Krystyna Aune, Ph.D.
Dean, Graduate Division
Office of Graduate Education
University of Hawai‘i at Mānoa
2560 Maile Way, Spalding 360
Honolulu, HI 96822

Dear Dr. Aune and Graduate Council Members:

We are pleased to offer this proposal for the Graduate Certificate program in Tropical Medicine from the Department of Tropical Medicine, Medical Microbiology and Pharmacology, John A. Burns School of Medicine, University of Hawai‘i at Mānoa (UH JABSOM) for consideration by the Graduate Council to move forward to the next step in the process of program approval.

Thank you for considering this application to become an approved Graduate Certificate program in Tropical Medicine. We are confident that the leadership, faculty and administrative support staff for the UH JABSOM Certificate in Tropical Medicine will meet or exceed your expectations and standards.

Sincerely,

Sandra P. Chang, Ph.D.
Professor and Graduate Program Chair
Research Coordinator, RCMI Translational Research Network (RTRN)
Department of Tropical Medicine, Medical Microbiology and Pharmacology, JABSOM

Vivek R. Nerurkar, DMLT, MSc, Ph.D.
Professor and Chair,
Department of Tropical Medicine, Medical Microbiology and Pharmacology, JABSOM

Jerris R. Hedges, M.D., M.S, MMM
Professor and Dean
Barry & Virginia Weinman - Endowed Chair
651 Ilalo Street, Biosciences Building, Third Floor, Honolulu, Hawai‘i 96813
Telephone: (808) 692-1600, Fax: (808) 692-1979

An Equal Opportunity/Affirmative Action Institution
Proposal for a

Graduate Certificate in Tropical Medicine

Department of Tropical Medicine, Medical Microbiology & Pharmacology

John A. Burns School of Medicine

University of Hawai‘i at Mānoa

September, 2015
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GRADUATE CERTIFICATE IN TROPICAL MEDICINE

Goals and Objectives

The graduate certificate in Tropical Medicine will provide a mechanism for students to obtain the knowledge and skills needed to successfully pursue a career in clinical tropical infectious diseases ("clinical track") or non-clinical, allied health careers that require a background in tropical infectious diseases ("non-clinical track"), including public health epidemiology, medical technology, and biotechnology. For individuals in the clinical track, the Tropical Medicine certificate curriculum will prepare them for the national certification examination in Clinical Tropical Medicine and Travelers' Health. The certificate program also offers an option for post-baccalaureate students preparing for medical and pharmacy school to obtain a year of advanced biomedical training prior to applying to a professional school.

The courses needed to complete the certificate are currently available as part of the existing MS and PhD graduate degree programs in the John A. Burns School of Medicine. The distinction from these programs is that while the MS and PhD programs emphasize research training and require between 2-5 years for completion, the 1 year certificate program does not have a research training requirement but instead calls for a practicum that provides a clearly defined, real-world field experience in the student’s area of interest.

The overall objective of the certificate program is to promote health-related career opportunities in the academic, governmental and private sectors locally, nationally, and internationally.

Program Need

Program justification

Tropical infectious diseases inflict substantial health and economic burdens on developing countries, including many nations in the Asia-Pacific region. Many of these infections, HIV, tuberculosis, and malaria, for example, can become chronic and exacerbate the problem of poverty, thus hindering economic progress. With limited resources, impoverished countries have little capacity to develop or implement control programs. More than 2 decades ago a call for a more active role from United States' medical schools in international medical education was sounded citing a number of reasons, not the least of which is the fact that disease knows no boundaries. As a consequence of increased migration and international tourism to the US, and to the State of Hawai‘i in particular, the introduction of tropical infectious diseases is increasing in areas where knowledge of these conditions is limited.
The University of Hawai‘i system (UH) has a collection of global health programs spread across a number of different campuses, such as the Colleges of Arts and Sciences, School of Nursing and Dental Hygiene, the College of Pharmacy, public health, medicine, and others. These include curricular offerings, faculty and student exchange programs, degree programs, clinical trials, clinical service opportunities, and public health and population-based initiatives. However, the Tropical Medicine program is unique in its focus on global infectious diseases, particularly those endemic to tropical environments. Since its inception in 1967, the Department of Tropical Medicine, Medical Microbiology and Pharmacology based at the John A. Burns School of Medicine (JABSOM) has been a major contributor to global health education. Over the last 40 years the department’s Master’s and PhD programs have trained students from China, Japan, Nepal, India, Thailand, Malaysia, The Philippines, Panama, Zambia, Zaire, and Zimbabwe as well as from all parts of the U.S. The proposed certificate in Tropical Medicine will provide a mechanism for students to obtain the knowledge and skills needed to play a significant role in control and prevention programs for the 21st century global resurgence of infectious diseases.

In 2012, the department faculty received five years of funding from the Fogarty International Center, National Institutes of Health to train Cameroonian students in conducting malaria research (D43TW009074) and the Global Health Fellowship program to support postdoctoral fellows and scholars to conduct infectious diseases research in low middle-income countries (R25MH080661). A Certificate in the Tropical Medicine program would complement three (3) Department of Tropical Medicine, Medical Microbiology and Pharmacology NIH-funded training programs for undergraduate and graduate students as well as provide a route for non-degree seeking professionals to obtain the knowledge and skills related to infectious diseases.1,2,3,4,5

Program impact on workforce needs

The Tropical Medicine certificate program provides an opportunity for health care professionals working in the community to obtain critical training in emerging infections that have the potential to be introduced in Hawai‘i and the rest of the United States. The Tropical Medicine certificate program will provide training in emerging infection diseases critical for epidemic and pandemic preparedness and maintenance of community health.

More than 2 decades ago a call for a more active role from United States medical schools in international medical education was sounded citing a number of reasons, not the least of which was the fact that disease knows no boundaries. As a consequence of increased migration and international tourism to the US, and to the State of Hawai‘i in particular, the introduction of tropical infectious diseases into areas unfamiliar with these conditions is increasing. An illustration of this growing need was recently published citing the need to train both laboratorians and clinicians to recognize parasitic infections.6
Needs met by existing UH program(s)

The UH Tropical Medicine Certificate program would be unique in that it would be the only one of its kind offered between Texas and Thailand (Appendix B). In addition, there is currently no certificate program in the biomedical sciences at the School of Medicine although there is a demand for such a program. An example of which is noted in a letter of support from the 'Imi Ho'ola Post Baccalaureate Program. We would expect it to be most relevant to medical, public health and biomedical science students but expect the certificate program to also generate interest and participation from students at other UH units such as nursing and pharmacy.

Program alignment with system and campus mission and strategic plans

This certificate program is consistent with JABSOM’s basic mission to teach and train high-quality physicians, biomedical scientists, and allied health workers for Hawai‘i and the Pacific. The courses offered as part of this certificate program provide a core foundation in tropical medicine and infectious diseases offered through our current graduate degree programs and are consistent with curriculum content offered by other highly-regarded academic institutions offering similar certificates or diplomas in the US and abroad.

With respect to JABSOM’s MD educational curriculum, the Tropical Medicine certificate program will offer one option to fulfill the Liaison Committee on Medical Education (LCME) requirements for research training and experience for students in the MD program. Specifically, this program will address two areas highlighted during the previous LCME accreditation review:

- **ED-12:** The curriculum of a medical education program should include laboratory or other practical opportunities for the direct application of the scientific method, accurate observation of biomedical phenomena, and critical analysis of data.
- **ED-17-A:** The curriculum of a medical education program must introduce medical students to the basic scientific and ethical principles of clinical and translational research; including the ways in which such research is conducted, evaluated, explained to patients, and applied to patient care.

The UH Tropical Medicine certificate program embodies the essence of the UHM 2011-2015 Strategic Plan “Achieving Our Destiny”. The certificate program touches on each of the four Strategic Goals, specifically focusing on Goals 1 and 3; increase experimental learning opportunities across curriculum, expand and create transdisciplinary opportunities and programs, increase appreciation and understanding of cultural expression in Hawai‘i and the Asia-Pacific Rim.

Finally, this program addresses first lady Michelle Obama’s initiative to “train the nation’s physicians to meet the unique health care needs of the military and veterans communities,”
by providing training in infectious diseases that often afflict US troops (White House press release, 1/11/2012). JABSOM is one of the 130 institutions nationwide that have committed to this important initiative. The certificate in Tropical Medicine can contribute to training offered to medical students, medical residents and fellows, and physicians at Tripler Army Medical Center. Completing the courses in the clinical track of the certificate can help to prepare them for national certification in Clinical Tropical Medicine and Travelers' Health.

Program will fit within campus and/or system organizational structure

The proposed certificate program will be located in and administered by the Department of Tropical Medicine, Medical Microbiology and Pharmacology at the John A. Burns School of Medicine. Students enrolled in the certificate program will be advised by one of the faculty associated with the Department of Tropical Medicine, Medical Microbiology and Pharmacology. The program director will consult with students and faculty advisors on a regular basis to ensure students are making good progress and that the program is meeting their expectations.

Impact of program on accreditation

Academic departments within JABSOM (Department of Tropical Medicine, Medical Microbiology and Pharmacology; Department of Public Health Sciences; Department of Pediatrics) who already provide instructional support for currently offered courses in the Department of Tropical Medicine will make these courses available to students enrolled in this certificate program. The certificate program will have a positive impact on MD program accreditation since it will address the LCME requirement to diversify educational opportunities for medical students.

Program impact on campus, island and/or the state's economic development.

The certificate program will provide a new option for students and health field professionals to diversify their training to address problems associated with tropical infectious diseases that often affect nations in the Asia Pacific region and have the potential to be spread to Hawai‘i and the continental US. It will also attract potential students from Asia and the Pacific Islands to come to the University of Hawai‘i to obtain training in the management of these diseases that are relevant to their own countries.

Program Description

The Tropical Medicine certificate program is a 1-year program that will provide training in infectious diseases including bacteriology, mycology, virology, parasitology, laboratory diagnosis and methodology, and immunology. In addition to coursework, students will participate in a seminar course in infectious disease control and complete a capstone project related to their area of interest within the field of tropical infectious diseases. The core courses for the proposed certificate are currently available as part of the
graduate degree program in Tropical Medicine, Medical Microbiology and Pharmacology and JABSOM.

Program Organization

The certificate program focuses on imparting essential knowledge and competencies in tropical medicine, laboratory skills for a low-technology setting, epidemiology and disease control, and travelers’ health. The curriculum is designed to cover all core-required topics including a diagnostic laboratory component for American Society of Tropical Medicine and Hygiene (ASTMH) certification. Course content will emphasize didactic lectures, case studies and small group problem-solving sessions aimed at practical knowledge for clinician and public health professionals.

Program Administration

The certificate program will be housed in the Department of Tropical Medicine, Medical Microbiology and Pharmacology and administered by a Program Director in association with the Department's Graduate Program Chair.

Admissions criteria
To be eligible to apply, an applicant needs to possess a bachelor’s degree from a regionally accredited U.S. college or university, or an equivalent degree from a recognized non-U.S. institution of higher education. At minimum, the applicant needs to demonstrate above average academic performance (B average or its equivalent) for undergraduate course work and for any post-baccalaureate or graduate course work. Students electing to pursue the clinical track for this program will need to possess a professional degree in a health science field (MD, Bachelor of Nursing, DVM, PharmD, DO, or equivalent). Applicants whose native language is not English or who have not received an undergraduate or graduate degree in an English-speaking institution will be required to take either the TOEFL or IELTS English proficiency exam as per the UHM requirement.

UH criteria for graduate certificate
A UH graduate certificate program requires a minimum of 15 credit hours of coursework at UH Mānoa, at least nine of which must be at the graduate level (600-700). We will include a capstone project (defined later in the document) to complete the experience.
Successful completion of the certificate program requires passing the required courses with a grade of B or higher, and a cumulative GPA of 3.0 for all courses counted towards the certificate. It is expected that students will complete the certificate degree program within 2 semesters of full-time enrollment or 4 semesters of half-time enrollment.

Culminating Experience
The Capstone Project provides an opportunity for students in the certificate program to pursue their own interests within the framework of the expertise offered by the Department of Tropical Medicine, Medical Microbiology and Pharmacology under the supervision of an advisor selected among faculty affiliated with the program. This project can take the form of a literature review paper of publishable quality on an aspect of Tropical Medicine, a research or career development grant proposal with the student as principal author, a competency-based examination, or other capstone project approved by the Program Director. The examination option is designed to measure a candidate’s knowledge and skills in relation to an established standard rather than the performance of other candidates, and will serve as a practice examination for individuals who choose to sit for the ASTMH national Certificate of Knowledge in Clinical Tropical Medicine and Travelers' Health examination. However, successful completion of the national certificate examination will not be considered a replacement for a departmental approved Capstone Project.

Sample curriculum

Core Curriculum for Both Tracks

- TRMD 603: Infectious Disease Microbiology I: Medical Parasitology (3 credits)
- TRMD 605: Infectious Disease Microbiology II: Virology (3 credits)
- TRMD 608: Infectious Disease Microbiology III: Bacteriology & Mycology (3 credits)
- PH 666: Seminar in Infectious Disease Control (3 credits)

Track 1: Clinicians
The clinical track will require at least 3 credits in one or more of the following elective courses:

- TRMD 602: Laboratory Methods in Tropical Medicine (2 credits)
- TRMD 705: Special Topics in Tropical Medicine (Variable credit)

The following is a requirement of the clinical track:
- Capstone Project
  An examination to measure a candidate’s knowledge and skills in Clinical Tropical Medicine and Travelers' Health in relation to established criteria defined by the American Society of Tropical Medicine & Hygiene and will serve as the capstone
requirement for the certificate. This capstone project may be completed by enrolling in TRMD 699 Directed Reading/Research for up to 2 credits

Track 2: Non-clinicians
The non-clinical track will require at least 3 credits in one or more of the following elective courses:

- TRMD 604: Concepts in Immunology and Immunopathogenesis (2 credits)
- TRMD 607: Neurovirology (1 credit)
- TRMD 609: Advances In Medical Immunology (3 credits)
- TRMD 610: Infection and Immunity (3 credits)
- TRMD 650: Ecological Epidemiology (2 credits)
- TRMD 652: Advanced Genetics and Evolution of Infectious Diseases (2 credits)
- TRMD 653: Bioinformatics and Molecular Evolution (2 credits)
- TRMD 654: Advances in HIV/AIDS (2 credits)
- TRMD 655: Principles of Biostatistics (3 credits)
- TRMD 671: Advanced Medical Parasitology (2 credits)
- TRMD 672: Advanced Medical Virology (2 credits)
- TRMD 673: Advanced Medical Bacteriology (2 credits)
- TRMD 675: Epidemiology of Tropical Infectious Diseases (3 credits)
- TRMD 690: Seminar in Tropical Medicine and Public Health (1 credit)

The following is a requirement of the non-clinical track:

- Capstone Project
  A written report for a literature-based research paper of publishable quality on a topic of Tropical Medicine of interest to the student, a research or career development grant proposal with the student as principal author, a competency-based examination, or other capstone project approved by the program director. This capstone project may be completed by enrolling in TRMD 699 Directed Reading/Research for up to 2 credits

Assessment of Student Performance
Assessment of student performance for individual courses is done through examinations, instructor and peer evaluation of oral presentations, instructor assessment of laboratory performance, and feedback from faculty interactions with students.

The required capstone project will be evaluated by a three-member assessment committee, consisting of the faculty advisor and two additional faculty members appointed by the program director in consultation with the student.

Assessment of Program Effectiveness
The effectiveness of the certificate program will be measured by demand for the program (number of applications), program completion rates, student evaluations of course offerings and curriculum, sampling of capstone projects, tracking of publication of capstone projects, and the number of participating clinicians who successfully complete the national examination leading to the Certificate of Knowledge in Clinical Tropical
Program learning outcomes

Within the framework of conceptual knowledge developed in our courses, we are committed to ensuring that our students graduate with demonstrated ability to:

- Demonstrate a fundamental knowledge in the major sub-disciplines within the field of Tropical Medicine:
  - Bacteriology
  - Mycology
  - Parasitology
  - Virology
- Explain the epidemiological, immunological and pathophysiological basis of disease processes common in the tropics
- Summarize, analyze, and synthesize scientific and Tropical Medicine-related literature
- Articulate conclusions and implications of current issues related to the field of Tropical Medicine
- Communicate with both specialist and non-specialist audiences on topics related to the field of Tropical Medicine

Tuition and Fees

Estimated Annual Tuition Revenue (2016-2017) for Full-Time Graduate Students

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<th>STUDENTS</th>
<th>TUITION &amp; FEES PER STUDENT</th>
<th>TOTAL</th>
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<td>Fall 2016</td>
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<tr>
<td>6 Resident</td>
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<tr>
<td>6 Non-resident</td>
<td>18,384</td>
<td>110,304</td>
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<td></td>
<td>Spring 2017</td>
<td></td>
</tr>
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<td>6 Resident</td>
<td>7,644</td>
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</tr>
<tr>
<td>6 Non-resident</td>
<td>18,384</td>
<td>110,304</td>
</tr>
<tr>
<td>Total Estimated Annual Tuition</td>
<td></td>
<td>312,336</td>
</tr>
</tbody>
</table>
Program Resources

Description of resources required

No additional resources will be required for this program as the courses needed to begin the certificate program are currently available for all graduate and medical students to take as part of their degree program in Tropical Medicine, Medical Microbiology and Pharmacology and JABSOM.

Library resources

The library resources include publications available in the University library, mainly in the Health Sciences Library and in the University of Hawai‘i databases. The present resources available in the UH library are adequate for this proposed Certificate Program. The Program does not require additional library resources (Appendix C).

Five-year business plan

Annual costs to implement the program

No significant additional resources will be required for this program. Existing faculty have been teaching a wide range of Tropical Medicine courses. Library resources, physical resources and any other resources required for the Certificate currently exist in the John A. Burns School of Medicine.

Projected enrollment and estimated tuition revenue

We anticipate that approximately 10 to 12 students will be enrolled in this graduate certificate program in Tropical Medicine each year. All participating students are expected to be in residence at the University of Hawai‘i at Mānoa during training as there are no online options for the coursework offered through this program. Students will pay full tuition for the program.

How will the program be funded?

The projected revenues and costs for this program are outlined below, however, it should be noted that all of these courses are currently being offered, so that additional revenue to support their delivery are not anticipated or budgeted.

Does the current or proposed budget (Department/College/Campus) include funds or a request for funds for the proposed program?

No additional budget resources are requested. The Department of Tropical Medicine, Medical Microbiology & Pharmacology has 29 Graduate Faculty and 15 Adjunct Faculty involved in teaching currently offered courses.
Given a "flat budget" situation, how will the proposed program be funded?

No additional resources are requested for this program, which will be funded by allocation of existing resources. However, it is anticipated that the program will be of interest to private donors and will also position the UHM for increased partnerships that may result in increased support for the department and JABSOM.

Impact on current courses or programs

Implementation of the proposed certificate program should have minimal impact on the existing programs within the Department of Tropical Medicine.

If this program is multidisciplinary, provide evidence of commitment for support from the colleges, departments, programs, and/or individuals expected to participate.

Letters of support are included in Approval to Plan proposal (Appendix A) and below.

References

1. Shiramizu B, Maeshiro M. At the crossroads: past, current, and future of the University of Hawai'i John A. Burns School of Medicine-Okinawa Chubu Hospital partnership. Hawai'i Med J. 2008 Sep;67(9):246, 251.


September 1, 2015

Krystyna Aune, PhD
Dean, Graduate Division
Office of Graduate Education
University of Hawai'i at Mānoa
2560 Maile Way, Spalding 360
Honolulu, HI 96822

Dear Dr. Aune and Committee Members:

I am pleased to offer this letter of support for the proposed Graduate Certificate program in Tropical Medicine from the Department of Tropical Medicine, Medical Microbiology and Pharmacology, John A. Burns School of Medicine, University of Hawai'i at Mānoa (UH JABSOM).

The UH JABSOM proposed Graduate Certificate in Tropical Medicine will be an important contributor to our medical school's basic mission to teach and train high-quality physicians, biomedical scientists, and allied health workers for Hawai'i and the circum-Pacific. This program will provide a mechanism for future healthcare practitioners from developing countries to obtain the knowledge and skills essential to play a significant role in control and prevention programs for the 21st century global resurgence of infectious diseases. It will also provide physicians from developed countries the opportunity to gain the knowledge, skills and tools required to diagnose and manage imported infections. As this proposed Graduate Certificate program in Hawaii would be the only one of its kind between Texas and Thailand, it has the potential to fill an important niche for a number of future healthcare providers.

Thank you for considering this application to become an approved Graduate Certificate program in Tropical Medicine. I am confident that the leadership, faculty and administrative support staff for the UH JABSOM certificate in Tropical Medicine program will meet or exceed your highest expectations and standards.

Sincerely,

Jerris R. Hedges, MD, MS, MMM
Professor and Dean
Barry & Virginia Weinman – Endowed Chair

c: Vivek R. Nerurkar, DMLT, MSc, PhD, Professor and Chair, Department of Tropical Medicine, Medical Microbiology and Pharmacology, JABSOM
Richard Kasuya, MD, MSEd, Associate Dean for Medical Education, JABSOM
Mariana Gerschenson, PhD, Director of Research and Graduate Education, JABSOM
August 7, 2015

Krystyna Aune PhD
Dean, Graduate Division
University of Hawai‘i at Manoa

Dear Dean Aune,

It is my pleasure to offer a letter in support of the proposed Certificate in Tropical Medicine Program. As Director of the ‘Imi Ho‘ola Post-Baccalaureate Program, I have worked directly with Dr. William Gostnell and am aware of his diligence and dedication to establishing this valuable addition to the medical school. For the past 40 years, ‘Imi Ho‘ola has improved health care services in Hawai‘i and the Pacific by promoting the success of students from disadvantaged backgrounds who are pursuing careers in the health professions. Upon completion of the ‘Imi Ho‘ola program, students enter the John A. Burns School of Medicine.

A Certificate in Tropical Medicine would be an excellent training opportunity for future and current health care providers. I believe that graduates of the ‘Imi Ho‘ola program would directly benefit from the educational opportunity that this certificate program would provide. I strongly support this initiative and thank you for your time and consideration.

Sincerely,

Winona K. Lee, MD
Director
‘Imi Ho‘ola Post-Baccalaureate Program
MEMORANDUM

TO: Jerris Hedges, Dean
John A. Burns School of Medicine

FROM: Reed Dasenbrock
Vice Chancellor
for Academic Affairs

SUBJECT: Approved Authorization to Plan (ATP) for a Graduate Certificate in Tropical Medicine, John A. Burns School of Medicine, University of Hawai‘i at Mānoa

Chancellor Bley-Vroman has approved your ATP for a Graduate Certificate in Tropical Medicine to be administered by the Department of Tropical Medicine, Medical Microbiology & Pharmacology. We look forward to receiving the program proposal in Spring 2016.

Should you have any questions, please contact Program Officer Wendy Pearson at 956-6145.

Attachment

c: Vice President for Academic Affairs Dickson
Dean Aune, Graduate Education
Chair Nerurkar, Tropical Medicine, Medical Microbiology & Pharmacology
Chair Bontekoe, Mānoa Faculty Senate
Director Nagao, Mānoa Budget Office
Program Officer Pearson
MEMORANDUM

TO: Robert Bley-Vroman
   Interim Chancellor

FROM: Reed Dasenbrock
   Vice Chancellor for Academic Affairs

SUBJECT: Authorization to Plan for Graduate Certificate in Tropical Medicine

Attached please find an Authorization to Plan (ATP) for a Graduate Certificate in Tropical Medicine, to be administered by the Department of Tropical Medicine, Medical Microbiology & Pharmacology in the John A. Burns School of Medicine.

Tropical infectious diseases can impose significant health and economic burdens, particularly on developing countries with limited capacity to develop or implement control programs. The proposed Graduate Certificate in Tropical Medicine will provide PhD and Doctor of Medicine students with training in the management of tropical diseases that are relevant to the Asia Pacific region. No new resources are required as the proposed program will utilize existing faculty, courses, and facilities.

The ATP was reviewed favorably by my staff and Dean Aune of Graduate Education. I recommend that you approve the ATP.

Attachment

c: Dean Aune, Graduate Education
   Dean Hedges, JABSOM
   Chair Nerurkar, Tropical Medicine, Medical Microbiology and Pharmacology
   Program Officer Pearson, Academic Affairs
January 6, 2015

MEMORANDUM

TO: Reed Dasenbrock
Vice Chancellor for Academic Affairs

FROM: Krystyna S. Aune, Dean
Graduate Education

SUBJECT: Authorization to Plan for a Graduate Certificate in Tropical Medicine

Attached, please find an Authorization to Plan (ATP) for the department of Tropical Medicine, Medical Microbiology and Pharmacology for a Graduate Certificate in Tropical Medicine.

I have approved the amended ATP dated December 2014; please disregard previously submitted ATP dated January 2014. The planning committee has made few adjustments that were approved by me upon close examination of the file.

Should you have any questions, please contact Petra G. Kubalkova, Assistant to the Dean, at 956-7542.

Attachment
KA: pgk
Authorization to Plan a New Academic Program

Certificate in Tropical Medicine

Department of Tropical Medicine, Medical Microbiology & Pharmacology

John A. Burns School of Medicine

University of Hawai'i at Mānoa

December, 2014
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School/College and Department/Unit

The John A. Burns School of Medicine (JABSOM) and the Department of Tropical Medicine, Medical Microbiology and Pharmacology

Planning Committee

William L. Gosnell, Ph.D., Chair
Sandra Chang, Ph.D.
Kenton Kramer, Ph.D.
Vivek R. Nerurkar, Ph.D.

Degree/Certificate Proposed

Graduate Certificate in Tropical Medicine

Program Description and Need

Program learning outcomes

Within the framework of conceptual knowledge developed in our courses, we are committed to ensuring that our students graduate with demonstrated ability to:

- Demonstrate a fundamental knowledge in the major sub-disciplines within the field of Tropical Medicine:
  - Bacteriology
  - Mycology
  - Parasitology
  - Virology
- Explain the epidemiological, immunological and pathophysiological basis of disease processes common in the tropics
- Summarize, analyze, and synthesize scientific and Tropical Medicine-related literature
- Articulate conclusions and implications of current issues related to the field of Tropical Medicine
- Communicate with both specialist and non-specialist audiences on topics related to the field of Tropical Medicine

Program justification

The University of Hawaii system (UH) has a collection of global health programs spread across a number of different campuses settings, such as the schools of arts and sciences, nursing, pharmacy, public health, medicine, and others. These include curricular offerings, faculty and student exchange programs, degree programs, clinical trials, clinical service opportunities, and public health and population-based initiatives. However, the Tropical Medicine program is unique in its focus on global infectious diseases, particularly those
endemic to tropical environments. Since its inception in 1967, the Department of Tropical Medicine, Medical Microbiology and Pharmacology based at the John A. Burns School of Medicine has been a major contributor to many global health programs. In 2012, the department faculty received five year funding from the Fogarty International Center, National Institutes of Health to train Cameroonian students in conducting malaria research (D43TW009074) and the Global Health Fellowship program to support postdoctoral fellows and scholars to conduct infectious diseases research in low middle-income countries (R25MH080661). The Certificate in Tropical Medicine program will complement three (3) Department of Tropical Medicine, Medical Microbiology and Pharmacology NIH-funded training programs for undergraduate and graduate students. Therefore, the Certificate Program will enhance the renewal of the training grants, which generate excess of $3,000,000. Over the last 40 years the department’s Master’s and PhD programs have trained students from China, Japan, Nepal, India, Thailand, Malaysia, The Philippines, Panama, Zambia, Zaire, and Zimbabwe as well as from all parts of the U.S. This proposed certificate in Tropical Medicine will provide a mechanism for students, admitted to and in good academic standing at a University of Hawaii’s graduate program or the MD degree program, to obtain the knowledge and skills needed to play a significant role in control and prevention programs for the 21st century global resurgence of infectious diseases.

**Discuss how the program will impact campus, island and/or the state’s economic development.**

The certificate program will provide a new option for students and health field professionals to diversify their training to address problems of tropical nations, including those in the Asia Pacific region. It will also attract potential students from Asia and the Pacific Islands to come to the University of Hawaii to obtain training in the management of these diseases that are relevant to their own countries.

**Discuss how the proposed program addresses workforce needs**

Tropical infectious diseases inflict substantial health and economic burdens on developing countries, including many nations in the Asia-Pacific region. Many of these infections, HIV, tuberculosis and malaria for example, can be chronic and exacerbate the problem of poverty, thus hindering economic progress. With limited resources impoverished countries have little capacity to develop or implement control programs. More than 2 decades ago a call for a more active role from United States medical schools in international medical education was sounded citing a number of reasons, not the least of which was the fact that disease knows no boundaries. As a consequence of increased migration and international tourism to the US, and to the State of Hawaii in particular, the introduction of tropical infectious diseases into areas where knowledge of these conditions is limited is increasing. An illustration of this growing need was recently published citing the need to train research scientists, clinical laboratory technicians, physicians and other health professionals to recognize parasitic infections (Palmieri et al., Amer J Trop Med Hyg 84:845-846, 2011).
**Demonstrate how the proposed program aligns with system and campus mission and strategic plan and outcomes.**

This certificate program is consistent with JABSOM's basic mission to teach and train high-quality physicians, biomedical scientists, and allied health workers for Hawai'i and the Pacific. The courses offered as part of this certificate program provide a core foundation in tropical medicine and infectious diseases offered through our current graduate degree programs and are consistent with curriculum content offered by other highly-regarded academic institutions in the US and abroad.

With respect to JABSOM's MD educational curriculum, the Tropical Medicine certificate program will offer one option to fulfill the Liaison Committee on Medical Education (LCME) requirements for research training and experience for students in the MD program. Specifically, this program will address two areas highlighted during the previous LCME accreditation review:

- **ED-12**: The curriculum of a medical education program should include laboratory or other practical opportunities for the direct application of the scientific method, accurate observation of biomedical phenomena, and critical analysis of data.
- **ED-17-A**: The curriculum of a medical education program must introduce medical students to the basic scientific and ethical principles of clinical and translational research; including the ways in which such research is conducted, evaluated, explained to patients, and applied to patient care.

The UH Tropical Medicine certificate program embodies the essence of the UHM 2011-2015 Strategic Plan "Achieving Our Destiny". The certificate program touches on each of the four Strategic Goals, specifically focusing on Goals 1 and 3; increase experimental learning opportunities across curriculum, expand and create transdisciplinary opportunities and programs, increase appreciation and understanding of cultural expression in Hawaii and the Asia-Pacific Rim.

Finally, this program addresses first lady Michelle Obama's initiative to "train the nation's physicians to meet the unique health care needs of the military and veterans communities," by providing training in infectious diseases that often afflict US troops. JABSOM is one of the 130 institutions nationwide that have committed to this important initiative. Training will be offered to medical students, medical residents and fellows, and physicians at Tripler Army Medical Center to prepare them for certification in Clinical Tropical Medicine and Travelers' Health.

**Can identified need be met by existing UH program(s)?**

The UH Tropical Medicine Certificate program would be unique in that it would be the only one of its kind offered between Texas and Thailand. We would expect it to be most relevant to medical, public health and biomedical science students but expect the
certificate program to also generate interest and participation from students at other UH units.

**Planning the new program**

**Planning period**

This proposed certificate program is directly related to the Department of Tropical Medicine, Medical Microbiology and Pharmacology’s existing programs. The courses needed to complete the requirements for the proposed certificate are currently available for all graduate and medical students to take as part of their degree program in Tropical Medicine, Medical Microbiology and Pharmacology and JABSOM. As such, we anticipate the planning period to be minimal. The planning process should be completed by early Spring 2015.

**Impact proposed program may have on accreditation**

Academic departments within JABSOM (Department of Tropical Medicine, Medical Microbiology and Pharmacology; Department of Public Health Sciences; Department of Pediatrics) who already provide instructional support for currently offered courses in the Department of Tropical Medicine will make these courses available to students enrolled in this certificate program. The program is not expected to affect accreditation of the Tropical Medicine MS and PhD programs. However, the certificate program will have a positive impact on MD program accreditation since it will address the LCME requirement to diversify educational opportunities for medical students.

**How program will fit within campus and/or system organizational structure**

The proposed certificate program will be located in and administered by the Department of Tropical Medicine, Medical Microbiology and Pharmacology at the John A. Burns School of Medicine. Students enrolled in the certificate program will be advised by one of the faculty associated with the Department of Tropical Medicine, Medical Microbiology and Pharmacology.

**Description of resources required:**

No additional resources will be required for this program as the courses needed to begin the certificate program are currently available for all graduate and medical students to take as part of their degree program in Tropical Medicine, Medical Microbiology and Pharmacology and JABSOM.
Five-Year Business Plan.

Annual costs to implement the program

No significant additional resources will be required for this program. Existing faculty have been teaching a wide range of Tropical Medicine courses. Library resources, physical resources and any other resources required for the Certificate currently exist in the John A. Burns School of Medicine. The proposed certificate program will better utilize existing resources at the John A. Burns School of Medicine.

Projected enrollment and estimated tuition revenue

We anticipate that approximately a total of 10 to 12 students will be enrolled in this graduate certificate program in Tropical Medicine each year. All participating students are expected to be in residence at the University of Hawai‘i at Mānoa during training as there are no online options for the coursework offered through this program.

How will the program be funded?

The projected revenues and costs for this program are outlined below, however, it should be noted that all of these courses are currently being offered, so that additional revenue to support their delivery are not anticipated or budgeted.

Does the current or proposed budget (Department/College/Campus) include funds or a request for funds for the proposed program? Please provide details.

No additional budget resources are requested. The Department of Tropical Medicine, Medical Microbiology & Pharmacology has 29 Graduate Faculty and 15 Adjunct Faculty involved in teaching currently offered courses.

Given a "flat budget" situation, how will the proposed program be funded?

No additional resources are requested for this program, which will be funded by allocation of existing resources. However, it is anticipated that the program will be of interest to private donors and will also position the UHM for increased partnerships that may result in increased support for the department and JABSOM.
Impact on current courses or programs.

Implementation of the proposed certificate program should have minimal impact on the existing programs within the Department of Tropical Medicine but will better utilize existing resources already in place at the John A. Burns School of Medicine.

If this program is multidisciplinary, provide evidence of commitment for support from the colleges, departments, programs, and/or individuals expected to participate.

Letters of support from Office of Public Health Studies (Dr. Alan Katz) and Graduate Chair from Tropical Medicine (Dr. Sandra Chang) attached below.
Dean, Graduate Education
Comments and Recommendations:

Krystyna S. Aune
Signature
12/22/14
Date

VCAA Review:
Comments and Recommendations:

Reed Dasenbrock
Signature
2/11/2013
Date

Mānoa Faculty Senate
Comments and Recommendations:

Print Name  Signature  Date

Chancellor's Approval:  _________ Approved  _________ Disapproved

Robert Bley-Vroman
Print Name  Signature  Date

University of Hawaii
This correspondence comes as a letter in support of the proposed Certificate in Tropical Medicine. The planned Certificate in Tropical Medicine program addresses an unmet need to train physicians. Dr. William Gosnell has been working closely with the American Society of Tropical Medicine and Hygiene (ASTMH) to ensure that the program meets all criteria to allow clinicians who successfully complete the course work to sit for the ASTMH national Diploma in Tropical Medicine (DTM) examination.

This program, which builds upon existing curriculum and resources, will be an invaluable addition to the School of Medicine and will attract physicians both nationally and internationally. Currently, there are limited opportunities in the United States for clinicians to access training clinical training in tropical medicine.

I am very excited to have been involved in the planning of this important program and I look forward to its implementation. If there are any questions about the program or my involvement please feel free to contact me either by phone: X65741 or e-mail at katz@hawaii.edu

Sincerely,

Alan R. Katz, MD, MPH
Professor and Graduate Chair
February 24, 2014

Julienne K. Maeda, Ph.D.
Acting Dean, Graduate Education
University of Hawai’i at Mānoa
Spalding 360
2340 Maile Way
Honolulu, HI 96822

Subject: Certificate in Tropical Medicine Program

Dear Dr. Maeda:

It is my pleasure to provide a letter of strong support for the planned Certificate in Tropical Medicine Program to be offered by the Department of Tropical Medicine, Medical Microbiology & Pharmacology. This program is an extension of the current graduate program based in the department with an emphasis on tropical infectious diseases and global health. The program will enable the department to reach out to health field students and professionals to diversify their training to address health issues of tropical nations, particularly those of the Asia Pacific region.

Students in this program will participate in the didactic curriculum already offered to Tropical Medicine MS and PhD students. In addition, they will be required to complete a mentored, capstone project which will be based on their individual interests and career objectives. For physicians enrolled in this program, the curriculum will provide the course content required to prepare them to challenge the national examination for certification in Clinical Tropical Medicine and Travelers’ Health.

In conclusion, I would like to offer a strong endorsement of this proposed certificate program and look forward to working closely with the planning committee to make this program a reality.

Yours truly,

Sandra P. Chang, PhD
Professor of Tropical Medicine
### Appendix B

#### PROGRAM OFFERED AT OTHER INSTITUTIONS

<table>
<thead>
<tr>
<th>TULANE UNIVERSITY</th>
<th>UNIVERSITY OF VIRGINIA HEALTH SYSTEM</th>
<th>UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES</th>
<th>JOHNS HOPKINS UNIVERSITY</th>
<th>WEST VIRGINIA UNIVERSITY</th>
<th>GORGAS MEMORIAL INSTITUTE OF TROPICAL AND PREVENTIVE MEDICINE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COURSE NAME</strong></td>
<td>Diploma Course in Clinical Tropical Medicine and Travelers’ Health</td>
<td>Certification in Tropical Medicine &amp; Traveler’s Health</td>
<td>Summer Institute in Tropical Medicine and Public Health</td>
<td>Clinical Tropical Medicine and Traveler’s Health</td>
<td>Gorgas Course in Clinical Tropical Medicine</td>
</tr>
<tr>
<td><strong>ANNUAL DATES</strong></td>
<td>Late August through mid-December</td>
<td>Part of a 3-yr J.D. fellowship that begins every July 1 3 years</td>
<td>February – May</td>
<td>Late June through late August</td>
<td>Mid-June through early August</td>
</tr>
<tr>
<td><strong>DURATION</strong></td>
<td>4 months</td>
<td>13 weeks</td>
<td>8 weeks (four 2-week modules; participants may take 1-4 modules; each module is 4 credits; 16 Credits maximum)</td>
<td>8 weeks (four 2-week modules beginning in June); participants may take 1-4 modules per year Online: New for 2012. Modules 1, 2, and 4 (2 week modules each) can be taken online. Participants will have 16 weeks/module to complete the online modules. For ASTMH certification Module 3, our Medical Parasitology &amp; Medical Entomology module, must be completed on site. For further information please contact Nancy Sanders at <a href="mailto:nsanders@hsc.wvu.edu">nsanders@hsc.wvu.edu</a>.</td>
<td>9 weeks</td>
</tr>
<tr>
<td><strong>AVAILABLE ANNUALLY?</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>TUITION</strong></td>
<td>$12,000 for fall 2012</td>
<td>Part of fellowship in infectious diseases and international health</td>
<td>$5,000; federal employees $1,500; No tuition cost for Active Duty/Guard/Reserve.</td>
<td>Academic credit: $892 per credit, for 12 credits or more the full-time tuition rate is $10,704*. Non-academic credit: $375 per credit, totaling $1,500 per module and $6,000 for all 4 modules;*</td>
<td>$5,750 physicians and dentists in private practice taking all four modules; $4,750 physicians and dentists working overseas for charitable NGOs taking all four modules and other health care professionals (nurses, PA’s, residents, fellows and physicians from developing countries) taking all four modules. $3600 Residency/ fellowship programs sending 2 or more. $2000 non-WVU students. A 7% discount is offered for early registration.</td>
</tr>
<tr>
<td><strong>APPROXIMATE LIVING EXPENSES PER MONTH</strong></td>
<td>$1,500 for room and board</td>
<td>Federal per diem (daily) rates in Bethesda, MD - $209 lodging, $61 meals, $3 incidentals. Lower rates generally available.</td>
<td>Housing expenses ranging from $600-$1,000 per month.</td>
<td>Housing expense ranging from $425-$750/mo</td>
<td>$700</td>
</tr>
<tr>
<td><strong>ADDITIONAL ACADEMIC DEGREES</strong></td>
<td>Master of Pub Hlth/Trop Med (MPH&amp;TM)</td>
<td>Possible masters degree in epidemiology</td>
<td>Certificate of Completion Graduate credit hours</td>
<td>CME credits Certificate of Completion</td>
<td>Diploma CME credit</td>
</tr>
</tbody>
</table>
COURSE DESCRIPTION

TULANE UNIVERSITY

This course builds on our tradition of training programs in tropical medicine. The program trains students in all major aspects of clinical tropical medicine. Students have opportunities to interact with faculty active in clinical/laboratory/field research. In addition to courses that focus on clinical management and control of diseases prevalent in the tropics, the program includes classes and lab experiences in basic parasitology and microbiology, with emphasis on practical applications for diagnostic purposes.

UNIVERSITY OF VIRGINIA HEALTH SYSTEM

With an outstanding faculty active in clinical and laboratory research on tropical infectious diseases, our program offers special training in clinical tropical medicine that is specifically designed to be incorporated as a part of our three-year infectious diseases fellowship training program.

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES

Comprehensive coverage of the principles and practices of clinical tropical medicine and travelers' health, presented by a staff with decades of hands-on experience in medicine in the tropics. All of the individual courses that make up the USUHS ASTMH Diploma Course are graduate-level courses offered at the university.

JOHNS HOPKINS UNIVERSITY

This 8-week Summer Institute introduces participants to the main topics in tropical medicine and public health using a multi-disciplinary approach. Topical experts will teach participants about current and emerging health problems in developing countries and in travel medicine. At the end of this program, students will have an overview of prevention, diagnosis, treatment and control of the major tropical health problems. The curriculum consists of 4 course modules totaling 16 credit-hours with lecture and laboratory components, focusing on the following areas of tropical medicine: TB, HIV and other chronic infections; vector-borne diseases; intestinal infections; and newborn and child health.

WEST VIRGINIA UNIVERSITY

Graduate credit hours

This eight-week summer course is designed to provide training in tropical medicine and related public health issues through a multidisciplinary approach to disease. Traveler's health is covered in detail as well. Lectures, laboratory components and detailed case studies will examine specific tropical diseases and stress diagnosis, treatment and implementation of preventive and control measures. All elements of ASTMH curriculum are covered, as well as practical aspects of providing quality health care in resource-limited settings.

GORGAS MEMORIAL INSTITUTE OF TROPICAL AND PREVENTIVE MEDICINE

Graduate credit hours

Given in Lima, Peru, this unique tropical medicine training initiative combines an international faculty with didactic and formal bedside teaching right in the tropics. Intensive diploma course in English with 380 contact hours: 160 formal lecture hours, plus diagnostic laboratory, daily ward rounds on a 36-bed tropical disease unit or daily outpatient clinic, and case conferences. Two 4-day teaching trips to field clinics in the Andes and Amazon. Scholarships are available to those who are both nationals and residents of a developing world country.
### Appendix B

#### PROGRAM OFFERED AT OTHER INSTITUTIONS

<table>
<thead>
<tr>
<th>COURSE NAME</th>
<th>LIVERPOOL SCHOOL OF TROPICAL MEDICINE</th>
<th>LONDON SCHOOL OF HYGIENE &amp; TROPICAL MEDICINE</th>
<th>BERNHARD NOCHT INSTITUTE</th>
<th>HUMBOLDT UNIVERSITY</th>
<th>MAHIDOL UNIVERSITY</th>
<th>BAYLOR COLLEGE OF MEDICINE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diploma of Tropical Medicine and Hygiene</td>
<td>Diploma in Tropical Medicine and Parasitology</td>
<td>Course in Tropical Medicine and Public Health (DTMPH) Core Course in the Masters Program on International Health</td>
<td>Diploma in Tropical Medicine and Hygiene (DTM&amp;H)</td>
<td>Graduate Diploma in Tropical Medicine and Hygiene (DTM&amp;H)</td>
<td>National School of Tropical Medicine at Baylor College of Medicine</td>
</tr>
<tr>
<td>ANNUAL DATES</td>
<td>February and September</td>
<td>January</td>
<td>Beginning of April until end of June</td>
<td>September to December</td>
<td>First week of April through end of September</td>
<td>January-February and June-July</td>
</tr>
<tr>
<td>DURATION</td>
<td>13 weeks</td>
<td>3 months</td>
<td>13 weeks</td>
<td>6 months</td>
<td>8 weeks (four modules - 2 weeks/module)</td>
<td>8 weeks (four modules - 2 weeks/module)</td>
</tr>
<tr>
<td>AVAILABLE ANNUALLY?</td>
<td>Yes; two times per year</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>TUITION</td>
<td>GBP £4,500</td>
<td>EURO 3580</td>
<td>DEM 3,900</td>
<td>US $2,500</td>
<td>USD; pounds examination fee international $8,255</td>
<td>domestic $7,755 USD; international $8,255 USD (both include tuition and fees)</td>
</tr>
<tr>
<td>APPROXIMATE LIVING EXPENSES PER MONTH</td>
<td>GBP 700</td>
<td>EURO 1000</td>
<td>DEM 1,500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADDITIONAL ACADEMIC DEGREES OFFERED</td>
<td>MSc Tropical Infectious Diseases, MSc Tropical Pediatrics, MSc Molecular Biology of Parasites &amp; Disease Vectors, MSc Molecular Biology of Parasites &amp; Disease Vectors, PhD</td>
<td>MSc, MPhil, PhD, DrPH</td>
<td>Diploma</td>
<td>Diploma</td>
<td></td>
<td>Certificate of Completion</td>
</tr>
<tr>
<td>COURSE DESCRIPTION</td>
<td>This well-established course gives a good grounding in tropical medicine and public health for the tropics. Practical teaching of diagnostic parasitology and vector biology is strong and all teaching is by faculty with extensive tropical experience. Students come from a wide variety of international backgrounds and their expertise is shared in a friendly atmosphere. A major travel health clinic is situated in the school.</td>
<td>The course provides physicians without tropical experience with the training necessary to practice medicine in developing countries. It serves as a refresher course for those who have worked in the tropics. It offers an overview of diseases and travel medicine for infectious disease physicians in developed countries. The course aims to teach doctors the practical skills required to diagnose, treat and prevent diseases that are especially prevalent in tropical and developing countries where</td>
<td>The course starts out with introductions reaching from the technique of microscopy to fundamental immunology and to basic epidemiology. In the following weeks systemic febrile infections are dealt with which are ordered according to relevance, clinical similarities and taxonomy aspects. Intestinal infections and skin diseases, in between helminth infections that often share the hallmark of eosinophilia and primarily affect the in-testine or the skin, follow them. Then tropical peculiarities of the</td>
<td>The course provides participants with knowledge and skills for their work in the health sector in developing Countries or in International Organisations. It integrates a number of public-health-related disciplines including district health management, health economics, epidemiology, needs assessment, programme planning, human resources management, monitoring and evaluation, project proposal writing. Special topics are offered in disease control, parasitology.</td>
<td>The course consists of 28 credits: 22 credits for core subjects and 6 credits for elective subjects. The objectives of this 6-month course are: 1) to provide participating medical doctors with a better understanding of tropical diseases and community health problems in Southeast Asia and to improve their ability to manage them and 2) to promote a better understanding of the cultures and ways of life of peoples in Southeast Asia, leading to closer cooperation in dealing with</td>
<td>Baylor College of Medicine (BCM) has a long history of providing tropical medicine education to healthcare providers. BCM currently offers two ASTMH-Approved Pre requisite Courses for the diploma course pathway, the Baylor International Pediatrics AIDS Initiative (BIPAI) Pediatrics AIDS Corps Pre-Service Training in Tropical Medicine and that offered by the BCM National School of Tropical Medicine (NSTM) which was formerly offered through the International Health Track. BCM</td>
</tr>
</tbody>
</table>

| DURATION | 13 weeks | 3 months | 13 weeks | 6 months | 8 weeks (four modules - 2 weeks/module) | 8 weeks (four modules - 2 weeks/module) |
| APPROXIMATE LIVING EXPENSES PER MONTH | GBP 700 | EURO 1000 | DEM 1,500 | | | |
| ADDITIONAL ACADEMIC DEGREES OFFERED | MSc Tropical Infectious Diseases, MSc Tropical Pediatrics, MSc Molecular Biology of Parasites & Disease Vectors, MSc Molecular Biology of Parasites & Disease Vectors, PhD | MSc, MPhil, PhD, DrPH | Diploma | Diploma | | Certificate of Completion |
| COURSE DESCRIPTION | This well-established course gives a good grounding in tropical medicine and public health for the tropics. Practical teaching of diagnostic parasitology and vector biology is strong and all teaching is by faculty with extensive tropical experience. Students come from a wide variety of international backgrounds and their expertise is shared in a friendly atmosphere. A major travel health clinic is situated in the school. | The course provides physicians without tropical experience with the training necessary to practice medicine in developing countries. It serves as a refresher course for those who have worked in the tropics. It offers an overview of diseases and travel medicine for infectious disease physicians in developed countries. The course aims to teach doctors the practical skills required to diagnose, treat and prevent diseases that are especially prevalent in tropical and developing countries where | The course starts out with introductions reaching from the technique of microscopy to fundamental immunology and to basic epidemiology. In the following weeks systemic febrile infections are dealt with which are ordered according to relevance, clinical similarities and taxonomy aspects. Intestinal infections and skin diseases, in between helminth infections that often share the hallmark of eosinophilia and primarily affect the in-testine or the skin, follow them. Then tropical peculiarities of the | The course provides participants with knowledge and skills for their work in the health sector in developing Countries or in International Organisations. It integrates a number of public-health-related disciplines including district health management, health economics, epidemiology, needs assessment, programme planning, human resources management, monitoring and evaluation, project proposal writing. Special topics are offered in disease control, parasitology. | The course consists of 28 credits: 22 credits for core subjects and 6 credits for elective subjects. The objectives of this 6-month course are: 1) to provide participating medical doctors with a better understanding of tropical diseases and community health problems in Southeast Asia and to improve their ability to manage them and 2) to promote a better understanding of the cultures and ways of life of peoples in Southeast Asia, leading to closer cooperation in dealing with | Baylor College of Medicine (BCM) has a long history of providing tropical medicine education to healthcare providers. BCM currently offers two ASTMH-Approved Pre requisite Courses for the diploma course pathway, the Baylor International Pediatrics AIDS Initiative (BIPAI) Pediatrics AIDS Corps Pre-Service Training in Tropical Medicine and that offered by the BCM National School of Tropical Medicine (NSTM) which was formerly offered through the International Health Track. BCM |
Appendix B

PROGRAM OFFERED AT OTHER INSTITUTIONS

LIVERPOOL SCHOOL OF TROPICAL MEDICINE

LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE

resources may be strictly limited. The course has a strong epidemiological base. The scientific basis of infectious diseases is also given high priority, because the application of modern medical science and state-of-the-art technology to medical problems in the tropics is leading to advances in their management and prevention.

BERNARD NOCHT INSTITUTE

established medical disciplines are presented such as those in neurology, surgery and gynecology, in addition then specific problems in epidemiology, public health and developmental cooperation are being discussed. Travel medicine including lessons on high altitude medicine, diving medicine etc. are made further topics of the course. The last weeks contain summaries of clinical entities and exercises.

HUMBOLDT UNIVERSITY

microbiology, virology, haematology, dermatology, psychiatry, mother and child health, paediatrics, family planning, gynecology, essential drugs, refugee health, surgery, dentistry, neurology. Differential diagnosis, laboratory practice.

MAHIDOL UNIVERSITY

regional health problems.

BAYLOR COLLEGE OF MEDICINE

recognizes the growing need for advanced training in tropical medicine and takes advantage of the expertise provided by the NSTM opening the Diploma in Tropical Medicine (DTM) course to an expanded audience of medical students, residents, postdoctoral fellows, and physicians. It also serves to provide an educational tool for physicians already practicing in developing countries who require an update on infectious, parasitic and other health problems and for doctors in developed countries who need to diagnose and manage imported infections. The DTM is offered in a modular format comprising of four intensive modules, with each module being two weeks long. These modules can be taken all at once or piecemeal to accommodate a wide range of students, professionals and academics who may not be able to take eight consecutive weeks away from their studies or practices. Travelers' Health is an essential part of the DTM course. In order to get the most experience in taking care of travelers' needs, participants get 10 hours of didactic course on pre-travel diagnosis as well as post-travel.
### Appendix B

**PROGRAM OFFERED AT OTHER INSTITUTIONS**

<table>
<thead>
<tr>
<th>COURSE NAME</th>
<th>UNIVERSITY OF MINNESOTA/CENTER FOR DISEASE CONTROL &amp; PREVENTION</th>
<th>UNIVERSITY OF TEXAS MEDICAL BRANCH AT GALVESTON</th>
<th>PRINCE LEOPOLD INSTITUTE OF TROPICAL MEDICINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baylor International Pediatric AIDS Initiative, Pediatric AIDS Corps Pre-Service Training in Tropical Medicine</td>
<td>Diploma Course in Tropical Medicine and International Health</td>
<td>Clinical Tropical, Migrant and Travel Medicine</td>
<td>Postgraduate Certificate in Tropical Medicine and International Health</td>
</tr>
<tr>
<td>Mid-July through Mid-August</td>
<td>2013 UMN/CDC In-Person Global Health Course: May 6, 2013 through June 2, 2013</td>
<td>Introductory course taught between years 1 and 2 of medical school, intensive lecture course and labs taught each February; study abroad incorporated into all years of medical school</td>
<td>Second week of September until last week of February</td>
</tr>
<tr>
<td>4 didactic weeks plus 1 clinical year (minimum) working in Africa. Formal training will continue in Africa with precepted workshops and hands-on laboratory experience.</td>
<td>2013 UMN/CDC In-Person Global Health Course Information: The 2013 In-Person Global Health Course will consist of four week-long modules and a Humanitarian Crisis Simulation Exercise. The goal of the 2013 Course will be to present the most current and relevant tropical and travel medicine information, provide course participants with “hands-on” training experiences as required by the ASTMH examination (NOTE: ONLY WEEK 3 and WEEK 4 offer “HANDS-ON” TRAINING), and offer preparatory guidance for the ASTMH examination. The 2013 In-Person Global Health Course will include case presentations, classroom discussions, simulation scenarios, laboratory sessions, ultrasound technique instruction, and a two day Humanitarian</td>
<td>4 weeks didactic and labs, plus one study abroad between years 1 and 2, and three study abroad electives in years 3 and 4; travel clinic and attendance at scientific meeting</td>
<td>5 ½ months – the course consists of two complementary but independent modules: Module 1, introduction in international health runs from the second week of September until Christmas break; Module 2, clinical and biomedical sciences of tropical diseases, starts the first week of January and ends the last week of February</td>
</tr>
<tr>
<td>3 years</td>
<td>3 years</td>
<td>5 ½ months – the course consists of two complementary but independent modules: Module 1, introduction in international health runs from the second week of September until Christmas break; Module 2, clinical and biomedical sciences of tropical diseases, starts the first week of January and ends the last week of February</td>
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</tbody>
</table>
Appendix B
PROGRAM OFFERED AT OTHER INSTITUTIONS

<table>
<thead>
<tr>
<th>Institution</th>
<th>AVAILABLE ANNUALLY?</th>
<th>PROGRAM OFFERED AT OTHER INSTITUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAYLOR INTERNATIONAL PEDIATRIC AIDS INITIATIVE</td>
<td>Yes</td>
<td>Program: Crisis Simulation, Exercise</td>
</tr>
<tr>
<td>CASE WESTERN RESERVE UNIVERSITY</td>
<td>Yes</td>
<td>Online Global Health Course: The Online Global Health Course consists of SEVEN individual modules that can be taken independently, at any time, and in any order. NOTE: Course participants are encouraged to complete all seven Online Global Health Course modules IN ADVANCE of the In-Person Global Health Course. Complete Global Health Course Curriculum: a) 2013 Four-Week In-Person Global Health Course (“Hands-On” Training Modules). b) Seven Online Global Health Course (Independent Online Education Modules). c) UMN ASTMH CTropMod® Online Exam Review. NOTE: To meet ASTMH examination requirements, WEEK 3 and WEEK 4 of the In-Person Global Health Course modules PLUS all SEVEN Online Global Health Course modules must be completed. NOTE: All Global Health Course modules are considered stand-alone modules.</td>
</tr>
<tr>
<td>UNIVERSITY OF MINNESOTA/CENCENTRS FOR DISEASE CONTROL &amp; PREVENTION</td>
<td>Yes</td>
<td>Program: The Online Global Health Course consists of SEVEN individual modules that can be taken independently, at any time, and in any order. NOTE: Course participants are encouraged to complete all seven Online Global Health Course modules IN ADVANCE of the In-Person Global Health Course. Complete Global Health Course Curriculum: a) 2013 Four-Week In-Person Global Health Course (“Hands-On” Training Modules). b) Seven Online Global Health Course (Independent Online Education Modules). c) UMN ASTMH CTropMod® Online Exam Review. NOTE: To meet ASTMH examination requirements, WEEK 3 and WEEK 4 of the In-Person Global Health Course modules PLUS all SEVEN Online Global Health Course modules must be completed. NOTE: All Global Health Course modules are considered stand-alone modules.</td>
</tr>
<tr>
<td>UNIVERSITY OF TEXAS MEDICAL BRANCH AT GALVESTON</td>
<td>Yes</td>
<td>Program: Yes, the course is offered annually in English and French in parallel.</td>
</tr>
<tr>
<td>PRINCE LEOPOLD INSTITUTE OF TROPICAL MEDICINE</td>
<td>Yes</td>
<td>Program: Yes, the In-Person Global Health Course is offered annually in May. The</td>
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</table>
## Appendix B
### PROGRAM OFFERED AT OTHER INSTITUTIONS

<table>
<thead>
<tr>
<th>Institution</th>
<th>Tuition</th>
<th>Fee Structure</th>
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<tbody>
<tr>
<td>BAYLOR INTERNATIONAL PEDIATRIC AIDS INITIATIVE</td>
<td>No tuition; course is intended exclusively for Pediatric AIDS Corps physicians.</td>
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</tr>
<tr>
<td>CASE WESTERN RESERVE UNIVERSITY</td>
<td>Part of infectious diseases fellowship</td>
<td></td>
</tr>
<tr>
<td>UNIVERSITY OF MINNESOTA/CENTERS FOR DISEASE CONTROL &amp; PREVENTION</td>
<td>2013 In-Person Course Fee Structure:</td>
<td></td>
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<tr>
<td></td>
<td>• Practicing MDs, PAs, NPs, RNs, and LPNs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$795 for one week or $1,490 for two or more weeks plus an additional $100 per module if CME credit is desired.</td>
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<tr>
<td></td>
<td>• Retired physicians, health care providers from developing countries, and non-UMN resident physicians, medical students, fellow, nursing students as well as UMN resident physicians and fellows outside of the Global Health Pathway.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$398 for one week or $750 for two or more weeks plus an additional $100 per module if CME credit is desired.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Active United States Military Personnel.</td>
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<tr>
<td></td>
<td>$398 for one week or $750 for two or more weeks plus an additional $100 per module if CME credit is desired.</td>
<td></td>
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<tr>
<td></td>
<td>Online Course Module Fee Structure:</td>
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<tr>
<td></td>
<td>• Practicing MDs, PAs, NPs, RNs, and LPNs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$745 per module for modules 1, 2, 3, 4, 5, 6 plus $100 per module if CME credit is desired.</td>
<td></td>
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<tr>
<td></td>
<td>$795 for module 7 plus $100 per module if CME credit is desired. Rates are effective until 2/1/2013.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Retired physicians, active United States</td>
<td></td>
</tr>
<tr>
<td>UNIVERSITY OF TEXAS MEDICAL BRANCH AT GALVESTON</td>
<td>No separate course tuition, but only available to medical students, residents, and fellows at UTMB; study abroad is student funded</td>
<td></td>
</tr>
<tr>
<td>PRINCE LEOPOLD INSTITUTE OF TROPICAL MEDICINE</td>
<td>2600 Euro</td>
<td></td>
</tr>
</tbody>
</table>

**Case Western Reserve University**

Part of infectious diseases fellowship

**University of Minnesota/Centers for Disease Control & Prevention**

2013 In-Person Course Fee Structure:

- Practicing MDs, PAs, NPs, RNs, and LPNs.
- $795 for one week or $1,490 for two or more weeks plus an additional $100 per module if CME credit is desired.
- Retired physicians, health care providers from developing countries, and non-UMN resident physicians, medical students, fellow, nursing students as well as UMN resident physicians and fellows outside of the Global Health Pathway.
- $398 for one week or $750 for two or more weeks plus an additional $100 per module if CME credit is desired.
- Active United States Military Personnel.
- $398 for one week or $750 for two or more weeks plus an additional $100 per module if CME credit is desired.
- Online Course Module Fee Structure:
  - Practicing MDs, PAs, NPs, RNs, and LPNs.
  - $745 per module for modules 1, 2, 3, 4, 5, 6 plus $100 per module if CME credit is desired.
  - $795 for module 7 plus $100 per module if CME credit is desired. Rates are effective until 2/1/2013.
- Retired physicians, active United States

**University of Texas Medical Branch at Galveston**

No separate course tuition, but only available to medical students, residents, and fellows at UTMB; study abroad is student funded

**Prince Leopold Institute of Tropical Medicine**

2600 Euro
APPRAIiEAT LIVING EXPENSES PER MONTH

BAYLOR INTERNATIONAL PEDIATRIC AIDS INITIATIVE
Living expenses paid for Pediatric AIDS Corps physicians

CASE WESTERN RESERVE UNIVERSITY
Housing: Local hotel accommodations are available.

UNIVERSITY OF MINNESOTA/CENTERS FOR DISEASE CONTROL & PREVENTION
No cost for Intensive Tropical and Medicine Elective. Travel cost based upon overseas location

ADDITIONAL ACADEMIC DEGREES OFFERED
None through BIPAI; several others offered through Baylor College of Medicine

MASTERS OF PUBLIC HEALTH; MASTERS OF EPIDEMIOLOGY
Both the In-Person Global Health Course and the Online Global Health Course offer a Certificate of Completion, CME Credit Certificate, and ANCC Credit.

UNIVERSITY OF TEXAS MEDICAL BRANCH AT GALVESTON
MPH available through the preventive medicine program

800-900 Euro/month

PRINCE LEOPOLD INSTITUTE OF TROPICAL MEDICINE
Master in Public Health
1) with orientation Health Systems management and policy
2) with orientation Disease Control
Master in International Health (Module I = accredited core course of tropEd MIH)
PhD programme available
Module 1 provides health professionals with a broad and interdisciplinary training, combining clinical and biomedical knowledge and skills with a systemic approach to health care organization and disease control in low-resource settings. The broad perspective of international health policy and specific inputs from social sciences help.

APPENDIX B
PROGRAM OFFERED AT OTHER INSTITUTIONS

CASE WESTERN RESERVE UNIVERSITY
No applicable

FUNCTIONS OF THE PROGRAMS

UNIVERSITY OF MINNESOTA/CENTERS FOR DISEASE CONTROL & PREVENTION
Military personnel, health care providers from developing countries, and non-UMN resident physicians, medical students, fellow, nursing students as well as UMN resident physicians and fellows outside of the Global Health Pathway.

BAYLOR INTERNATIONAL PEDIATRIC AIDS INITIATIVE
This course gives a thorough overview of the fields of tropical medicine and infectious diseases over the three years of infectious diseases fellowship training. It draws upon the extensive medical expertise at Case Western Reserve University School of Medicine and several affiliated institutions. Participants are educated to cover all core topics required for the ASTMH Knowledge examination and includes a hands-on component (wet labs and simulated exercises). In addition to addressing tropical diseases and public health concerns, global health issues are addressed.

Additional Academic Degrees Offered
Included in the complete Global Health Course curriculum has been designed to cover all core topics required for the ASTMH Certificate of Knowledge examination and includes a hands-on component (wet labs and simulated exercises). In addition to addressing tropical diseases and public health concerns, global health issues are addressed.

Appendix B
PROGRAM OFFERED AT OTHER INSTITUTIONS

CASE WESTERN RESERVE UNIVERSITY
Masters of Public Health; Masters of Epidemiology

This course gives a thorough overview of the fields of tropical medicine and infectious diseases over the three years of infectious diseases fellowship training. It draws upon the extensive medical expertise at Case Western Reserve University School of Medicine and several affiliated institutions. Participants are educated to cover all core topics required for the ASTMH Knowledge examination and includes a hands-on component (wet labs and simulated exercises). In addition to addressing tropical diseases and public health concerns, global health issues are addressed.

FUNCTIONS OF THE PROGRAMS

UNIVERSITY OF TEXAS MEDICAL BRANCH AT GALVESTON
No cost for Intensive Tropical and Medicine Elective. Travel cost based upon overseas location

MPH available through the preventive medicine program

800-900 Euro/month

PRINCE LEOPOLD INSTITUTE OF TROPICAL MEDICINE
Master in Public Health
1) with orientation Health Systems management and policy
2) with orientation Disease Control
Master in International Health (Module I = accredited core course of tropEd MIH)
PhD programme available
Module 1 provides health professionals with a broad and interdisciplinary training, combining clinical and biomedical knowledge and skills with a systemic approach to health care organization and disease control in low-resource settings. The broad perspective of international health policy and specific inputs from social sciences help.

8/9
### Appendix B

**Program Offered at Other Institutions**

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<tr>
<th>Baylor International Pediatric AIDS Initiative</th>
<th>Case Western Reserve University</th>
<th>University of Minnesota/Centers for Disease Control and Prevention</th>
<th>Prince Leopold Institute of Tropical Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>will be comprised of highly-trained and experienced developing country partners. Our intensive course will put a particularly heavy emphasis on the management of HIV/AIDS in resource-limited settings. This course will be followed by ongoing, in-country training and field experience, including low-resource laboratory experience and regular precepted workshops offered by Baylor College of Medicine faculty. In addition, all Pediatric AIDS Corps participants will be networked electronically with one another and with Houston-based faculty for purposes of consultation on difficult cases and ongoing mentoring.</td>
<td>through didactic lectures, seminars, clinical rotations, and laboratory exercises. There are also opportunities for travel to tropical locations for both clinical and research experience.</td>
<td>systematically (cardiology, GI, oncology, etc.). Refugee and migrant health, cross-cultural health care, and travel medicine are among the unique strengths of this course. Global Health Course content emphasizes case-based lectures and practical knowledge for practicing clinicians and public health professionals. Our teaching faculty consists of staff from the Centers for Disease Control and Prevention, University of Minnesota faculty, guest faculty from our affiliate international sites, and internationally known NGOs in Minnesota.</td>
<td>students grasp the complex picture of health and health care in low-resource settings. Integration of these different disciplines through group assignments is a key feature of the program. In Module 2, the individual patient suffering from a tropical disease is at the centre. The overall objective is to improve clinical effectiveness and efficiency. The curriculum includes lectures, case discussions and practical laboratory classes. A computer-based expert system for clinical practice in tropical and subtropical countries called KABISA, offers students ample opportunities to exercise their clinical decision-making skills.</td>
</tr>
</tbody>
</table>
April 24, 2015

To: Reviewers of the Proposed “Graduate Certificate in Tropical Medicine”

From: Kristen L. Anderson, Director
JABSOM Health Sciences Library

I am writing to confirm that library resources and services necessary to support the implementation and ongoing requirements of the proposed “Graduate Certificate in Tropical Medicine” are currently in place. No additional expenditure in this regard is needed. The Library endorses this proposal.