



UNIVERSITY
of HAWAII®
MĀNOA

Department of Tropical Medicine,
Medical Microbiology and Pharmacology
John A. Burns School of Medicine

MEMORANDUM

DATE: October 13, 2020

TO: David Lassner, Ph.D.
President, University of Hawai'i System

VIA: Michael Bruno, Ph.D. *Michael Bruno*
Provost, University of Hawai'i at Mānoa

VIA: Laura E. Lyons, Ph.D. *Laura E. Lyons*
Interim Associate Vice Chancellor for Academic Affairs

FROM: Jerris R. Hedges, M.D., M.S., M.M.M. *JRHedges* Oct 15, 2020
Dean, John A. Burns School of Medicine

William "Bill" G. Chismar *WGC* Oct 15, 2020
Interim Dean, Myron B Thompson School of Social Work
Interim Dean, Outreach College

Nicholas Comerford, M.S., Ph.D. *NB Comerford* Oct 16, 2020
Dean, College of Tropical Agriculture and Human Resources

Brian Taylor, M.A., M.Phil., Ph.D. *Brian Taylor* Oct 15, 2020
Dean, School of Ocean and Earth Science and Technology

Amy Schiffner, M.F.A. *Amy Schiffner* Oct 15, 2020
Director, Interdisciplinary Studies Program

Ronald E. Cambra *Ronald E. Cambra* Oct 17, 2020
Assistant Vice Chancellor for Undergraduate Education

SUBJECT: APPROVAL OF AUTHORIZATION TO PLAN (ATP) AN UNDERGRADUATE
CERTIFICATE IN ONE HEALTH

SPECIFIC ACTION REQUESTED:

It is respectfully requested that the Authorization to Plan (ATP) for an undergraduate certificate in ONE HEALTH be approved.

RECOMMENDED EFFECTIVE DATE: Fall 2021

ADDITIONAL COST: None

PURPOSE:

The One Health Interdisciplinary Undergraduate Certificate Program is intended to prepare students with the skills and knowledge to work collaboratively across disciplines to solve real-world problems using the One Health approach that promotes the integration of human health, animal/plant health, and environmental health. The program is founded on *Mauli Ola*, the Hawaiian concept of physical, spiritual and mental health and of social and cultural wellbeing, that transcends the mere absence of disease or disability, and is deeply rooted in the indigenous belief that the health of the individual and the health of the community are inextricably linked to the health of the environment. Importantly, this program is in perfect alignment with UHealthy Hawai'i and is supported by a multi-unit team of core faculty from the John A. Burns School of Medicine (JABSOM), the Office of Public Health Studies (OPHS) in the Myron B. Thompson School of Social Work (MBTSSW), the Pacific Biosciences Research Center (PBRC) in the School of Ocean and Earth Science and Technology (SOEST), and the College of Tropical Agriculture and Human Resources (CTAHR), with the full support of their Deans and Directors. This certificate program will incorporate Top Faculty and Researchers at the University of Hawai'i at Mānoa (UHM) into the Undergraduate Experience. As stipulated in the UHM undergraduate certificate program guidelines, a minimum of 15 credits will be required. A 3-credit One Health Introductory Course on the intersection between human health, animal/plant health and environmental health, and a 2-credit One Health Seminar Course to engage undergraduates with world-class UHM researchers will serve as core courses, while the remaining credits will be from existing courses along with new courses designed to address specific aspects of One Health. Several tracks are envisioned that will align with the student's research topic, such as medical, animal, social and environmental science tracks. The program will be based in the UH Manoa Interdisciplinary Studies Program. By fulfilling their capstone requirement under the supervision of UHM's Top Research Faculty, students will actively participate in the intellectual adventure of generating new knowledge in real time.

BACKGROUND:

Although One Health programs have proliferated in many schools of human and veterinary medicine in the United States, few institutions have developed certificate programs in One Health that are targeted specifically to undergraduate students. As conceived, the proposed One Health Interdisciplinary Undergraduate Certificate Program will harness and translate the exceptional talent of faculty from multiple units to develop a non-unit-restricted structure and truly interdisciplinary curriculum that fulfills the core competencies in One Health education. To be clear, the One Health Interdisciplinary Undergraduate Certificate Program will complement, rather than duplicate or compete with existing programs in the following ways:

- leveraging strengths in multiple departments and disciplines across the UHM, as well as investments in interdisciplinary programs (such as C-MĀIKI);
- applying indigenous knowledge that exemplifies our unique geographic location and cultural heritage; and
- being responsive to current and anticipated workforce needs in health care, public health, environmental health and conservation biology, biomesecience, and education for the state, region and beyond.

The One Health Interdisciplinary Undergraduate Certificate Program initiative was selected as a winner of the UHM Provost's 2019-20 Strategic Investment Competition for High-Impact Practices in Undergraduate Education.

ACTION RECOMMENDED:

It is recommended that the Authorization to Plan (ATP) for an undergraduate certificate in ONE HEALTH be approved.

**Authorization to Plan A New Academic Program:
One Health Interdisciplinary Undergraduate Certificate Program**

Campus, school/college and department/division proposing the new program

- John A Burns School of Medicine, UH Manoa
 - Department of Tropical Medicine, Medical Microbiology & Pharmacology
- Myron B. Thompson School of Social Work, UH Manoa
 - Office of Public Health Studies
- College of Tropical Agriculture and Human Resources, UH Manoa
 - Department of Human Nutrition, Food and Animal Sciences
 - Department of Plant and Environmental Protection Services
- School of Ocean and Earth Science and Technology, UH Manoa
 - Pacific Biosciences Research Center

Program proposed: One Health Interdisciplinary Undergraduate Certificate Program

Program objectives

Preparing students with the skills and knowledge to work collaboratively across disciplines to solve real-world problems is one of the imperatives of institutions of higher education. With the launching of UHealthy Hawai‘i and the Center for Microbiome Analysis through Island Knowledge & Investigation (C-MĀIKI), the University of Hawai‘i has made significant commitments to the interconnectivity of the health of the individual, the community and the environment. Thus, a multi-unit team of faculty from the John A. Burns School of Medicine, the Myron B. Thompson School of Social Work, the School of Ocean and Earth Science and Technology and the College of Tropical Agriculture and Human Resources proposes to translate current investments into educational capital by collaboratively developing a One Health Interdisciplinary Undergraduate Certificate Program at the University of Hawai‘i at Mānoa (UHM) to better integrate UHM’s Top Faculty and Researchers into the Undergraduate Experience. This UHM undergraduate certificate program will require a minimum of 15 credits. Core courses will include a 3-credit One Health Introductory Course on the intersection between human health, animal/plant health and environmental health, a 2-credit One Health Seminar Course to engage undergraduates with world-class UHM researchers, and a capstone experience. The remaining credits will be from existing and new One Health-related courses offered by participating departments. By fulfilling their capstone requirement under the supervision of UHM’s top faculty, students will actively participate in the intellectual adventure of generating new knowledge. The proposed program will provide a multidimensional, holistic perspective of health and strategically integrate UHM’s top faculty and researchers into the undergraduate educational experience.

Alignment with the Campus and UH system mission, strategic plan and the Integrated Academic and Facilities Plan

UH Mission. As stated in UH Board of Regents Policy 4.201, the primary mission of the university is “to provide environments in which faculty, staff and students can discover, examine critically, preserve and transmit the knowledge, wisdom, and values that will help ensure the survival of present and future generations with improvement in the quality of

life.” Further, this policy states that “the university shall be a global leader and model for the integration of sustainability throughout its teaching, research, operations, and public service.” The One Health Interdisciplinary Undergraduate Certificate Program is fully aligned with these principles as it will strive to instill in students an understanding and appreciation of the interdependence of the health of people, animals and their shared environment in order to prepare them to become better stewards of the resources of the islands and the world.

Strategic Priorities. The One Health concept is in perfect alignment with UH strategic priorities. Importantly, it is concordant with UHealthy Hawai‘i, a bold initiative that seeks to leverage the vast talent and resources in the health sciences and related disciplines across the UH System to improve health and healthcare in Hawai‘i and the Pacific, by focusing on four principal areas: (1) Ensuring a robust statewide health workforce; (2) Discovering and innovating to improve and extend lives; (3) Promoting healthier families and communities; and (4) Advancing health in all policies (<https://www.hawaii.edu/news/2019/08/20/uhealthy-hawaii/>).

World-Class Research Infrastructure. The necessary research infrastructure exists to support the proposed program. In addition to UHealthy Hawai‘i, substantial institutional commitments have been made to the Pacific Center for Emerging Infectious Diseases Research (<http://pceidr.jabsom.hawaii.edu/>), a National Institutes of Health-funded center of translational science excellence aimed at the development and deployment of rapid diagnostics, effective treatments and affordable vaccines for new, emerging and re-emerging infectious diseases in the Asia-Pacific region. Another NIH-funded center of excellence, the Integrative Center for Environmental Microbiomes and Human Health, is engaged in complementary studies of ecological gradients on human health, from the mountain to the ocean (*mauka* to *makai*), and in urban and rural settings. Also, in the realm of the environmental microbiome, UHM has invested heavily in the establishment of the C-MĀIKI, a transdisciplinary partnership between PBRC/SOEST, JABSOM, CTAHR, CNS, and CoE, with activities aimed at gaining new knowledge about the environmental microbiome to better understand the dynamics of our planet’s microbial foundation (<https://www.c-maiki.org/>).

Innovative Teaching Infrastructure. Each of the units also has the teaching infrastructure to collaboratively develop the certificate program. For example, OPHS/MBTSSW boasts existing scholarship in innovative undergraduate pedagogy, a thriving undergraduate program, a Native Hawaiian and Indigenous Health specialization designed to provide students with skills and training to serve Indigenous People and assist in addressing their health and wellness needs and with links to the community, and active environmental health laboratories, training, and research. Complementary research training for undergraduate students is available in the JABSOM Department of Tropical Medicine, Medical Microbiology and Pharmacology and Department of Native Hawaiian Health. And C-MĀIKI provides ample hands-on experiential learning opportunities.

Justification of need

Workforce Needs. There are relevant workforce needs to support and sustain this effort. Specifically, the Hawai'i Department of Health has identified Environmental Health as a priority in over 40 unfilled positions, many of which could be filled by those trained at the undergraduate level with knowledge and skills in One Health. Indicative of the One Health approach in action, state departments, such as the Department of Health and Department of Aquatic Resources, co-fund some positions related to water quality. Many employment opportunities demand expertise in interdisciplinary coalition building, policy, community relevance, and strong communication skills. Students with interdisciplinary backgrounds and skills in in-demand fields, such as biotechnology, would be more competitive for such jobs.

Demand for the program

- *Provide evidence demonstrating student demand for the program and the extent that the demand is not being adequately met by existing programs.*

Discussions with leadership of the UH Honors Program and Interdisciplinary Studies Program have identified a high-level of student interest in health-related undergraduate courses that would bring together faculty from multiple UH units, including those that do not currently offer undergraduate degrees. In addition, this program would enhance opportunities for student participation in the Undergraduate Research Opportunities Program which has a related goal of promoting the engagement of undergraduate students in faculty-mentored research and creative work.

- *Demand for services (e.g., contracts, consulting or community service) or the intellectual property (e.g., inventions and creative works) that would be produced by students and faculty of the program and the degree to which this demand is not being adequately met by existing programs.*

Measurable outcomes of the One Health Interdisciplinary Undergraduate Certificate Program will include growing the undergraduate educational portfolio, boosting undergraduate student enrollment and retention, heightening interdisciplinary scholarship, diversifying research opportunities, building a collaborative One Health workforce, and attracting philanthropy.

- *Evidence of employer demand.*

As mentioned above, there is a need for individuals with One-Health knowledge and skills by the Environmental Health program and other in-demand positions related to water quality. One Health skills such as interdisciplinary coalition building, health policy, community relevance and communication skills would be valuable to positions in government and industry.

Non-duplication of programs

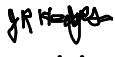
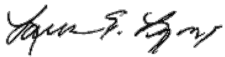
The One Health Interdisciplinary Undergraduate Certificate Program is intended to complement, rather than duplicate or compete with, instructional, research and outreach opportunities of the Institute for Sustainability and Resilience and other relevant UHM programs concerned with environmental sustainability, climate change, and community resilience. The proposed certificate program will provide a multidimensional, holistic perspective of health and strategically integrate UHM's top faculty and researchers into the undergraduate educational experience.

List potential risks: None identified.

New Resources: None required.

Signature Page

Signature indicates that the person has reviewed the ATP and supports the proposed program.

	Jerris R. Hedges, M.D., M.S., M.M.M.	Feb 9, 2021
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<i>Dean, John A. Burns School of Medicine</i>		Date
 <i>William G Chismar</i>	William Chismar, Ph.D.	Feb 10, 2021
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<i>Interim Dean, Myron B. Thompson School of Social Work</i>		Date
 <i>Nicholas Brian Comerford</i>	Nicholas Comerford, M.S., Ph.D.	Feb 10, 2021
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<i>Dean, College of Tropical Agriculture And Human Resources</i>		Date
 <i>Brian Taylor</i>	Brian Taylor, M.A., M.Phil., Ph.D.	Feb 10, 2021
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<i>Dean, School of Ocean and Earth Science and Technology</i>		Date
 <i>Amy Schiffner</i>	Amy Schiffner, M.F.A.	Feb 11, 2021
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<i>Director, Interdisciplinary Studies Program</i>		Date
 	Laura E. Lyons, Ph.D.	March 23, 2021
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<i>Associate Vice Chancellor for Academic Affairs</i>		Date
 <i>Michael Bruno</i>	Michael Bruno, Ph.D.	March 24, 2021
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<i>Provost</i>		Date
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<i>President</i>	David Lassner, Ph.D.	Date