาผู้ป่วยแบบองค์รวม	3 (3-0-6)

Credits (lecture-lab-field practice)

TMMH 505	Non-Mosquito Vector-borne Diseases and Zoonoses	2 (2-0-4)
วขอส ๕๐๕	โรคติดต่อจากพาหะอื่นนอกจากยุงและโรคติดต่อจากสัตว์สู่คน Epidemiology; pathogens; vectors; life cycle; pathogenesis; pathology; clinical manifestations; diagnosis; treatment; prevention and control ระบาดวิทยา เชื้อก่อโรค พาหะนำโรค วงจรชีวิต พยาธิกำเนิด พยาธิสภาพ ลักษณะทางคลินิก การวินิจฉัย การรักษา การป้องกันและควบคุมโรค	
TMMH 506	Sexually Transmitted Diseases and Human Immunodeficiency Virus Related Problems	2 (2-0-4)
วขอส ๕๐๖	โรคติดต่อทางเพศสัมพันธ์และปัญหาที่เกี่ยวข้องกับการติดเชื้อไวรัสเอชไอวี Sexually transmitted diseases; Human Immunodeficiency Virus infection; AIDS related opportunistic infections; epidemiology; pathogen; pathogenesis; pathology; clinical manifestations; diagnosis, treatment; prevention and control โรคติดต่อทางเพศสัมพันธ์ การติดเชื้อไวรัสเอชไอวี โรคติดเชื้อฉวยโอกาสในผู้ป่วยโรคเอดส์ ระบาดวิทยา เชื้อก่อโรค พยาธิกำเนิด พยาธิสภาพ ลักษณะทางคลินิก การวินิจฉัย การดูแลรักษา การป้องกันและควบคุมโรค	
TMMH 507	General Health Problems and Common Diseases in the Tropics	2 (2-0-4)
วขอส ๕๐๗	ปัญหาสุขภาพทั่วไปและโรคที่พบบ่อยในเขตร้อน Health problems and common diseases in the tropics; etiologies, risk factors, clinical manifestations, diagnosis, treatment, control, prevention ปัญหาสุขภาพและโรคที่พบบ่อยในเขตร้อน สาเหตุ ปัจจัยเสี่ยง ลักษณะทางคลินิก การวินิจฉัยโรค การดูแลรักษา การควบคุม การป้องกันโรค	
TMTP 512	General Pediatric Apprenticeship	4 (2-4-6)
วขมข ๕๑๒	เวชปฏิบัติในกุมารเวชศาสตร์ทั่วไป Clinical practice in diagnosis; plan of treatment and management of general pediatric problems ฝึกปฏิบัติทางคลินิกด้านการวินิจฉัย การวางแผนการรักษาและการจัดการปัญหาในกุมารเวชศาสตร์ทั่วไป	
TMTP 514	Critical Review in Tropical Pediatrics	2 (2-0-4)
วขมข ๕๑๔	ทบทวนแบบพิเคราะห์ทางกุมารเวชศาสตร์เขตร้อน Assembling knowledge in tropical pediatrics from criticizing medical articles การรวบรวมความรู้ในกุมารเวชศาสตร์เขตร้อนโดยพิจารณาบทความทางการแพทย์	

(3) Thesis**Credits (lecture-lab-field practice)**

TMTP 698	Thesis	12 (0-36-0)
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วชมข ๖๙๘	วิทยานิพนธ์	
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Identifying research question on tropical pediatrics; developing research proposal, conducting research with concern of research ethics, data collection, analysis, interpretation of the result, presenting and publishing research in academic journals or a conference's proceeding

การกำหนดปัญหาวิจัยด้านกุมารเวชศาสตร์เขตร้อน การพัฒนาโครงร่างวิจัย การดำเนินการวิจัยอย่างมีจริยธรรม การเก็บ การวิเคราะห์ข้อมูล การแปลผล การนำเสนอ การตีพิมพ์ผลงานวิทยานิพนธ์ ในวารสารทางวิชาการ หรือเสนอต่อที่ประชุมวิชาการ

(4) Thematic paper

TMTP 697	THEMATIC PAPER	6 (0-0-18)
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วชมข ๖๙๗	สารนิพนธ์	
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Identifying questions in tropical pediatrics, searching knowledge to solve the questions by conducting research, presenting or publishing the results

การกำหนดปัญหาทางกุมารเวชศาสตร์เขตร้อน การหาความรู้เพื่อตอบปัญหาโดยการวิจัย การนำเสนอผลที่ได้

APPENDIX B

List of Lecturers in Charge of the Curriculum

APPENDIX B

Curriculum Vitae of the Faculty instructors

Curriculum Vitae of the full time instructors of the curriculum

1. Name: Associate Professor Chukiatt Sirivichayakul

Qualification

Degree	Branch	Institute	Year
Dip. Thai Board of Pediatrics	Pediatrics	Thai Medical Council (Chulalongkron University)	1991
D.T.M.&H.	-	Mahidol University	1997
M.D.	-	Chulalongkron University	1985

Office Department of Tropical Pediatric, Faculty of Tropical Medicine, Mahidol University

Interested research/ expertise Pediatric infectious disease, Vaccine research

Publication that are not parts of any degree study and are complied with the criteria for academic position appointment within 5 years

Potiwat R, Tanyaratsrisakul S, Maneewatchararangsri S, Manuyakorn W, Rerkpattanapipat T, Samung Y, **Sirivichayakul C**, Chaicumpa W, Sitcharungsri R. Solenopsis geminata (tropical fire ant) anaphylaxis among Thai patients: its allergens and specific IgE-reactivity. Asian Pac J Allergy Immunol 2017. doi: 10.12932/AP-100217-0012.

Yamagishi J, Runtuwene LR, Hayashida K, Mongan AE, Thi LAN, Thuy LN, Nhat CN, Limkittikul K, **Sirivichayakul C**, Sathirapongsasuti N, Frith M, Makalowski W, Eshita Y, Sugano S, Suzuki Y. Serotyping dengue virus with isothermal amplification and a portable sequencer. Sci Rep 2017;7(1):3510.

Chatchen S, Sabchareon A, **Sirivichayakul C**. Serodiagnosis of asymptomatic dengue infection. Asian Pac J Trop Med 2017;10(1):11-4.

Sirivichayakul C, Chanthavanich P, Limkittikul K, Siegrist CA, Wijagkanalan W, Chinwangso P, Petre J, Hong Thai P, Chauhan M, Viviani S. Safety and immunogenicity of a combined Tetanus, Diphtheria, recombinant acellular Pertussis vaccine (TdaP) in healthy Thai adults. Hum Vaccin Immunother 2017;13(1):136-43.

Chokephaibulkit K, **Sirivichayakul C**, Thisyakorn U, Pancharoen C, Boaz M, Bouckennooghe A, Feroldi E. Long-term follow-up of Japanese encephalitis chimeric virus vaccine: Immune responses in children. Vaccine 2016;34(46):5664-9.

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- Plennevaux E, Sabchareon A, Limkittikul K, Chanthavanich P, **Sirivichayakul C**, Moureau A, Boaz M, Wartel TA, Saville M, Bouckennooghe A. Detection of dengue cases by serological testing in a dengue vaccine efficacy trial: Utility for efficacy evaluation and impact of future vaccine introduction. *Vaccine* 2016;34(24):2707-12.
- Sirivichayakul C**, Barranco-Santana EA, Esquilin-Rivera I, Oh HM, Raanan M, Sariol CA, Shek LP, Simasathien S, Smith MK, Velez ID, Wallace D, Gordon GS, Stinchcomb DT. Safety and Immunogenicity of a Tetravalent Dengue Vaccine Candidate in Healthy Children and Adults in Dengue-Endemic Regions: A Randomized, Placebo-Controlled Phase 2 Study. *J Infect Dis* 2016;213(10):1562-72.
- Fortuna L, **Sirivichayakul C**, Watanaveeradej V, Soonthornworasiri N, Sitcharungsi R. Adverse events Post-DTAP and DTWP Vaccination in Thai Children. *Southeast Asian J Trop Med Public Health* 2015;46(4):764-74.
- Lee JS, Mogasale V, Lim JK, Carabali M, **Sirivichayakul C**, Anh DD, Lee KS, Thiem VD, Limkittikul K, Tho le H, Velez ID, Osorio JE, Chanthavanich P, da Silva LJ, Maskery BA. A Multi-country Study of the Household Willingness-to-Pay for Dengue Vaccines: Household Surveys in Vietnam, Thailand, and Colombia. *PLoS Negl Trop Dis* 2015;9(9):e0004070.
- Rahimi BA, Thakkestian A, White NJ, **Sirivichayakul C**, Dondorp AM, Chokejindachai W. Severe vivax malaria: a systematic review and meta-analysis of clinical studies since 1900. *Malar J* 2014;13:481.
- Sirivichayakul C**, Sabchareon A, Limkittikul K, Yoksan S. Plaque reduction neutralization antibody test does not accurately predict protection against dengue infection in Ratchaburi cohort, Thailand. *Virol J* 2014;11:48.
- Namvongsa V, **Sirivichayakul C**, Songsithichok S, Chanthavanich P, Chokejindachai W, Sitcharungsi R. Differences in clinical features between children and adults with dengue hemorrhagic fever/dengue shock syndrome. *Southeast Asian J Trop Med Public Health* 2013;44(5):772-9.
- Sitcharungsi R, Bunupuradah T, Pornvoranunt A, Apornpong T, Ananworanich J, Khupulsup K, Nouanthong P, Vilaiyuk S, Phasomsap C, Kamchaisatian W, Pancharoen C, Puthanakit T, **Sirivichayakul C**, Benjaponpitak S. Immunoglobulin values in healthy Thai children aged \leq 24 months determined by nephelometry. *Asian Pac J Allergy Immunol* 2013;31(4):307-13.
- Jain VK, Rivera L, Zaman K, Espos RA Jr, **Sirivichayakul C**, Quiambao BP, Rivera-Medina DM, Kerdpanich P, Ceyhan M, Dinleyici EC, Cravioto A, Yunus M, Chanthavanich P, Limkittikul K, Kurugol Z, Alhan E, Caplanusi A, Durviaux S, Boutet P, Ofori-Anyinam O, Chandrasekaran V, Dbaibo G, Innis BL. Vaccine for prevention of mild and moderate-to-severe influenza in children. *N Engl J Med* 2013;369(26):2481-91.
- Pasaribu AP, Chokejindachai W, **Sirivichayakul C**, Tanomsing N, Chavez I, Tjitra E, Pasaribu S, Imwong M, White NJ, Dondorp AM. A randomized comparison of dihydroartemisinin-piperaquine and

artesunate-amodiaquine combined with primaquine for radical treatment of vivax malaria in Sumatera, Indonesia. *J Infect Dis* 2013;208(11):1906-13.

Takeño S, Wisanuyotin S, Jiravuttipong A, **Sirivichayakul C**, Limkittikul K. Risk factors and outcome of atypical acute post-streptococcal glomerulonephritis in pediatrics. *Southeast Asian J Trop Med Public Health* 2013;44(2):281-8.

Sitcharungsi R, **Sirivichayakul C**. Allergic diseases and helminth infections. *Pathog Glob Health* 2013;107(3):110-5.

Recent teaching courses

TMID	525	Food- and Water-borne Diseases (I) and Soil-transmitted Helminthiases	3 (2-2-5)
TMID	526	Food- and Water-borne Diseases (II) (Tissue Parasites)	2 (2-0-4)
TMID	527	Important Mosquito-borne Diseases	3 (2-2-5)
TMID	530	Common Health Problems and Diseases in the Tropics	2 (2-0-4)
TMTTP	501	Pediatric Problems in the Tropics	2 (2-0-4)
TMTTP	504	Management of Common Pediatric Problems	2 (2-0-4)
TMTTP	506	Pediatric Apprenticeship I	4 (1-6-5)
TMTTP	507	Pediatric Apprenticeship II	4 (1-6-5)
TMTTP	509	Critical Review in Pediatrics	3 (3-0-6)
TMTTP	510	Seminar in Tropical Pediatrics	3 (3-0-6)
TMTTP	697	Thematic paper	6 (0-18-0)
TMTTP	698	Thesis	12 (0-36-0)

Teaching course after program revised

TMMH	501	Principal of Tropical Medicine and Hygiene	3 (3-0-6)
TMMH	502	Food-and Waterborne Diseases: Soil-transmitted Helminthiases	3 (2-2-5)
TMMH	503	Food-and Waterborne Diseases: Tissue Parasites	2 (2-0-4)
TMMH	504	Important Mosquito-borne Diseases	3 (3-0-6)
TMMH	506	Sexually Transmitted Diseases and Human Immunodeficiency Virus Related Problems	2 (2-0-4)
TMMH	507	General Health Problems and Common Diseases in the Tropics	2 (2-0-4)
TMTTP	510	Seminar in Tropical Pediatrics	3 (3-0-6)
TMTTP	511	Common Pediatric Problems	2 (2-0-4)
TMTTP	512	General Pediatric Apprenticeship	4 (2-4-6)
TMTTP	513	Tropical Pediatric Apprenticeship	4 (1-6-5)

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TMTP	514	Critical Review in Tropical Pediatrics	2 (2-0-4)
TMTP	697	Thematic paper	6 (0-18-0)
TMTP	698	Thesis	12 (0-36-0)

2. Name: Associate Professor Kriengsak Limkittikul

Qualification

Degree	Branch	Institute	Year
Dip. Thai Board of Pediatrics	Pediatrics	Thai Medical Council (Khonkaen university)	1999
Diploma	Virus	Institute of Tropical Medicine, Nagasaki University, Nagasaki, Japan	2001
D.T.M.&H.	-	Mahidol university	2006
M.D.	-	Mahidol university	1995

Office Department of Tropical Pediatric, Faculty of Tropical Medicine, Mahidol University

Interested research/ expertise Pediatric infectious disease, Vaccine research

Publication that are not parts of any degree study and are complied with the criteria for academic position appointment within 5 years

Sirivichayakul C, Chanthavanich P, **Limkittikul K**, Siegrist CA, Wijagkanalan W, Chinwangso P, Petre J, Hong Thai P, Chauhan M, Viviani S. Safety and immunogenicity of a combined Tetanus, Diphtheria, recombinant acellular Pertussis vaccine (TdaP) in healthy Thai adults. *Human Vaccines & Immunotherapeutics* 2017;13(1):136-43.

Chatchen S, Ibrahim S, Wisetsing P, **Limkittikul K**. Long-term protective rabies antibodies in Thai children after pre-exposure rabies vaccination. *Southeast Asian J Trop Med Public Health* 2017;48(2):306-12.

Yamagishi J, Runtuwene LR, Hayashida K, Mongan AE, Thi LAN, Thuy LN, Nhat CN, **Limkittikul K**, Sirivichayakul C, Sathirapongsasuti N, Frith M, Makalowski W, Eshita Y, Sugano S, Suzuki Y. Serotyping dengue virus with isothermal amplification and a portable sequencer. *Scientific Reports* 2017;DOI 10.1038/s41598-017-03734-5.

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Plennevaux E, Sabchareon A, **Limkittikul K**, Chanthavanich P, Sirivichayakul C, Moureau A, Boaz M, Wartel TA, Saville M, Bouckennooghe A. Detection of dengue cases by serological testing in a dengue vaccine efficacy trial; utility for efficacy evaluation and impact of future vaccine introduction. *Vaccine* 2016;34:2707-2712.

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- Chatchen S, **Limkittikul K**, Sriburin P, Sabchareon A, Sirivichayakul C. Monoclonal antibody-based enzyme immunoassay for epidemiological studies of asymptomatic dengue infection. *Advances in Infectious Diseases* 2016 September;6:113-119.
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- Rattanamahaphoom J, Leungwutiwong P, **Limkittikul K**, Kosoltanapiwat N, Srikaitkhachorn A. Activation of Dengue Virus-Specific T Cells Modulates Vascular Endothelial Growth Factor Receptor 2 Expression. *Asian Pac J Allergy Immunol*. 2016 Dec 12.
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- Phanthanawiboon S, A-nuegoonpipat A, Panngarm N, **Limkittikul K**, Ikuta K, Anantapreecha S, Kurosu T. Isolation and propagation of dengue virus in vero and BHK-21 cells expressing human DC-SIGN stably. *J Virol Methods* 2014;209:55-61.
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- Jain VK, Rivera L, Zaman K, Espos RA Jr, Sirivichayakul C, Quiambao BP, Rivera-Medina DM, Kerdpanich P, Ceyhan M, Dinleyici EC, Cravioto A, Yunus M, Chanthavanich P, **Limkittikul K**, Kurugol Z, Alhan E, Caplanusi A, Durviaux S, Boutet P, Ofori-Anyinam O, Chandrasekaran V, Dbaibo G, Innis BL. Vaccine for prevention of mild and moderate-to-severe influenza in children. *N Engl J Med*. 2013;369(26):2481-91.
- Pambudi S, Kawashita N, Phanthanawiboon S, Omokoko MD, Masrinoul P, Yamashita A, **Limkittikul K**, Yasunaga T, Takagi T, Ikuta K, Kurosu T. A small compound targeting the interaction between nonstructural proteins 2B and 3 inhibits dengue virus replication. *Biochem Biophys Res Commun*. 2013;440(3):393-8.

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- Lupisan S, **Limkittikul K**, Sosa N, Chanthavanich P, Bianco V, Baine Y, Van der Wielen M, Miller JM. Meningococcal polysaccharide A O-acetylation levels do not impact the immunogenicity of the quadrivalent meningococcal tetanus toxoid conjugate vaccine: results from a randomized, controlled phase III study of healthy adults aged 18 to 25 years. *Clin Vaccine Immunol.* 2013;20(10):1499-507.
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- Sasaki T, Setthapramote C, Kurosu T, Nishimura M, Asai A, Omokoko MD, Pipattanaboon C, Pitaksajjakul P, **Limkittikul K**, Sabchareon A, Chaichana P, Okabayashi T, Hirai I, Leungwutiwong P, Misaki R, Fujiyama K, Ono KI, Okuno Y, Ramasoota P, Ikuta K. Dengue virus neutralization and antibody-dependent enhancement activities of human monoclonal antibodies derived from dengue patients at acute phase of secondary infection. *Antiviral Research* 2013;98(3):423-31.

Recent teaching courses

TMID	525	Food- and Water-borne Diseases (I) and Soil-transmitted Helminthiases	3 (2-2-5)
TMID	526	Food- and Water-borne Diseases (II) (Tissue Parasites)	2 (2-0-4)
TMID	527	Important Mosquito-borne Diseases	3 (2-2-5)
TMID	530	Common Health Problems and Diseases in the Tropics	2 (2-0-4)
TMTP	501	Pediatric Problems in the Tropics	2 (2-0-4)
TMTP	504	Management of Common Pediatric Problems	2 (2-0-4)
TMTP	506	Pediatric Apprenticeship I	4 (1-6-5)
TMTP	507	Pediatric Apprenticeship II	4 (1-6-5)
TMTP	509	Critical Review in Pediatrics	3 (3-0-6)
TMTP	510	Seminar in Tropical Pediatrics	3 (3-0-6)
TMTP	697	Thematic paper	6 (0-18-0)
TMTP	698	Thesis	12 (0-36-0)

Teaching course after program revised

TMMH	501	Principal of Tropical Medicine and Hygiene	3 (3-0-6)
TMMH	502	Food-and Waterborne Diseases: Soil-transmitted Helminthiases	3 (2-2-5)

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The Mahidol University council has approved the adjusted program on 18 April, 2018

TMMH	503	Food-and Waterborne Diseases: Tissue Parasites	2 (2-0-4)
TMMH	504	Important Mosquito-borne Diseases	3 (3-0-6)
TMMH	506	Sexually Transmitted Diseases and Human Immunodeficiency Virus Related Problems	2 (2-0-4)
TMMH	507	General Health Problems and Common Diseases in the Tropics	2 (2-0-4)
TMTP	510	Seminar in Tropical Pediatrics	3 (3-0-6)
TMTP	511	Common Pediatric Problems	2 (2-0-4)
TMTP	512	General Pediatric Apprenticeship	4 (2-4-6)
TMTP	513	Tropical Pediatric Apprenticeship	4 (1-6-5)
TMTP	514	Critical Review in Tropical Pediatrics	2 (2-0-4)
TMTP	697	Thematic paper	6 (0-18-0)
TMTP	698	Thesis	12 (0-36-0)

3. Name: Assistant Professor Weerawan Hattasingh

Qualification

Degree	Branch	Institute	Year
Dip. Thai Board of Pediatric Infectious Diseases	Pediatrics infectious diseases	Thai Medical Council (Chulalongkorn university)	2009
Dip. Thai Board of Pediatrics	Pediatrics	Thai Medical Council (QSNICH)	2002
D.T.M.&H.	-	Mahidol university	2011
M.D.	-	Mahidol university	1996

Office Department of Tropical Pediatric, Faculty of Tropical Medicine, Mahidol University

Interested research/ expertise Pediatric infectious disease, Vaccine research

Publication that are not parts of any degree study and are complied with the criteria for academic position appointment within 5 years

Hattasingh W, Pengsaa K, Thisyakorn U; 1st Workshop on National Immunization Programs and Vaccine Coverage in ASEAN Group. Report on: "The 1st Workshop on National Immunization Programs and Vaccine Coverage in ASEAN Countries, April 30, 2015, Pattaya, Thailand". *Vaccine* 2016;34(10):1233-40.

Khamim K, **Hattasingh W**, Nisalak A, Kaewkungwal J, Fernandez S, Thaisomboonsuk B, Pengsaa K, Thisyakorn U. Neutralizing dengue antibody in pregnant Thai women and cord blood. *PLoS Negl Trop Dis* 2015;9(2):e0003396.

Pengsaa K, **Hattasingh W**. Congenital toxoplasmosis: an uncommon disease in Thailand. *Paediatrics and International Child Health* 2015;35(1):56-60.

Tanayapong S, Khamim K, **Hattasingh W**, Kaewkungwal J, Pengsaa K, Thisyakorn U. Maternally Transferred Antibody of Dengue and Chikungunya Viruses in Pregnant Thai Women and Their Infants. *J Health Science* 2013;22(4):557-65.

Recent teaching courses

TMID	525	Food- and Water-borne Diseases (I) and Soil-transmitted Helminthiases	3 (2-2-5)
TMID	530	Common Health Problems and Diseases in the Tropics	2 (2-0-4)
TMTTP	501	Pediatric Problems in the Tropics	2 (2-0-4)
TMTTP	504	Management of Common Pediatric Problems	2 (2-0-4)
TMTTP	506	Pediatric Apprenticeship I	4 (1-6-5)
TMTTP	507	Pediatric Apprenticeship II	4 (1-6-5)

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TMTF	509	Critical Review in Pediatrics	3 (3-0-6)
TMTF	510	Seminar in Tropical Pediatrics	3 (3-0-6)
TMTF	697	Thematic paper	6 (0-18-0)
TMTF	698	Thesis	12 (0-36-0)

Teaching course after program revised

TMMH	501	Principal of Tropical Medicine and Hygiene	3 (3-0-6)
TMMH	502	Food-and Waterborne Diseases: Soil-transmitted Helminthiases	3 (2-2-5)
TMMH	503	Food-and Waterborne Diseases: Tissue Parasites	2 (2-0-4)
TMMH	504	Important Mosquito-borne Diseases	3 (3-0-6)
TMMH	506	Sexually Transmitted Diseases and Human Immunodeficiency Virus Related Problems	2 (2-0-4)
TMMH	507	General Health Problems and Common Diseases in the Tropics	2 (2-0-4)
TMTF	510	Seminar in Tropical Pediatrics	3 (3-0-6)
TMTF	511	Common Pediatric Problems	2 (2-0-4)
TMTF	512	General Pediatric Apprenticeship	4 (2-4-6)
TMTF	513	Tropical Pediatric Apprenticeship	4 (1-6-5)
TMTF	514	Critical Review in Tropical Pediatrics	2 (2-0-4)
TMTF	697	Thematic paper	6 (0-18-0)
TMTF	698	Thesis	12 (0-36-0)

4. Name: Lecturer Dr. Supawat Chatchen

Qualification

Degree	Branch	Institute	Year
Ph.D.	Molecular Genetics and Genetic Engineering	Mahidol university	2005
M.Sc.	Medical Science	Mahidol University	1999
D.T.M.&H.	-	Mahidol university	2014
M.D.	-	Mahidol university	2008

Office Department of Tropical Pediatric, Faculty of Tropical Medicine, Mahidol University

Interested research/ expertise Pediatric infectious disease, Vaccine research, Immunogenicity of Dengue infection

Publication that are not parts of any degree study and are complied with the criteria for academic position appointment within 5 years

Chatchen S, Ibrahim S, Wisetsing P, Limkittikul K. Long-term protective rabies antibodies in Thai children after pre-exposure rabies vaccination. Southeast Asian J Trop Med Public Health 2017;48(2):306-12.

Chutipongtanate S, **Chatchen S**, Svasti J. Plasma prefractionation methods for proteomic analysis and perspectives in clinical applications. Proteomics Clin Appl. 2017.

Chatchen S, Sabchareon A, Sirivichayakul C. Serodiagnosis of asymptomatic dengue infection. Asian Pac J Trop Med. 2017;10(1):11-14.

Chatchen S, Limkittikul K, Sriburin P, Sabchareon A, Sirivichayakul C. Monoclonal antibody-based enzyme immunoassay for epidemiological studies of asymptomatic dengue infection. Advances in Infectious Diseases 2016;6:113-119.

Thaipadungpanit J, Chierakul W, Pattanaporkrattana W, Phoodaeng A, WongsuvanG, Huntrakun V, Amornchai P, **Chatchen S**, Kitphati R, Wuthiekanun V, Day NP, Peacock SJ, Limmathurotsakul D. Burkholderia pseudomallei in water supplies, southern Thailand. Emerg Infect Dis. 2014;20(11):1947-9.

Recent teaching courses

TMID 524	Fundamental of Tropical Medicine and Hygiene	3 (2-2-5)
TMID 525	Food- and Water-borne Diseases (I) and Soil-transmitted Helminthiases	3 (2-2-5)
TMID 526	Food- and Water-borne Diseases (II) (Tissue Parasites)	2 (2-0-4)

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TMID	527	Important Mosquito-borne Diseases	3 (2-2-5)
TMID	530	Common Health Problems and Diseases in the Tropics	2 (2-0-4)
TMTF	504	Management of Common Pediatric Problems	2 (2-0-4)
TMTF	506	Pediatric Apprenticeship I	4 (1-6-5)
TMTF	507	Pediatric Apprenticeship II	4 (1-6-5)
TMTF	509	Critical Review in Pediatrics	3 (3-0-6)
TMTF	510	Seminar in Tropical Pediatrics	3 (3-0-6)
TMTF	697	Thematic paper	6 (0-18-0)

Teaching course after program revised

TMMH	501	Principal of Tropical Medicine and Hygiene	3 (3-0-6)
TMMH	502	Food-and Waterborne Diseases: Soil-transmitted Helminthiases	3 (2-2-5)
TMMH	503	Food-and Waterborne Diseases: Tissue Parasites	2 (2-0-4)
TMMH	504	Important Mosquito-borne Diseases	3 (3-0-6)
TMMH	507	General Health Problems and Common Diseases in the Tropics	2 (2-0-4)
TMTF	510	Seminar in Tropical Pediatrics	3 (3-0-6)
TMTF	511	Common Pediatric Problems	2 (2-0-4)
TMTF	512	General Pediatric Apprenticeship	4 (2-4-6)
TMTF	513	Tropical Pediatric Apprenticeship	4 (1-6-5)
TMTF	514	Critical Review in Tropical Pediatrics	2 (2-0-4)
TMTF	697	Thematic paper	6 (0-18-0)

Curriculum Vitae of the full time instructors

1. Name: Professor Dr. Kesinee Chotivanich

Education

Degree	Degree Name	Institute	Year
Ph.D.	Pathobiology	Mahidol University	1998
M.Sc.	Pathobiology	Mahidol University	1995
B.N.S.	Nursing	Mahidol University	1992

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Pathophysiology of malaria
2. Cultivation of human malaria parasite
3. In vitro susceptibility drugs of *P. falciparum*, *P. vivax*

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Saiwaew S, Sritabal J, Piaraksa N, Keayarsa S, Ruengweerayut R, Utaisin C, Sila P, Niramis R, Udomsangpetch R, Charunwatthana P, Pongponratn E, Pukrittayakamee S, Leitgeb AM, Wahlgren M, Lee SJ, Day NP, White NJ, Dondorp AM, **Chotivanich K**. Effects of sevuparin on rosette formation and cytoadherence of *Plasmodium falciparum* infected erythrocytes. PloS one. 2017;12(3):e0172718

2. Name: Professor Dr. Polrat Wilairatana

Education

Degree	Degree Name	Institute	Year
Ph.D.	Tropical Medicine	Mahidol University	2000
Dip. Thai Board	Preventive Medicine (Travel Medicine)	Thai Medical Council	2016
Dip. Thai Board	Infectious Diseases	Thai Medical Council	2004
Dip. Thai Board	Gastroenterology	Thai Medical Council	1997
Dip. Thai Board	Internal Medicine	Thai Medical Council	1990
M.D.	-	Mahidol University	1984

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The Mahidol University council has approved the adjusted program on 18 April, 2018

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Malaria

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Adams P, Prakobtham S, Limpattarachoen C, Suebtrakul S, Vutikes P, Khusmith S, *Wilairatana P*, et al. Ethical issues of informed consent in malaria research proposals submitted to a research ethics committee in Thailand: a retrospective document review. BMC medical ethics. 2017;18(1):50.

3. Name: Professor Punnee Pitisuttithum

Education

Degree	Degree Name	Institute	Year
Dip. Thai Board	Internal Medicine	Thai Medical Council	1993
D.C.M.	-	Mahidol University	1992
D.T.M.&H.	-	Mahidol University	1984
M.B., B.S.	-	“University of Delhi, India”	1982

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Tropical medicine
2. Clinical studies (Phase I, II, III drug trials) of tropical diseases eg. Cryptococcal meningitis in AIDS; oral candidiasis, Chinese herbal medicine for AIDS
3. Vaccine trials (Phase I, II, III) of HIV/AIDS vaccine, Human Papilloma Virus vaccine against cervical cancer, Cholera oral vaccine, Shigella vaccine, Rota virus vaccine, Varicella vaccine, Measle vaccine, etc.

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Wang Y, Whittall T, Neil S, Britton G, Mistry M, Rerks-Ngarm S, *Pitisuttithum P*, et al. A novel mechanism linking memory stem cells with innate immunity in protection against HIV-1 infection. Scientific reports. 2017;7(1):1057.

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The Mahidol University council has approved the adjusted program on 18 April, 2018

4. Name Professor Dr. Rungsunn Tungtrongchitr

Education

Degree	Degree Name	Institute	Year
Ph.D. (Trop. Med.)	Tropical Medicine	Mahidol Univesity	1988
M.Sc. (Trop. Med.)	Tropical Medicine	Mahidol Univesity	1981
B.Sc. (Med. Tech.)	Med. Tech.	Mahidol Univesity	1978

Office: Department of Tropical Nutrition and Food Science, Faculty of Tropical Medicine,
Mahidol University

Interesting Research Topics or Specialties

1. Biochemistry
2. Nutrition
3. Molecular Biology
4. Nutrigenomics

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Tungtrongchitr A, Jumpasri J, Sookrung N, Visitsunthorn N, Tantilipikorn P, Piboonpocanan O, Indrawattana N, *Tungtrongchitr R*, et al. Alteration of -656(G/T) and -607(C/A) polymorphisms in interleukin-18 (IL-18) gene in house dust mite-sensitive allergic rhinitis patients in Thailand. *Genet Mol Res.* 2017 Jul 6;16(3).

5. Name: Professor Dr. Sasithon Pukrittayakamee

Education

Degree	Degree Name	Institute	Year
D.Phil.	-	“University of Oxford, United Kingdom”	1985
Diploma	Clinical Science	Mahidol University	1982
D.T.M.&H.	-	Mahidol University	1981
M.B.B.S.	-	“University of Delhi, India”	1979

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

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The Mahidol University council has approved the adjusted program on 18 April, 2018

Interesting Research Topics or Specialties

1. Malaria
2. Antimalarial drugs
3. Influenza

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Thi SS, Parker DM, Swe LL, *Pukrittayakamee S*, Ling CL, Amornpaisarnloet K, et al. Migration histories of multidrug-resistant tuberculosis patients from the Thailand-Myanmar border, 2012-2014. The international journal of tuberculosis and lung disease : the official journal of the International Union against Tuberculosis and Lung Disease. 2017;21(7):753-8

6. Name: Professor Srivicha Krudsood**Education**

Degree	Degree Name	Institute	Year
Dip. Thai	Board in Internal Medicine	Thai Medical Council	1993
M.Sc.	Clinical Tropical Medicine	Mahidol University	1993
D.T.M.&H.	-	Mahidol University	1992
M.D.	-	Faculty of Medicine, Far Eastern University (Nicanor Reyes of Medical Foundation), Philippines	1990
B.Sc.	Biology	Chulalongkorn University	1984

Office: Department of Tropical Hygiene, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Clinical trial of anti-malarial drugs
2. Clinical management of malaria

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

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The Mahidol University council has approved the adjusted program on 18 April, 2018

1. Maneerattanasak S, Gosi P, **Krudsood S**, Chimma P, Tongshoob J, Mahakunkijcharoen Y, et al. Molecular and immunological analyses of confirmed *Plasmodium vivax* relapse episodes. Malar J. 2017 May 30;16(1):228.
-

7. Name: Professor Yaowalark sukthana

Education

Degree	Degree Name	Institute	Year
Dip. Thai.	Board of Oto-Rhino-Laryngology	Thai Medical Council	1996
M.C.T.M.	Clinical Tropical Medicine	Mahidol University	1996
D.T.M.&H.	-	Mahidol University	1995
Cert.	in Oto-Rhino-Laryngology	Mahidol University	1985
M.D. (Hons.)	-	Pramongkutkloa Medical College	1983
D.V.M.	-	Kasetsart University	1978

Office: Department of Protozoology, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Toxoplasmosis

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. van Enter BJD, Lau YL, Ling CL, Watthanaworawit W, **Sukthana Y**, Lee WC, et al. Seroprevalence of *Toxoplasma gondii* Infection in refugee and migrant pregnant women along the Thailand-Myanmar Border. Am J Trop Med Hyg. 2017 Jul;97(1):232-5.
-

8. Name: Associate Professor Benjaluck Phonrat

Education

Degree	Degree Name	Institute	Year
M.Sc.	Tropical Medicine	Mahidol University	1983
B.Sc.	Biology	Silpakorn University	1979

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 The Mahidol University council has approved the adjusted program on 18 April, 2018

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Metabolic syndrome and adipokine
2. Cytokine in diabetes mellitus
3. Clinical study in HIV vaccine

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Martinez Vega R, Phumratanaprapin W, *Phonrat B*, Dhitavat J, Sutherat M, Choovichian V. Differences in Liver Impairment Between Adults and Children with Dengue Infection. The American journal of tropical medicine and hygiene. 2016;94(5):1073-9.

9. Name: Associate Professor Dr. Chalit Komalamisra

Education

Degree	Degree Name	Institute	Year
Dr. Med. Sci.	Medical Helminthology	St. Marianna University, Japan	1991
D.A.P. & E	Applied Parasitology and Entomology	Institute for Medical Research, Malaysia	1984
M.Sc.	Tropical Medicine	Mahidol University	1983
B.Sc.	Biology	Silpakorn University	1977

Office: Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Medical Helminthology
2. Zoonosis
3. Community Health

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

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The Mahidol University council has approved the adjusted program on 18 April, 2018

1. Prasertbun R, Mori H, Pintong AR, Sanyanusin S, Popruk S, *Komalamisra C*, et al. Zoonotic potential of Enterocytozoon genotypes in humans and pigs in Thailand. *Vet Parasitol.* 2017 Jan 15;233:73-9.

10. Name Assoc. Prof. Dr. Direk Limmathurotsakul

Education

Degree	Degree Name	Institute	Year
Ph.D.	Life and Biomolecular Science	Open University, UK.	2008
M.Sc.	Statistics	London School of Hygiene and Tropical Medicine, UK.	2009
M.D.	-	Chulalongkorn University	2000

Office: Department of Tropical Hygiene, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Tropical infectious disease, including melioidosis, leptospirosis and rickettsiosis
2. Statistics, research methodology and epidemiology
3. Bayesian data analysis, and evaluating diagnostic tests with an imperfect gold standard

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Teerawattanasook N, Tauran PM, Teparrukkul P, Wuthiekanun V, Dance DAB, Arif M, *Limmathurotsakul D*. Capacity and Utilization of Blood Culture in Two Referral Hospitals in Indonesia and Thailand. *Am J Trop Med Hyg.* 2017 Jul 10. doi: 10.4269/ajtmh.17-0193. [Epub ahead of print]

11. Name: Assoc. Prof. Dr. Dorn Watthanakulpanich

Education

Degree	Degree Name	Institute	Year
Ph.D.	Biomolecular Sciences	Liverpool John Moores University, Liverpool, U.K.	2009
M.D.	-	Mahidol University	2002

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The Mahidol University council has approved the adjusted program on 18 April, 2018

M.Sc.	Tropical Medicine	Mahidol Univeristy	1995
B.Sc.	Medical Technology	Chiangmai University	1988

Office: Department of Helminthology, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Clinical manifestations of parasitic infections
2. Drug trials of treatment of parasitic infections
3. Community mental health and Occupational medicine

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Sagnuankiat S, Wanichsuwan M, Bhunnachet E, Jungarat N, Panraksa K, Komalamisra C, Maipanich W, Yoonuan T, Pubampen S, Adisakwattana P, *Watthanakulpanich D*. Health status of immigrant children and environment survey of child daycare centers in Samut Sakhon Province, Thailand. *Immigr Minor Health*. 2016;18(1):21-7.

12. Name: Associate Professor Dr. Noppadon Tangpukdee

Education

Degree	Degree Name	Institute	Year
Ph.D.	Tropical Medicine	Mahidol University	2008
M.Sc.	Toxicology	Mahidol University	2001
D.M.M.	-	“Institute of Medical Research, Malaysia”	2003
B.N.S.	Nursing & Midwifery	Khon Kaen University	1995

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Malaria
2. Toxicology

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

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The Mahidol University council has approved the adjusted program on 18 April, 2018

1. Toure OA, Valecha N, Tshetu AK, Thompson R, Krudsood S, Gaye O, Rao BHK, Sagara I, Bose TK, Mohanty S, Rao BS, Anvikar AR, Mwapasa V, Noedl H, Arora S, Roy A, Iyer SS, Sharma P, Saha N, Jalali RK, Tiacoh L, Enosse S, **Tangpukdee N**, et al. A Phase 3, Double-Blind, Randomized Study of Arterolane Maleate-Piperaquine Phosphate vs Artemether-Lumefantrine for Falciparum Malaria in Adolescent and Adult Patients in Asia and Africa. *Clinical infectious diseases : an official publication of the Infectious Diseases Society of America*. 2016;62(8):964-71.

13. Name: Assoc. Prof. Dr. Parnpen Viriyavejakul

Education

Degree	Degree Name	Institute	Year
Ph.D.	Combined Molecular and Biochemistry Studies	University of Liverpool, United Kingdom	2007
Dip.	Thai Board of Anatomical Pathology	Mahidol University	1996
M.Sc.	Clinical Tropical Medicine	Mahidol University	1993
D.T.M.&H.	-	Mahidol University	1992
M.D.	-	University of the East Ramon Magsaysay Memorial Medical Center, Philippines	1990
B.S.	Biology-Genetics	University of the Philippines at Los Banos, Philippines	1986

Office: Department of Tropical Pathology, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Pathogenesis of malaria
2. Tropical Diseases
3. Opportunistic infections

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Punsawad C, **Viriyavejakul P**. Reduction in serum sphingosine 1-phosphate concentration in malaria. *PLoS One*. 2017 Jun 30;12(6):e0180631.

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The Mahidol University council has approved the adjusted program on 18 April, 2018

14. Name: Assoc. Prof. Dr. Paron Dekumyoy

Education

Degree	Degree Name	Institute	Year
Ph.D.	Tropical Medicine	Mahidol University	2003
M.Sc.	Tropical Medicine	Mahidol University	1985
B.S.	Biology	Ramkhamhaeng University	1980

Office: Department of Helminthology, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Molecular biology
2. Parasitology

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Wuhao L, Ran C, Xujin H, Zhongdao W, *Dekumyoy P*, Zhiyue L. Parasites and asthma. *Parasitol Res.* 2017 Jul 8. doi: 10.1007/s00436-017-5548-1. [Epub ahead of print] Review.

15. Name: Assoc. Prof. Dr. Poom Adisakwattana

Education

Degree	Degree Name	Institute	Year
Ph.D.	Biomedical Sciences	Thammasat University	2007
B.Sc.	Medical Technology	Thammasat University	2000

Office: Department of Helminthology, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Molecular biology and parasitology
2. Immunology

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

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The Mahidol University council has approved the adjusted program on 18 April, 2018

1. Greiman SE, Vaughan JA, Elmahy R, *Adisakwattana P*, Van Ha N, Fayton TJ, et al. Real-time PCR detection and phylogenetic relationships of *Neorickettsia* spp. in digeneans from Egypt, Philippines, Thailand, Vietnam and the United States. *Parasitol Int.* 2017 Feb;66(1):1003-7.

16. Name: Assoc. Prof. Dr. Porntip Petmitr

Education

Degree	Degree Name	Institute	Year
Ph.D.	Biochemistry	Mahidol University	1993
M.Sc.	Tropical Medicine	Mahidol University	1985
B.Sc.	Medical Technology	Chiangmai University	1982

Office: Department of Protozoology, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Study on DNA replicating enzymes of *Plasmodium falciparum* as new chemotherapeutic targets against malaria.
2. Development of differential diagnosis of human *Entamoeba* spp. in clinical and water samples.
3. Development of molecular diagnosis of human malarial parasites.
4. Molecular characterization of DNA repairing enzymes of *Plasmodium falciparum*.
5. Molecular diagnosis of *Trichomonas vaginalis*.

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Rupprom K, *Chavalitshewinkoon-Petmitr P*, Diraphat P, Kittigul L. Evaluation of real-time RT-PCR assays for detection and quantification of norovirus genogroups I and II. *Virologica Sinica*. 2017 Apr;32(2):139-46.

17. Name Assoc. Prof. Dr. Pratap Singhasivanon

Education

Degree	Degree Name	Institute	Year
Dr.P.H.	Epidemiology	The University of Michigan, Ann Arbor, U.S.A.	1991
M.P.H.	Public Health	Harvard University, U.S.A.	1985

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The Mahidol University council has approved the adjusted program on 18 April, 2018

D.T.M.&H.	Tropical Medicine and Hygiene	Mahidol University	1982
M.B.B.S.	-	Kasturba Medical College, India	1970

Office: Department of Tropical Hygiene, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Epidemiology of Tropical Diseases)
2. Biomedical and Health Informatics)
3. Application of Geographical Information System (GIS) for Epidemiological

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Canavati SE, Lawpoolsri S, Quintero CE, Nguon C, Ly P, Pukrittayakamee S, Sintasath D, *Singhasivanon P*, et al. Village malaria worker performance key to the elimination of artemisinin-resistant malaria: a Western Cambodia health system assessment. *Malar J.* 2016 May 20;15(1):282.

18. Name: Associate Professor Vipa Thanachartwet

Education

Degree	Degree Name	Institute	Year
Dip. Thai Board	Nephrology	Thai Medical Council	2003
Dip. Thai Board	Internal Medicine	Thai Medical Council	2001
M.D.	-	Mahidol University	1997

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine,
Mahidol University

Interesting Research Topics or Specialties

1. Internal Medicine
2. Nephrology
3. Tropical Medicine

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

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The Mahidol University council has approved the adjusted program on 18 April, 2018

1. Pitisuttithum P, Boonnak K, Chamnanchanunt S, Puthavathana P, Luvira V, Lerdsamran H, Kaewkungwal J, Lawpoolsri S, **Thanachartwet V**, et al. Safety and immunogenicity of a live attenuated influenza H5 candidate vaccine strain A/17/turkey/Turkey/05/133 H5N2 and its priming effects for potential pre-pandemic use: a randomised, double-blind, placebo-controlled trial. *The Lancet Infectious diseases*. 2017;17(8):833-42.

19. Name Assoc. Prof. Dr. Yaowapa Maneerat

Education

Degree	Degree Name	Institute	Year
Ph.D.	Pathobiology	Mahidol University	1994
M.Sc.	Pathobiology	Mahidol University	1987
D.V.M.	-	Chulalongkorn University	1984

Office: Department of Tropical Pathology, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Histopathology
2. immunopathology
3. applied pathology in falciparum malaria and Gnathostomiasis

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. **Maneerat Y**, Prasongsukarn K, Benjathummarak S, Dechkhajorn W. PPBP and DEFA1/DEFA3 genes in hyperlipidaemia as feasible synergistic inflammatory biomarkers for coronary heart disease. *Lipids Health Dis*. 2017 Apr 19;16(1):80.

20. Name Asst. Prof. Dr. Aongart Mahittikorn

Education

Degree	Degree Name	Institute	Year
Ph.D.	Tropical Medicine	Mahidol University	2009
B.Sc.	Public Health	Mahidol University	2003

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The Mahidol University council has approved the adjusted program on 18 April, 2018

Office: Department of Protozoology, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Toxoplasmosis

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. *Mahittikorn A*, Thammasonthijareern N, Roobthaisong A, Udonsom R, Popruk S, Siri Set al. Development of a loop-mediated isothermal amplification technique and comparison with quantitative real-time PCR for the rapid visual detection of canine neosporosis. *Parasit Vectors*. 2017 Aug 23;10(1):394.

21. Name: Assistant Professor Dr. Apichart Nontprasert

Education

Degree	Degree Name	Institute	Year
Ph.D.	Tropical Medicine	Mahidol University	2001
M.Sc.	Public Health	Mahidol University	1986
B.Sc.	Biology	Ramkhamhaeng University	1983

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Experimental animal research
2. Toxicology assessment in animal and in vitro models
3. Animal Pathology

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Kye Mon K, *Nontprasert A*, Kittitrakul C, Tangkijvanich P, Leowattana W, Poovorawan K. Incidence and Clinical Outcome of Acute Liver Failure Caused by Dengue in a Hospital for Tropical Diseases, Thailand. *The American journal of tropical medicine and hygiene*. 2016;95(6):1338-44.

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The Mahidol University council has approved the adjusted program on 18 April, 2018

22. Name: Assistant Professor Dr. Jittima Dhitavat

Education

Degree	Degree Name	Institute	Year
D.Phil.	Clinical Medicine	"University of Oxford, United Kingdom"	2003
Dip. Thai Board	Preventive Medicine (Travel medicine)	Thai Medical Council	2013
Dip. Thai Board	Dermatology	Thai Medical Council	1995
M.Sc.	Internal Medicine	Chulalongkorn University	1992
M.D. (Second-class Honors)	-	Prince of Songkla University	1989

Office : Department of Clinical Tropical Medicine, Faculty of Tropical Medicine,
Mahidol University

Interesting Research Topics or Specialties

1. Dermatology
2. HIV
3. Mycology

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Sricharoenchai S, Sirivichayakul C, Chokephaibulkit K, Pitisuttithum P, *Dhitavat J*, Pitisuthitham A, et al. A genetically inactivated two-component acellular pertussis vaccine, alone or combined with tetanus and reduced-dose diphtheria vaccines, in adolescents: a phase 2/3, randomised controlled non-inferiority trial. *The Lancet Infectious diseases*. 2017.

23. Name: Assistant Professor Kittiyod Poovorawan

Education

Degree	Degree Name	Institute	Year
Dip. Thai Board	Gastroenterology	Thai Medical Council	2012
Dip. Thai Board	Internal Medicine	Thai Medical Council	2010
M.D. (First-class Honors)	-	Chulalongkorn University	2006

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The Mahidol University council has approved the adjusted program on 18 April, 2018

Office : Department of Clinical Tropical Medicine, Faculty of Tropical Medicine,
Mahidol University

Interesting Research Topics or Specialties

1. Viral hepatitis
2. Gastrointestinal and liver diseases in the tropics

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Wasitthankasem R, Vichaiwattana P, Siripon N, Posuwan N, Auphimai C, Klinfueng S, Thaneskongtong N, Vuthitanachot V, Saiyatha S, Thongmai C, Suwanpatoomlerd S, Sochoo S, Pongsuwan N, *Poovorawan K*, et al. Assessment of hepatitis C virus infection in two adjacent Thai provinces with drastically different seroprevalence. PLoS one. 2017;12(5):e0177022.

24. Name: Asst. Prof. Dr. Kobporn Boonnak

Education

Degree	Degree Name	Institute	Year
Ph.D.	Microbiology	Mahidol University	2008
M.Sc.	Immunology	Mahidol University	2000
B.Sc.	Biochemistry and Biochemical Technology	ChiangMai University	1992

Office : Department of Microbiology and Immunology, Faculty of Tropical Medicine,
Mahidol University

Interesting Research Topics or Specialties

1. Virus
2. Immunology

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Lamichhane PP, *Boonnak K*, Changsom D, Noisumdaeng P, Sangsiriwut K, Pattanakitsakul SN, et al. H5N1 NS genomic segment distinctly governs the influenza virus infectivity and cytokine induction in monocytic cells. Asian Pac J Allergy Immunol. 2017 Aug 8. doi: 10.12932/AP0870. [Epub ahead of print]

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The Mahidol University council has approved the adjusted program on 18 April, 2018

25. Name Asst. Prof. Dr. Muthita Vanaporn

Education

Degree	Degree Name	Institute	Year
Ph.D.	Immunology	Mahidol University:	2008
B.Sc.	Medical Technology	Chulalongkorn University	2001

Office : Department of Microbiology and Immunology, Faculty of Tropical Medicine,
Mahidol University

Interesting Research Topics or Specialties

1. Bacterial pathogenesis
2. *Burkholderia pseudomallei*.
3. Molecular microbiology.

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Pumirat P, **Vanaporn M**, Boonyuen U, Indrawattana N, Rungruengkitkun A, Chantratita N. Effects of sodium chloride on heat resistance, oxidative susceptibility, motility, biofilm and plaque formation of *Burkholderia pseudomallei*. *Microbiologyopen*. 2017 Aug;6(4). doi: 10.1002/mbo3.493. Epub 2017 Jun 23.

26. Name: Asst. Prof. Dr. Nathamon Kosoltanapiwat

Education

Degree	Degree Name	Institute	Year
Ph.D.	Immunology	Mahidol University	2008
B.Sc.	Medical Technology	Mahidol University	2002

Office : Department of Microbiology and Immunology, Faculty of Tropical Medicine,
Mahidol University

Interesting Research Topics or Specialties

1. Molecular microbiology
2. Virology
3. Immunology

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The Mahidol University council has approved the adjusted program on 18 April, 2018

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. *Kosoltanapiwat N*, Yindee M, Chavez IF, Leaungwutiwong P, Adisakwattana P, Singhasivanon P, et al. Genetic variations in regions of bovine and bovine-like enteroviral 5'UTR from cattle, Indian bison and goat feces. *Virology*. 2016;13:13

27. Name: Asst. Prof. Dr. Piengchan Sonthayanon

Education

Degree	Degree Name	Institute	Year
Ph.D.	Tropical Medicine	Mahidol University	2008
M.Sc.	Biochemistry	Mahidol University	1992
B.Sc	Chiangmai University	Chiangmai University	1983

Office: Department of Molecular Tropical Medicine and Genetics, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Molecular Biology of Bacteria infection
2. Molecular diagnosis and typing of Bacteria

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Phetsouvanh R, *Sonthayanon P*, Pukrittayakamee S, Paris DH, Newton PN, Feil EJ, et al. Correction: The Diversity and Geographical Structure of *Orientia tsutsugamushi* Strains from Scrub Typhus Patients in Laos. *PLoS Negl Trop Dis*. 2016 May 17;10(5):e0004742. doi: 10.1371/journal.pntd.0004742. eCollection 2016 May.

28. Name: Asst. Prof. Dr. Pornsawan Leungwutiwong

Education

Degree	Degree Name	Institute	Year
Ph.D.	Tropical Medicine	Mahidol University	2005
M.Sc.	Tropical Medicine	Mahidol University	1999
B.Sc.	Radiological Technology	Mahidol University	1996

Office : Department of Microbiology and Immunology, Faculty of Tropical Medicine,
Mahidol University

Interesting Research Topics or Specialties

1. Medical Virology

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Rattanamahaphoom J, *Leungwutiwong P*, Limkittikul K, Kosoltanapiwat N, Srikaitkhachorn A. Activation of Dengue Virus-Specific T Cells Modulates Vascular Endothelial Growth Factor Receptor 2 Expression. Asian Pac J Allergy Immunol. 2016 Dec 12. doi: 10.12932/AP0810. [Epub ahead of print]

29. Name: Asst. Prof. Dr. Ronald Enrique Morales Vargas

Education

Degree	Degree Name	Institute	Year
Ph.D.	Medical Entomology	Institute for Tropical Medicine, Faculty of Medicine, Nagasaki University, Japan	2002
M.Sc.	Biology Systematic and Ecology	Graduate School of Science, Kagoshima University, Japan	1998
Licentiate	Biological Chemistry	Faculty of Chemistry Science and Pharmacy, University of San Carlos of Guatemala	1992

Office : Department of Medical Entomology , Faculty of Tropical Medicine, Mahidol University

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The Mahidol University council has approved the adjusted program on 18 April, 2018

Interesting Research Topics or Specialties

1. Microbiology
2. Medical Entomology/Taxonomy, Ecology, Vector Control, Molecular Entomology
3. Virology/Mosquito Borne virus

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Dieng H, Ellias SB, Satho T, Ahmad AH, Abang F, Ghani IA, Noor S, Ahmad H, Zuharah WF, *Morales Vargas RE*, et al. Coffee, its roasted form, and their residues cause birth failure and shorten lifespan in dengue vectors. *Environ Sci Pollut Res Int*. 2017 Jun;24(17):14782-94.

30. Name Asst. Prof. Dr. Suchada Sumruayphol**Education**

Degree	Degree Name	Institute	Year
Ph.D.	Tropical Medicine	Mahidol University	2009
M.Sc.	Appropriate Technology for Resources and Environmental Development	Kasetsart University	2004
B.Sc.	Agriculture	Kasetsart University	2001

Office: Department of Medical Entomology, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Medical Entomology
2. Geometric morphometrics
3. Taxonomy
4. Vector Ecology
5. Molecular Biology

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. *Sumruayphol S*, Chittsamart B, Polseela R, Sriwichai P, Samung Y, Apiwathnasorn C, et al. Corrigendum to "Wing geometry of *Phlebotomus stantoni* and *Sergentomyia hodgsoni* from different geographical locations in Thailand" [*C. R. Biologies* 340(1) (2017) 37-46]. *C R Biol*. 2017 Mar;340(3):195. doi: 10.1016/j.crv.2017.01.003. Epub 2017 Feb 7.

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The Mahidol University council has approved the adjusted program on 18 April, 2018

31. Name: Asst. Prof. Dr. Saengduen Moonsom

Education

Degree	Degree Name	Institute	Year
Ph.D.	Molecular Genetics and Genetic Engineering	Mahidol University	2007
M.Sc.	Molecular Genetics and Genetic Engineering	Mahidol University	2004
B.Sc.	Medical Technology	Chiang Mai University	1998

Office: Department of Protozoology, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Binding characterization of bacterial proteins
2. Proteomic studies of pathogenic protozoa
3. Production of a monoclonal antibody
4. Development of a diagnostic tool for detection of a pathogenic protozoa
5. Molecular and cellular studies on pathogenesis of human infected bacteria or protozoa

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Limudomporn P, **Moonsom S**, Leartsakulpanich U, Suntornthiticharoen P, Petmitr S, Weinfeld M, et al. Characterization of *Plasmodium falciparum* ATP-dependent DNA helicase RuvB3. *Malar J.* 2016 Nov 3;15(1):526.

32. Name: Asst. Prof. Dr. Sumate Ampawong

Education

Degree	Degree Name	Institute	Year
Ph.D.	Tropical Medicine	Mahidol University	2009
M.Sc.	Tropical Medicine	Mahidol University	2001
D.V.M.	-	Kasetsart University	1998

Office: Department of Tropical Pathology, Faculty of Tropical Medicine, Mahidol University

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The Mahidol University council has approved the adjusted program on 18 April, 2018

Interesting Research Topics or Specialties

1. Pathology of Tropical Diseases

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Pumeesat P, Muangkaew W, **Ampawong S**, Luplertlop N. *Candida albicans* biofilm development under increased temperature. *New Microbiol.* 2017 Aug 21;40(3). [Epub ahead of print]

33. Name: Asst. Prof. Dr. Supaluk Popruk

Education

Degree	Degree Name	Institute	Year
Ph.D.	Tropical Medicine	Mahidol Universit	2007
B.Sc.	Medical Technology	Naresuan University	2001

Office: Department of Protozoology, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Molecular genetics of Intestinal Protozoa
2. Development for Intestinal protozoa diagnosis

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Mahittikorn A, Thammasonthijareern N, Roobthaisong A, Udonsom R, **Popruk S**, Siri S, et al. Development of a loop-mediated isothermal amplification technique and comparison with quantitative real-time PCR for the rapid visual detection of canine neosporosis. *Parasit Vectors.* 2017 Aug 23;10(1):394

34. Name: Assistant Professor Supat Chamnanchanunt

Education

Degree	Degree Name	Institute	Year
Dip. Thai Board	Hematology	Thai Medical Council	2005
D.T.M.&H.	-	Mahidol University	2001
M.D.	-	Rangsit University	1998

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The Mahidol University council has approved the adjusted program on 18 April, 2018

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Tropical infection
2. Hematology

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Pitisuttithum P, Boonnak K, **Chamnanchanunt S**, Puthavathana P, Luvira V, Lerdsamran H, et al. Safety and immunogenicity of a live attenuated influenza H5 candidate vaccine strain A/17/turkey/Turkey/05/133 H5N2 and its priming effects for potential pre-pandemic use: a randomised, double-blind, placebo-controlled trial. *The Lancet Infectious diseases*. 2017;17(8):833--42.
-

35. Name: Assistant Professor Udomsak Silachamroon

Education

Degree	Degree Name	Institute	Year
Dip. Thai Board	Preventive Medicine (Travel Medicine)	Thai Medical Council	2013
Dip. Thai Board	Pulmonary Medicine	The Royal College of Physician of Thailand	1998
Dip. Thai Board	Internal Medicine	Thai Medical Council	1996
M.Sc.	Medicine	Chulalongkorn University	1998
M.D. (Second-class Honors)	-	Chulalongkorn University	1990

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Tropical medicine
2. Pulmonary medicine
3. Tuberculosis

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The Mahidol University council has approved the adjusted program on 18 April, 2018

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Pitisuttithum P, Boonnak K, Chamnanchanunt S, Puthavathana P, Luvira V, Lerdsamran H, Kaewkungwal J, Lawpoolsri S, Thanachartwet V, *Silachamroon U*, et al. Safety and immunogenicity of a live attenuated influenza H5 candidate vaccine strain A/17/turkey/Turkey/05/133 H5N2 and its priming effects for potential pre-pandemic use: a randomised, double-blind, placebo-controlled trial. *The Lancet Infectious diseases*. 2017;17(8):833-42.

36. Name: Asstistand Professor Dr. Urai Chaisri

Education

Degree	Degree Name	Institute	Year
Ph.D.	Tropical Medicine	Mahidol University	2001
M.Sc.	Tropical Medicine	Mahidol University	1987
B.Sc.	Biology	Ramkhumhang University	1984

Office: Department of Tropical Pathology, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Pathology
2. Ultrastructural studies

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Pakchotanon P, Molee P, Nuamtanong S, Limpanont Y, Chusongsang P, Limsomboon J, Chusongsang Y, Maneewatcharangsri S, *Chaisri U*, et al. Molecular characterization of serine protease inhibitor isoform 3, SmSPI, from *Schistosoma mansoni*. *Parasitol Res*. 2016 (Aug);115 (8):2981-94.

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The Mahidol University council has approved the adjusted program on 18 April, 2018

37. Name: Asstistand Professor Dr. Urusa Thaenkham

Education

Degree	Degree Name	Institute	Year
Ph.D.	Tropical Medicine	Mahidol University	2010
M.Sc.	Environmental Biology	Mahidol University	2001
B.Sc.	Biology	Mahidol University	1997

Office: Department of Helminthology , Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Molecular epidemiology of helminths
2. Molecular systematics and DNA taxonomy of helminths
3. Anthelmintic drug development for Thai medical herb

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Dusitsittipon S, Criscione CD, Morand S, Komalamisra C, *Thaenkham U*. Cryptic lineage diversity in the zoonotic pathogen *Angiostrongylus cantonensis*. *Mol Phylogenet Evol.* 2017 Feb;107:404-14

38. Name: Assistant Professor Viravarn Luvira

Education

Degree	Degree Name	Institute	Year
Dip. Thai Board	Preventive Medicine (Travel Medicine)	Thai Medical Council	2016
Dip. Thai Board	Infectious Diseases	Thai Medical Council	2011
Dip. Thai Board	Internal Medicine	Thai Medical Council	2008
D.T.M.&H.	-	Mahidol University	2004
M.D. (First-class Honors)	-	Mahidol University	2001

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Infectious diseases

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The Mahidol University council has approved the adjusted program on 18 April, 2018

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Wongchidwan N, Wattanagoon Y, *Luvira V*, Iamsirithaworn S. Delayed care-seeking and outcome of dengue-infected patients. *Tropical doctor*. 2017;49475517712889.

39. Name: Assistant Professor Watcharapong Piyaphanee

Education

Degree	Degree Name	Institute	Year
Dip. Thai Board	Preventive Medicine (Travel Medicine)	Thai Medical Council	2013
Dip. Thai Board	Internal Medicine	Thai Medical Council	2005
Diploma	Travel Medicine	“The Royal College of Physicians and Surgeons of Glasgow, United Kingdom”	2008
Diploma	Clinical Science (Internal Medicine)	Mahidol University	2003
M.D. (First-class Honors)	-	Mahidol University	1999

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Travel medicine
2. Tropical diseases

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Sharma C, *Piyaphanee W*, Watthanakulpanich D. Case Report: Clinical Features of Intermittent Migratory Swelling Caused by Gnathostomiasis with Complete Follow-up. *The American journal of tropical medicine and hygiene*. 2017;97(5):1611-5.

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The Mahidol University council has approved the adjusted program on 18 April, 2018

40. Name : Assistant Professor Dr. Watcharee Arunsodsai

Education

Degree	Degree Name	Institute	Year
Ph.D.	Infectious and Tropical Diseases	London School of Hygiene & Tropical Medicine, London, United Kingdom	2005
Diploma	Infectious diseases	International Medical Center of Japan, Tokyo, Japan	1998
D.T.M .& H.	-	Mahidol university	1996
Diploma Thai Board of Pediatrics	Pediatrics	Thai Medical Councils (Mahidol university)	1993
M.D.	-	Mahidol university	1987

Office : Department of Tropical Pediatric, Faculty of Tropical Medicine, Mahidol University

Interested research/ expertise

1. Pediatric infectious disease
2. Vaccine research
3. Malaria

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Rahimi BA, Thakkinstian A, White NJ, Sirivichayakul C, Dondorp AM, **Chokejindachai W**. Severe vivax malaria: a systematic review and meta-analysis of clinical studies since 1900. *Malar J* 2014;13:481.

41. Name: Assistant Professor Weerapong Phumaratanaprapin

Education

Degree	Degree Name	Institute	Year
Dip. Thai Board	Preventive Medicine (Travel Medicine)	Thai Medical Council	2013
Dip. Thai Board	Family Medicine	Thai Medical Council	2003
Dip. Thai Board	Nephrology	Thai Medical Council	2002
Dip. Thai Board	Internal Medicine	Thai Medical Council	1997
M.D.	-	Chulalongkorn University	1989

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The Mahidol University council has approved the adjusted program on 18 April, 2018

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Tropical renal diseases
2. Malaria
3. Dengue

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Poovorawan K, Thu AM, Sutherat M, *Phumratanaprapin W*, Wisedopas N, Luvira V, Chierakul W. Hepatic Lymphoma and Splenic Aspergillosis Mimicking Hepatosplenic Abscesses from Melioidosis in Thailand. The Southeast Asian journal of tropical medicine and public health. 2016;47(2):223-6.

42. Name: Assistant Professor Dr. Wirichada Pan-ngum

Education

Degree	Degree Name	Institute	Year
Ph.D.	Mathematical modeling of Infectious Disease	University of Liverpool, UK.	2006
M.Sc.	Applied Statistics	University of Oxford, UK.	1999
B.Sc.	Mathematics Operational Research, Statistics and Economics (MORSE)	University of Warwick, UK.	1998

Office: Department of Tropical Hygiene , Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Mathematical modeling of Infectious Disease
2. Clinical data management and Statistics

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Charatchoenwittaya P, Soonthornworasiri N, Karaketklang K, Poovorawan K, *Pan-Ngum W*, Chotiayaputta W, et al. Factors affecting mortality and resource use for hospitalized patients with cirrhosis: A population-based study. Medicine (Baltimore). 2017 Aug;96(32):e7782.

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The Mahidol University council has approved the adjusted program on 18 April, 2018

43. Name: Dr. Borimas Hanboonkunupakarn

Education

Degree	Degree Name	Institute	Year
Ph.D.	Anatomy	Mahidol University	2006
Dip. Thai Board	Preventive Medicine (Travel Medicine)	Thai Medical Council	2016
D.T.M.&H.	-	Mahidol University	2011
B.Sc.	Medical science	Mahidol University	2002
M.D.	-	Mahidol University	1999

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Malaria
2. Dengue

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Thielemans L, Trip-Hoving M, Bancone G, Turner C, Simpson JA, *Hanboonkunupakarn B*, et al. Neonatal Hyperbilirubinemia in a Marginalized Population on the Thai-Myanmar Border: a study protocol. BMC pediatrics. 2017;17(1):32.

44. Name: Lecturer Chatporn Kittittrakul

Education

Degree	Degree Name	Institute	Year
Dip. Thai Board	Preventive Medicine (Travel Medicine)	Thai Medical Council	2016
Dip. Thai Board	Gastroenterology	Thai Medical Council	2009
Dip. Thai Board	Internal Medicine	Thai Medical Council	2007
D.T.M.&H.	-	Mahidol University	2003
M.D. (First-class Honors)	-	Chulalongkorn University	2001

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

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Interesting Research Topics or Specialties

1. Dengue
2. Viral hepatitis
3. Diarrhea

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Poovorawan K, Pan-Ngum W, Soonthornworasiri N, Kulrat C, **Kittitrakul C**, Wilairatana P, et al. Burden of Liver Abscess and Survival Risk Score in Thailand: A Population-Based Study. The American journal of tropical medicine and hygiene. 2016;95(3):683-8.
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45. Name: Lecturer Chayasin Mansanguan

Education

Degree	Degree Name	Institute	Year
Dip. Thai Board of	Cardiology	Thai Medical Councils	2015
Dip. Thai Board of	Internal Medicine Thai Medical	Thai Medical Councils	2012
M.D.		Naresuan University	2005

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Cardiology

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Poovorawan K, Soonthornworasiri N, Sa-angchai P, **Mansanguan C**, Piyapanee W. Hepatitis B vaccination for international travellers to Asia. Trop Dis Travel Med Vaccines (2016) 2:14 doi: 10.1186/s40794-016-0031-z
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The Mahidol University council has approved the adjusted program on 18 April, 2018

46. Name: Lecturer Dr. Natthida Sriboonvorakul**Education**

Degree	Degree Name	Institute	Year
Ph.D.	Chemistry	Chulalongkorn University	2014
B.Sc.	Chemistry	Chulalongkorn University	2007

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Analytical separation, chromatography and mass spectrometry
2. Method development for analysis of organic compounds in biological samples
3. Clinical study for the pathophysiology of severe malaria related to Acidosis and the contribution of unmeasured anions
4. Malaria Mass Spectrometry-based Metabolomics study in clinical samples for the assessment and understanding of the pathogenesis of acidosis in patients with severe malaria and other conditions associated with acidosis
5. hemometric (Pattern recognition)-based study of metabolic difference between unperturbed vs. perturbed systems (i.e. healthy controls vs. patients with disease)

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Herdman MT, *Sriboonvorakul N*, Leopold SJ, Douthwaite S, Mohanty S, Hassan MM, Maude RJ, Kingston HW, Plewes K, Charunwatthana P, Silamut K, Woodrow CJ, Chotinavich K, Hossain MA, Faiz MA, Mishra S, Leepipatpiboon N, White NJ, Day NP, Tarning J, Dondorp AM. The role of previously unmeasured organic acids in the pathogenesis of severe malaria. *Critical Care* 2015 Sep 19(1): 317

47. Name: Lecturer Dr. Prakaykaew Charunwatthana**Education**

Degree	Degree Name	Institute	Year
Ph.D.	Clinical Tropical Medicine	Mahidol University	2008
M.C.T.M.	-	Mahidol University	2001
D.T.M.&H.	-	Mahidol University	2001
M.D.	-	Rangsit University	2000

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

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Interesting Research Topics or Specialties

1. Malaria
2. Scrub typhus

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Saiwaew S, Sritabal J, Piaraksa N, Keayarsa S, Ruengweerayut R, Utaisin C, Sila P, Niramis R, Udomsangpetch R, *Charunwatthana P*, et al. Effects of sevuparin on rosette formation and cytoadherence of *Plasmodium falciparum* infected erythrocytes. PLoS one. 2017;;(3)12e.0172718

48. Name Lecture Dr. Sant Muangnoicharoen

Education

Degree	Degree Name	Institute	Year
Ph.D.	Clinical Pharmacology	University of Liverpool, United Kingdom	2008
Dip. Thai Board of	Internal Medicine	Thai Medical Council	2015
M.D.		Chiang Mai University	2001

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Clinical Pharmacology
2. Pharmacokinetics
3. Pharmacodynamics
4. Infectious Diseases
5. Methods development HPLC-UV Mass spectrometer
6. Clinical trails

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Prachantasena S, Charununtakorn P, *Muangnoicharoen S*, Hankla L, Techawal N, Chaveerach P, Tuitemwong P, Chokesajjawatee N, Williams N, Humphrey T, Luangtongkum T. Distribution and Genetic Profiles of Campylobacter in Commercial Broiler Production from Breeder to Slaughter in Thailand. PLoS One. 2016 Feb 17;11(2):e0149585

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The Mahidol University council has approved the adjusted program on 18 April, 2018

49. Name: Lecturer Dr. Sungsit Sungvornyothin

Education

Degree	Degree Name	Institute	Year
Ph.D.	Entomology	Kasetsart University:	2007
M.Sc.	Environmental Biology	Mahidol University	2001
B.Sc.	Biology	Mahidol University	1996

Office: Department of Medical Entomology, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Mosquito ecology
2. Molecular identification of medical insect

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Chotelersak K, Apiwathnasorn C, **Sungvornyothin S**, Panasoponkul C, Samung Y, Ruangsittichai J*. Correlation of host specificity, environmental factors and oriental rat flea abundance. Southeast Asian J Trop Med Public Health 2015; Mar 46(2): 198-206.

50. Name: Lectuere Supitcha Kamolratanakul

Education

Degree	Degree Name	Institute	Year
Dip. Thai Board of	Dematology	Thai Medical Council	2016
M.D.		Chulalongkorn University	2009

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Clinical dermatology
2. Dermatologic surgery and cosmetic

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. **Kamolratanakul S**, Dhitavat J. Disseminated herpes zoster in immunocompetent host: A rare case

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The Mahidol University council has approved the adjusted program on 18 April, 2018

report and review of the literature. Thai J Dermatol 2017; 33: 215-22.

51. Name Lecturer Dr. Wirongrong Chierakul

Education

Degree	Degree Name	Institute	Year
Ph.D.	Life and Biomolecular Science	“Open University, United Kingdom”	2009
Dip. Thai Board	Preventive Medicine (Travel Medicine)	Thai Medical Council	2016
Dip. Thai Board	Internal Medicine	Thai Medical Council	1995
M.D.	-	Mahidol University	1991

Office: Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

Interesting Research Topics or Specialties

1. Melioidosis
2. Leptospirosis
3. Scrub typhus
4. Tuberculosis
5. Acute febrile illness
6. Dengue infection
7. HIV/AIDS and opportunistic infections

Last publication that are not parts of doctoral dissertation and are complied with the criteria for academic position appointment within 5 Years

1. Wattanakul T, Teerapong P, Plewes K, Newton PN, *Chierakul W*, Silamut K, et al. Pharmacokinetic properties of intramuscular versus oral syrup paracetamol in *Plasmodium falciparum* malaria. Malaria journal. 2016;15:244.
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The Mahidol University council has approved the adjusted program on 18 April, 2018

APPENDIX C
Curriculum Mapping

APPENDIX C

Curriculum Mapping (PLO and Courses) ● Main response ○ Partial response

Course	1. Morality and ethics		2. Knowledge development		3. Intellectual development		4. Interpersonal relationship and responsibility		5. Mathematical analytical thinking, communication skills, and information technology skills		
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	
Required courses											
TMMH 502	Food- and Water-borne Diseases: Soil-transmitted Helminthiasis	○		●		○				○	○
TMMH 503	Food- and Water-borne Diseases: Tissue Parasites	○		●		○					
TMMH 504	Important Mosquito-borne Diseases	○		●		○					
TMTP 510	Seminar in Tropical Pediatrics	○	●	○	●	○	○		○	●	●
TMTP 511	Common Pediatric Problems	○		●		○					
TMTP 513	Tropical Pediatric Apprenticeship	●		●		●		●		○	●
Elective courses											
TMID 510	Statistics for Clinical Research		○		●		○		○	●	●
TMMH 501	Principal of Tropical Medicine and Hygiene	○		●		○					
TMMH 505	Non-mosquito Vector-borne Diseases and Zoonoses	○		●		○					
TMMH 506	Sexually Transmitted Diseases and Human Immunodeficiency Virus Related Problems	○		●		○					
TMMH 507	General Health Problems and Common Diseases in the Tropics	○		●		○					
TMTP 512	General Pediatric Apprenticeship	●		○		○		●		○	●
TMTP 514	Critical Review in Tropical Pediatrics	○	●	○	●	○	○		○	●	●
Thesis											
TMTP 698	Thesis	○	●	○	●	○	●	○	●	●	●
Independent study											
TMTP 697	Thematic paper	○	●	○	●	○	●	○	●	●	●

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Table: The relationship of PLO and Core value of Mahidol University

PLOs	Core value of Mahidol University
1. Morality and Ethics	
PLO1: Demonstrate ethical consideration in medical practice.	Altruism, Harmony, Integrity
PLO2: Demonstrate ethical consideration and code of conduct in clinical research.	
2. Knowledge	
PLO3: Describe the tropical diseases in important aspects of epidemiology, clinical presentations, diagnosis, treatment, prevention and control.	Mastery
PLO4: Describe research methodologies and principle of good clinical practice.	
3. Intellectual development	
PLO5: Formulate the diagnosis and management of tropical pediatrics based on clinical information.	Mastery, Altruism, Harmony, Integrity, Determination,
PLO6: Organize clinical research in tropical pediatrics according to international standard.	
4. Interpersonal relationship and responsibility	
PLO7: Formulate professional teamwork in clinical practice.	Altruism, Harmony, Integrity, Determination, Leadership
PLO8: Formulate professional teamwork in clinical research.	
5. Mathematical analytical thinking, communication skills, and information technology skills	
PLO9: Retrieve, process and analyze data using appropriate technologies.	Harmony
PLO10: Present data and communicate using appropriate technologies.	

APPENDIX D

Program Learning Outcome

Appendix D
Program Learning Outcomes

Table 1: Comparison between before and after revised objective of the program

Objective of the Program 2012	Revised Objective of the Program 2018
<p>Plan A2</p> <p>1. มีจริยธรรมในวิชาชีพและดำเนินการวิจัยทางด้านกุมารเวชศาสตร์เขตร้อนคลินิก มีการประพฤติปฏิบัติตามหลักคุณธรรม จริยธรรมและจรรยาบรรณวิชาชีพ</p> <p>2. มีความรอบรู้และเข้าใจโรคเขตร้อนและโรคประจำถิ่นในเด็กโดยเน้นในภาคพื้นเอเชียตะวันออกเฉียงใต้ตั้งแต่ สาเหตุของโรค อุบัติการณ์ กลไกการเกิดโรคลักษณะของโรค การวางแผนส่งตรวจ การรักษา การป้องกันและการควบคุมโรค</p> <p>3. สามารถให้คำปรึกษา เผยแพร่ ความรู้ทางกุมารเวชศาสตร์เขตร้อน แก่บุคคลในระดับต่างๆ สามารถกำหนดปัญหาที่จำเป็นต้องแสวงหาความรู้ใหม่โดยการวิจัย สามารถวางแผนดำเนินการวิจัยทางคลินิก โดยปฏิบัติตามระเบียบวิธีวิจัย วิเคราะห์ข้อมูลและประยุกต์ผลวิจัย เพื่อแก้ไขปัญหาสุขภาพและโรคเขตร้อนในเด็ก</p> <p>4. มีความเป็นผู้นำและสามารถทำงานเป็นที่ร่วมกับบุคลากรทางการแพทย์สาขาอื่น ในการดูแลผู้ป่วยเด็ก มีความรับผิดชอบ มีคุณธรรม และเสียสละเพื่อส่วนรวม</p> <p>5. สามารถวิเคราะห์และแปลผลข้อมูลทางสถิติได้อย่างถูกต้อง สามารถใช้ระบบสารสนเทศในการค้นคว้าและสืบค้นข้อมูลเพื่อการศึกษาต่อเนื่องด้วยตนเอง ติดตามความก้าวหน้าทางวิชาการเกี่ยวกับกุมารเวชศาสตร์เขตร้อน และสามารถนำเสนอข้อมูลและผลงานวิจัยได้อย่างมีประสิทธิภาพ</p> <p>Plan B</p> <p>1. มีจริยธรรมในวิชาชีพและดำเนินการวิจัยทางด้านกุมารเวชศาสตร์เขตร้อนคลินิก มีการประพฤติปฏิบัติตามหลักคุณธรรม จริยธรรมและจรรยาบรรณวิชาชีพ</p> <p>2. มีความรอบรู้และเข้าใจโรคเขตร้อนและโรคประจำถิ่นในเด็กโดยเน้นในภาคพื้นเอเชียตะวันออกเฉียงใต้เป็นอย่างดี ตั้งแต่ สาเหตุของโรค อุบัติการณ์ กลไกการเกิดโรค ลักษณะของโรค การวางแผนส่งตรวจ การรักษา การป้องกันและการควบคุมโรค</p> <p>3. สามารถให้คำปรึกษา เผยแพร่ ความรู้ทางกุมารเวชศาสตร์เขตร้อน แก่บุคคลในระดับต่างๆ สามารถกำหนดปัญหาที่จำเป็นต้องแสวงหา</p>	<p>(1) Perform clinical practice and research in compliance with academic integrity.</p> <p>(2) Perform standard clinical practice in general and tropical pediatrics.</p> <p>(3) Perform clinical research in tropical pediatrics.</p> <p>(4) Formulate professional teamwork in clinical practice and research.</p> <p>(5) Retrieve, process, analyze and present data as well as communicate using appropriate technologies.</p>

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Objective of the Program 2012	Revised Objective of the Program 2018
<p>ความรู้ใหม่ โดยการค้นคว้าและทบทวนวารสารที่เกี่ยวข้อง รวมถึงสามารถวางแผนดำเนินการวิจัยทางคลินิกโดยปฏิบัติตามระเบียบวิธีวิจัย วิเคราะห์ข้อมูลและประยุกต์ผลวิจัยที่ไม่ซับซ้อนได้</p> <p>4. สามารถทำงานเป็นทีมร่วมกับบุคลากรทางการแพทย์สาขาอื่น ในการดูแลผู้ป่วยเด็ก มีความรับผิดชอบ มีคุณธรรมและเสียสละเพื่อส่วนรวม</p> <p>5. สามารถวิเคราะห์และแปลผลข้อมูลทางสถิติได้อย่างถูกต้อง สามารถใช้ระบบสารสนเทศในการค้นคว้าและสืบค้นข้อมูลเพื่อการศึกษาต่อเองด้วยตนเอง ติดตามความก้าวหน้าทางวิชาการเกี่ยวกับกุมารเวชศาสตร์เขตร้อน และนำเสนอข้อมูลและผลงานวิจัยได้อย่างมีประสิทธิภาพ</p>	

Table 2: Relationship between objective of the program and program learning outcome

Objective of the Program	Program Learning Outcome *									
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
(1) Perform clinical practice and research in compliance with academic integrity.	✓	✓								
(2) Perform standard clinical practice in general and tropical pediatrics.			✓		✓					
(3) Perform clinical research in tropical pediatrics.				✓		✓				
(4) Formulate professional teamwork in clinical practice and research.							✓	✓		
(5) Retrieve, process, analyze and present data as well as communicate using appropriate technologies.									✓	✓

PLO1: Demonstrate ethical consideration in medical practice.

PLO2: Demonstrate ethical consideration and code of conduct in clinical research.

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- PLO3: Describe the tropical diseases in important aspects of epidemiology, clinical presentations, diagnosis, treatment, prevention and control.
- PLO4: Describe research methodologies and principle of good clinical practice.
- PLO5: Formulate the diagnosis and management of tropical pediatrics based on clinical information.
- PLO6: Organize clinical research in tropical pediatrics according to international standard.
- PLO7: Formulate professional teamwork in clinical practice.
- PLO8: Formulate professional teamwork in clinical research.
- PLO9: Retrieve, process and analyze data using appropriate technologies.
- PLO10: Present data and communicate using appropriate technologies.

Table 3: Learning and assessment strategies for Program Learning Outcomes evaluation

	PLOs	Learning Method	Assessment
PLO1	Demonstrate ethical consideration in medical practice.	Instructor demonstrates ethical mind and practice during clinical practice (by roleplaying)	Observation on student's attitude and behavior (Rubric scale)
PLO2	Demonstrate ethical consideration and code of conduct in clinical research.	Instructor demonstrates ethical mind and practice during seminar and clinical research. (by roleplaying)	Observation on student's attitude and behavior (Rubric scale)
PLO3	Describe the tropical diseases in important aspects of epidemiology, clinical presentations, diagnosis, treatment, prevention and control.	- Lecture - Case presentation/ clinic visit - Case discussion - Work assignment	- MCQ - Participation (Rubric scale) - Assigned work
PLO4	Describe research methodologies and principle of good clinical practice.	- Work assignment/ Seminar - Thesis/thematic paper	- Assigned work - Research plan in Thesis/thematic paper (Rubric scale)
PLO5	Formulate the diagnosis and management of tropical pediatrics based on clinical information.	- Case discussion - Case presentation/ clinic visit - Seminar - Bed side teaching - Ward practice/ procedure practice - Laboratory practice	- OSCE - Participation (Rubric scale) - Assigned work (Rubric scale)
PLO6	Organize clinical research in tropical pediatrics according to international standard.	- Lecture - Seminar - Thesis/thematic paper	- Participation (Rubric scale) - Assigned work (Rubric scale)

	PLOs	Learning Method	Assessment
			- Research process in thesis/thematic paper (Rubric scale)
PLO7	Formulate professional teamwork in clinical practice.	- Ward practice	- Observation during ward practice (Rubric scale)
PLO8	Formulate professional teamwork in clinical research.	- Practice in site preparation and data collection during research for thesis/thematic paper.	- Observation during research process (Rubric scale)
PLO9	Retrieve, process and analyze data using appropriate technologies.	- Seminar - Thesis/thematic paper	- Participation (Rubric scale) - Assigned work (Rubric scale) - Analyzing data in Thesis/thematic paper (Rubric scale)
PLO10	Present data and communicate using appropriate technologies.	- Lecture - Seminar - Scientific presentation - Thesis/thematic paper	- Participation (Rubric scale) - Assigned work (Rubric scale)

Table 4: Relationship between courses of the program and Program Learning Outcomes

Code	Name	Credits	PLOs											
			1	2	3	4	5	6	7	8	9	10		
1. Required Courses														
TMMH 502	Food- and Water-borne Diseases: Soil-transmitted Helminthiasis	3 (2-2-5)	I		I		I						I	I
TMMH 503	Food- and Water-borne Diseases: Tissue Parasites	2 (2-0-4)	I		I		I							
TMMH 504	Important Mosquito-borne Diseases	3 (3-0-6)	I		I		I							
TMTP 510	Seminar in Tropical Pediatrics	3 (3-0-6)	I	I/P	R	I/P	R	I/P			P	P/M	P/M	
TMTP 511	Common Pediatric Problems	2 (2-0-4)	I/R		I/R		I/R							
TMTP 513	Tropical Pediatric Apprenticeship	4 (1-6-5)	P/M		P/M		P/M		P/M			P	P/M	
2. Elective Courses														
TMID 510	Statistics for Clinical Research	3 (2-2-5)		I		I/P		I/P			I			I/P
TMMH 501	Principal of Tropical Medicine and Hygiene	3 (3-0-6)	I		I		I							

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Code	Name	Credits	PLOs										
			1	2	3	4	5	6	7	8	9	10	
TMMH 505	Non-mosquito Vector-borne Diseases and Zoonoses	2 (2-0-4)	I		I		I						
TMMH 506	Sexually Transmitted Diseases and Human Immunodeficiency Virus Related Problems	2 (2-0-4)	I		I		I						
TMMH 507	General Health Problems and Common Diseases in the Tropics	2 (2-0-4)	I		I		I						
TMTP 512	General Pediatric Apprenticeship	4 (2-4-6)	P/M		P		P		P/M		P	P/M	
TMTP 514	Critical Review in Tropical Pediatrics	2 (2-0-4)	R	P/M	R	P/M	R	P		P	P/M	P/M	
TMTP 698	Thesis (Plan A2)	12 (0-36-0)	P	P/M	P	P/M	P	P/M	P	P/M	P/M	P/M	
TMTP 697	Thematic paper (plan B)	6 (0-18-0)	P	P/M	P	P/M	P	P/M	P	P/M	P/M	P/M	

I = ELO is introduced & assessed

R = ELO is reinforced & assessed

P = ELO is practiced & assessed

M = Level of Mastery is assessed

APPENDIX E

The Revised Curriculum

Appendix E
(For only Revised Curriculum)
The Revision of Master of Clinical Medicine
Program in Tropical Pediatrics (Internation Program)
Volume B.E. 2012
Faculty of Tropical Medicine
and Faculty of Graduate Studies, Mahidol University

1. The Curriculum was approved by the Office of the Higher Education Commission on October 31, 2012
2. The Mahidol University Council has approved this revised curriculum in the 531 meeting on 18 April, 2018
3. The revised curriculum will be effective with student class 2018 from the I Semester of the Academic Year 2018 onwards

4. Rationale of revision

4.1 The curriculum is revised to be in accordance with Thai Qualification Framework for Higher Education B.E. 2552.

4.2 To provide more opportunity for general practitioners to study this program, therefore enrolment criteria were revised.

4.3 To improve the graduate quality in pediatric practice as a result, new courses were added.

4.4 To clearly specify the objective and evaluation process of program complying with Objective Based Education.

5. The details of the revision

5.1 Adjust the qualification of prospective students by changing “at least 1 year of pediatric experience” to “at least 1 year of clinical experience”.

5.2 Adjust the number of credit and required/elective courses and list of courses as mentioned in the following table “The Comparison Table of Courses between the Current Program and Revising Program” and Appedix E No. 6.

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The Mahidol University council has approved the adjusted program on 18 April, 2018

5.3 Adjust the Full time lecturers of the curriculum and the lecturers in charge of the curriculum as the following

Current	Revised
Assoc. Prof. Chukiat Sirivichayakul *	Assoc. Prof. Chukiat Sirivichayakul
Asst. Prof. Kriengsak Limkittikul *	Asst. Prof. Kriengsak Limkittikul *
Lect. Raweerat Sitcharungsi	-
Lect. Weerawan Hattasingh *	Lect. Weerawan Hattasingh *
Lect. Dr. Supawat Chatchen	Lecturer Dr. Supawat Chatchen *

* Lecturers Responsible for the Program

5.4 The Comparison Table of Courses between the Current Program and Revising Program
Plan A2

Courses of the Current Program	Courses of the Revising Program	Remark
Required Courses (21 credits)	Required Courses (17 credits)	
TMID 525 Food- and Water-Borne Diseases (I) and Soil-Transmitted Helminthiases 3(2-2-5)	TMMH 502 Food- and Water-Borne Diseases : Soil-Transmitted Helminthiases 3(2-2-5)	Change the course code and course title
TMID 527 Mosquito-Borne Diseases 3(2-2-5)	TMMH 504 Important Mosquito-borne Diseases 3(3-0-6)	Change the course code, course title and change lecture credits, practice credits, and self study
TMTP 501 Pediatric Problems in the Tropics 2(2-0-4)	-	Cancel
TMTP 504 Management of Common Pediatric Problems 2(2-0-4)	-	Closed
TMTP 506 Pediatric Apprenticeship I 4(1-6-5)	-	Closed
TMTP 507 Pediatric Apprenticeship II 4(1-6-5)	-	Closed
TMTP 510 Seminar in Tropical Pediatrics 3(3-0-6)	TMTP 510 Seminar in Tropical Pediatrics 3(3-0-6)	No change
	TMMH 503 Food- and Water-Borne Disease: Tissue Parasites 2(2-0-4)	Switch from elective course to required course Change the course code,

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Courses of the Current Program	Courses of the Revising Program	Remark
		course title and course description (TMID 526)
	TMTP 511 Common Pediatric Problems 2(2-0-4)	New course
	TMTP 513 Tropical Pediatric Apprenticeship 4(1-6-5)	New course
Elective Courses (3 credits)	Elective Courses (7 credits)	
TMID 526 Food- and Water-Borne Disease (II) (Tissue Parasites) 2(2-0-4)	-	Switch from elective course to required course (TMMH 503)
TMID 528 Non-mosquito Vector-borne Diseases and Zoonoses 2(2-0-4)	TMMH 505 Non-mosquito Vector-born Diseases and Zoonoses 2(2-0-4)	Change the course code
TMID 529 Sexually Transmitted Diseases and Human Immuno Deficiency Virus Related Problems 2(2-0-4)	TMMH 506 Sexually Transmitted Diseases and Human Immunodeficiency Virus-Related Problems 2(2-0-4)	Change the course code
TMID 530 Common Health Problems and Diseases in the Tropics 2(2-0-4)	TMMH 507 General Health Problems and Common Diseases in the Tropics 2(2-0-4)	Change the course code
TMID 543 Travel Medicine I 1(1-0-2)	-	Closed
TMCD 503 Introduction to Clinical Research 1(1-0-2)	-	Cancel
TMCD 532 Travel Medicine II 2(2-0-4)	-	Cancel
TMTP 509 Critical Review in Pediatrics 3(3-0-6)	-	Cancel
TMID 547 Clinical, Community Study and Laboratory Practice 2(0-4-2)	-	Closed
TMNU 518 Human Nutrition 2(2-0-4)	-	Cancel
-	TMTP 512 General Pediatric Apprenticeship 4(2-4-6)	New course
-	TMTP 514 Critical Review in Tropical Pediatrics 2(2-0-4)	New course

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Courses of the Current Program	Courses of the Revising Program	Remark
-	TMID 510 Statistics for Clinical Research 3(2-2-5)	Add course
-	TMMH 501 Principal of Tropical Medicine and Hygiene 3 (3-0-6)	Add course
3. Thesis	3. Thesis	
TMTP 698 Thesis 12(0-36-0)	TMTP 698 Thesis 12(0-36-0)	No change

Plan B

Courses of the Current Program	Courses of the Revising Program	Remark
Required Courses (21 credits)	Required Courses (17credits)	
TMID 525 Food- and Water-Borne Diseases (I) and Soil-Transmitted Helminthiases 3(2-2-5)	TMMH 502 Food- and Water-Borne Diseases : Soil-Transmitted Helminthiases 3(2-2-5)	Change the course code and course title
TMID 527 Mosquito-Borne Diseases 3(2-2-5)	TMMH 504 Important Mosquito-borne Diseases 3(3-0-6)	Change the course code, course title and change lecture credits, practice credits, and self study
TMTP 501 Pediatric Problems in the Tropics 2(2-0-4)	-	Cancel
TMTP 504 Management of Common Pediatric Problems 2(2-0-4)	-	Closed
TMTP 506 Pediatric Apprenticeship I 4(1-6-5)	-	Closed
TMTP 507 Pediatric Apprenticeship II 4(1-6-5)	-	Closed
TMTP 510 Seminar in Tropical Pediatrics 3(3-0-6)	-	No change
	TMMH 503 Food- and Water-Borne Disease: Tissue Parasites 2(2-0-4)	Switch from elective course to required course Change the course code, course title and course description (TMID 526)
	TMTP 511 Common Pediatric Problems 2(2-0-4)	New course

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Courses of the Current Program	Courses of the Revising Program	Remark
	TMTP 513 Tropical Pediatric Apprenticeship 4(1-6-5)	New course
Elective Courses (3 credits)	Elective Courses (13 credits)	
TMID 526 Food- and Water-Borne Disease (II) (Tissue Parasites) 2(2-0-4)	-	Switch from elective course to required course (TMMH 503)
TMID 528 Non-mosquito Vector-borne Diseases and Zoonoses 2(2-0-4)	TMMH 505 Non-mosquito Vector-born Diseases and Zoonoses 2(2-0-4)	Change the course code
TMID 529 Sexually Transmitted Diseases and Human Immuno Deficiency Virus Related Problems 2(2-0-4)	TMMH 506 Sexually Transmitted Diseases and Human Immunodeficiency Virus-Related Problems 2(2-0-4)	Change the course code
TMID 530 Common Health Problems and Diseases in the Tropics 2(2-0-4)	TMMH 507 General Health Problems and Common Diseases in the Tropics 2(2-0-4)	Change the course code
TMID 543 Travel Medicine I 1(1-0-2)	-	Closed
TMCD 503 Introduction to Clinical Research 1(1-0-2)	-	Cancel
TMCD 532 Travel Medicine II 2(2-0-4)	-	Cancel
TMTP 509 Critical Review in Pediatrics 3(3-0-6)	-	Cancel
TMID 547 Clinical, Community Study and Laboratory Practice 2(0-4-2)	-	Closed
TMNU 518 Human Nutrition 2(2-0-4)	-	Cancel
	TMTP 512 General Pediatric Apprenticeship 4(2-4-6)	New course
	TMTP 514 Critical Review in Tropical Pediatrics 2(2-0-4)	New course
	TMID 510 Statistics for Clinical Research 3(2-2-5)	Add course
	TMMH 501 Principal of Tropical Medicine and Hygiene 3(3-0-6)	Add course

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Courses of the Current Program	Courses of the Revising Program	Remark
3. Thematic Paper	3. Thematic Paper	
TMTP 697 Thematic Paper 6(0-18-0)	TMTP 697 Thematic Paper 6(0-18-0)	No change

6. The Comparison Table of the Curriculum Structure between the Current Program and Revised Program Based on Criteria on Graduate Studies B.E. 2558 (set by Ministry of Education)

6.1 Plan A

Course Category	Credits		
	Criteria on Graduate Studies B.E. 2558	Curriculum Structure of the Current Program	Curriculum Structure of the Revised Program
1. Required courses	Study courses not less than 24 credits	21	17
2. Elective courses		3	7
3. Thesis		12	12
Total credits (not less than)	36	36	36

6.2 Plan B

Course Category	Credits		
	Criteria on Graduate Studies B.E. 2558	Curriculum Structure of the Current Program	Curriculum Structure of the Revised Program
1. Required courses	Study courses not less than 12 credits Not less than 3-6 credits	21	17
2. Elective courses		9	13
3. Thematic paper		6	6
Total credits (not less than)	36	36	36

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