

**Proposal for a Duke University Master of Science in Global Health Degree
at Duke Kunshan University
April 14, 2012**

BACKGROUND AND OVERVIEW

China's rapid development and involvement in an increasingly globalized world are tightly linked to key issues and challenges in global health. This relationship is highlighted in various realms, including the environment, health systems, and chronic diseases. As China's role in the world continues to expand, there will be an increasing need for global health experts in China and Asia, experts trained to participate in highly interdisciplinary collaborations among ecologists, environmental chemists, toxicologists, epidemiologists, geospatial analysts, biomedical scientists, clinicians, sociologists, psychologists, anthropologists, economists, and systems analysts. Duke University, with its commitment to interdisciplinary research and application of knowledge in the service of society, is uniquely positioned to contribute to this effort. In this context, the Duke Global Health Institute (DGHI) has articulated plans to launch research initiatives at Duke Kunshan University (DKU) aimed at developing a new and focused portfolio of projects on environmental health, health systems, and chronic diseases. We propose complementing these research initiatives with a DKU based offering of the existing Master of Science in Global Health (MSc-GH) degree, a multidisciplinary research degree that produces global health researchers to analyze the causes and determinants of diseases and their interrelated effects around the globe. The DKU based program will expose students to health problems and systems in China, the surrounding region, and the "global North."

DUKE GLOBAL HEALTH INSTITUTE

DGHI was founded on November 1, 2006, as a central initiative within Duke University's new Strategic Plan "Making a Difference." Based on Duke's rich tradition of interdisciplinary work and drawing on the intellectual assets of the entire University to address global issues, the Institute seeks to reduce disparities in health in our local community and worldwide through programs and activities in global health education, research, service, and policy.

DGHI supports faculty members and affiliates (currently close to 100 in total) who work on a wide range of interdisciplinary health related issues with international partners. In 2009, DGHI enrolled its first class of students in its MSc-GH program.

In addition to the MSc-GH, DGHI administers the Global Health Certificate (GHC) for undergraduate and graduate students, and supports the Global Health Focus Program. DGHI recently created an interdisciplinary, non-degree granting program for doctoral candidates from schools and departments across the university. This program provides a forum for doctoral candidates with global health interests to participate in the Duke global health community and to engage in dissertation research in global health at international locations.

PROPOSED TIMETABLE

Subject to the approval of Duke faculty, DKU Board of Trustees, and the Chinese Ministry of Education (MOE), the MSc-GH degree program at DKU would enroll its first class in China in 2013, with new cohorts to begin annually in August.

ENROLLMENT, TARGET AUDIENCE, AND ADMISSIONS

In order to ensure student quality equivalent to admissions for the Durham program, the enrollment target for the first class of the program will be 20 students, with a goal of 25 students in the second year, and 35 students in year three. This class size will balance the need for high quality instruction with the need for a critical mass of students to provide a rich educational experience, and will be consistent with the teaching and residential space planned for the first phase of the DKU campus.

The primary target audience for this degree will be Chinese and other Asian learners. It will include researchers, policymakers/advisers, medical doctors, recent graduates, and students planning to pursue doctoral studies in a global health related discipline. Diversity of the class in terms of college major, work experience, cultural background, and citizenship will be emphasized with the end result that students learn from each other, both in and out of the classroom. While the student body at DKU will be diverse, as it is in the Durham MSc-GH program, admissions criteria will be consistent with the Durham based program and target top learners. In addition, the match between the research interests of applicants and DKU based faculty will be considered during the admissions process.

Admission procedures will be activated upon receipt of program approval by the MOE. Applicants must have a bachelor degree or its equivalent before enrollment and should apply for admission to the program through the online application system. Students must meet all Duke University admissions criteria.

All applicants will be evaluated from multiple perspectives including academic capability, intellectual curiosity, accomplishments, leadership potential, and communication skills.

PROGRAM STRUCTURE AND CURRICULUM

Students in the program will acquire the knowledge, skills, and experiences they need to address the most pressing environmental and global health concerns in China and globally, and the program will stress the importance of critically appraising, synthesizing, and conducting research, as well as approaches to translating research into practice. As distinct from the Durham based MSc-GH, materials will be included in courses that highlight the similarities and differences among global health issues in different regions of the world, but more often use China and Asia as the basis for comparison. The DKU based program will also give greater emphasis to comparative health systems, cross-cultural competency and the ethical challenges of community-based research.

The curriculum for this degree will consist of 32 units of course work (with about 9 contact hours per unit of course work). Students should be able to complete the curriculum within 18 to 24 months.

The curriculum will include:

- Five core courses (15 units)
- Four elective courses (12 units)

- Fieldwork (3 units)
- Thesis (2 units)

Core Courses

Global Health Challenges: Course introduces major global health problems and social, behavioral, economic, biomedical and environmental determinants of health in resource limited settings. Topics include communicable diseases i.e. HIV, malaria, tuberculosis and common childhood diseases; chronic diseases such as cancer, diabetes, cardiovascular disease and mental health; and determinants of health associated with these diseases, such as poverty, gender imbalance, culture, poor environmental sanitation, malnutrition, tobacco use, and climate change. Other topics may include health promotion, reproductive health, maternal and child health, and disaster preparedness.

Health Systems in Developing Countries: Course introduces key challenges faced in strengthening of health systems in low and middle income countries, particularly in Asia. Topics include: overview of organization of health systems, models of purchasing and providing health care, innovations in financing health care, issues in service delivery such as quality of care and human resource challenges, and frameworks and methods employed in the evaluation of health systems. Course will also draw attention to resource allocation problems and various frameworks used to address them. Readings primarily from health policy, economics and other social science journals

Global Health Research: Introduction to Epidemiologic Methods: Introduces principles of epidemiology, including disease frequency measures; measures of association; observational, experimental, and quasi-experimental study designs; validity -- confounding, selection bias, measurement error; reliability. The course also will interweave introductory biostatistics for continuous and categorical variables. Lab section in which students walk through guided data analysis on provided data set using STATA.

Global Health Research: Design and Practice: Course introduces wide range of methodologies appropriate for global health research and will cover the advantages and disadvantages of each. Students develop ability to evaluate and use best methodological approach to answer their research question, Team projects and appropriate technologies also examined. Students further refine skills in designing a research project and will be taught how to design qualitative and quantitative surveys, in-depth interviews, and conduct ethnographies.

Bioethics: Course presents an overview of practical and theoretical approaches to bioethics from a range of perspectives, including the humanities, law, philosophy, medicine and science. Students apply various resources, terminology and frameworks to case studies preparing them for their own research. Course includes IRB and responsible conduct of research.

Sample Elective Courses

Depending on faculty expertise, elective course offerings may vary from year to year. Given the broad appeal of these courses and their foundational relationship to global health, it is anticipated that these courses will likely be offered as electives at DKU.

Global Health Research: Epidemiologic Methods II: Course builds on Epidemiologic Methods I to present advanced topics in epidemiology. Topics include review of study designs including meta-analysis; intensive study of bias, including confounding, selection bias, and misclassification; missing data; sensitivity analysis; topics in regression analysis; and an introduction to the analysis of time to event data, including life table methods, survival curves, and Cox proportional hazards regression. Discussions of causal inference and how to read, review, and write scientific literature. Course has a weekly data analysis lab section to develop programming and statistical analysis skills.

Global Mental Health: Examines epidemiology and social context of mental disorders globally. Topics include the basic epidemiology of the most common mental disorders; challenges with definition and classification of mental disorders; epidemiological methods; mental disorders in the context of HIV/AIDS; disaster/emergency mental health; special populations; approaches to treatment; and barriers to treatment such as stigma. Course utilizes a social epidemiology perspective, focuses on the social, economic, and cultural determinants and consequences of mental health problems across the life course.

Global Nutrition: Over and Under Nutrition in Developing Countries: Nutrition problems of developing countries. Epidemiological, biological, and behavioral consequences of both overnutrition (e.g., obesity) and undernutrition (e.g., malnutrition). Emphasizes infectious disease (HIV, TB, malaria, diarrhea) of children and perinatal outcomes (e.g., fetal loss, low birth weight, HIV transmission, pre-eclampsia) of women and children. Basic principles of nutrition, physical manifestation of nutritional deficiency, and anthropometric assessment (body composition). Strong focus on ethical and political issues relevant to the formulation of nutrition policy and programs in developing countries.

Global Environmental Health: Economics and Policy: Social science perspective on global environmental health. Students will learn to identify primary environmental causes of high burden diseases such as malaria, diarrhea, and respiratory infections; describe how to measure socio-economic impacts of global environmental health diseases; discuss key policies to control global environmental health problems based on private prevention and therapeutic behaviors; and propose frameworks to empirically monitor and evaluate global environmental health policies. A sub-module will focus on climate change and water-borne diseases.

Fieldwork and Thesis

The primary goal of the fieldwork and thesis is to give students the opportunity to apply and enhance the knowledge and skills acquired through their course of study. Each project will be carefully planned, and students will be mentored and supported by a faculty member who will also head the student's thesis committee. Please see the "Faculty Resources" section below for more information. Expectations for fieldwork, including funding and placement, at DKU will be the same as those for students in the Durham-based program. Students in the DKU based program will be required to undertake their fieldwork experience with an underserved population and to collect their own research data. Depending on students' background and interest, this fieldwork could be undertaken in countries in the region or in the global North, including in Durham. A brief proposal describing the project objectives and methods will be developed and submitted prior to the end of the second semester of the program. Once completed, the thesis will be defended before the student's thesis committee.

A select number of students in the DKU based program may have the opportunity to conduct some or all of their thesis research in Durham. These students must apply to work with faculty on their research. As DGHI's research collaborations and projects continue to expand worldwide, there should be ample capacity to accommodate students at each location.

FACULTY RESOURCES

Three different categories of faculty may teach at DKU: Duke faculty members hired to reside full-time in Kunshan; Duke faculty members based in Durham who travel to DKU to teach specific courses; and adjunct faculty from China and other parts of the world. The Director of DGHI and the Faculty Director of the MSc-GH program at DKU will jointly identify faculty to teach in the program. This will be done in consultation with the faculty directors of other DGHI education program directors to ensure coordination of teaching needs across DGHI's various education programs. Most of the courses offered in the MSc-GH will be taught by regular rank Duke faculty. The DGHI Director and the Provost will work with Deans and Departmental Chairs to facilitate teaching opportunities and to minimize any impact on teaching needs in Durham. All faculty teaching in the program will have Duke faculty appointments.

In order to provide continuity, core courses in the MSc-GH program will be taught primarily by faculty members based full-time at DKU. Durham based faculty and adjunct faculty will focus on elective courses, which may rotate depending on faculty interest, student interest, and program needs.

Mentoring MSc-GH students in the DKU based program and supervising their theses will occur in three ways: 1) full-time Duke faculty based at DKU; 2) Duke PI's conducting research in China, whose projects the students in the DKU based program will join; 3) adjunct Chinese faculty with whom Duke has developed trusted research relationships. During the faculty recruitment process, there will be clear expectations that faculty hired to reside at DKU will chair several masters' theses per year and serve as readers on several others. Durham based faculty who teach at DKU will not be required to supervise theses, but may do so if they wish.

Additionally, Duke postdoctoral fellows or doctoral students conducting their own research at DKU will contribute to mentoring the fieldwork and thesis projects and may serve as teaching assistants in core and elective courses.

Please see the faculty staffing model accompanying these proposals that shows the projected allocation of effort across the three categories of faculty. The allocation of teaching effort across the three categories is flexible and can be adjusted if needed. A more specific faculty teaching plan will be presented to the DGHI faculty in November 2012 that includes the names of DKU based faculty members hired and Durham based and adjunct faculty who have committed to teach in the program.

METHODOLOGY

All courses will be taught in English. Courses may be taught in seven or fourteen week blocks, depending on overall scheduling needs. In order to enhance student learning and flexibility, faculty who teach in the DKU program will have the opportunity to make use of innovative educational approaches. For example, one or two MSc-GH courses could be offered in a blended learning environment (part

online, part classroom-based); team-based learning strategies could be employed; and live videoconferencing of experts from all over the world could enhance the learning experience for students.

PROGRAM ADMINISTRATION AND OVERSIGHT

The MSc-GH program at DKU will have an on-site faculty director and committee responsible for academic oversight and quality. The DKU based faculty director will be expected to work closely with the Durham MSc-GH faculty director and graduate committee to ensure parity in quality across both programs. There will also be a full-time administrative coordinator, and a dedicated research project design advisor. The pilot MSc-GH program at DKU will be reviewed at the end of the third year to determine if it meets the quality standards of Duke University based on the following metrics: number and quality of applicants, yield rates, GRE scores, graduation rates, job placements, and enrollment of graduates in PhD or M.D. programs.

CAREER SERVICES AND PROFESSIONAL DEVELOPMENT

The program will have a career services director who will provide comprehensive career services and professional development opportunities to all students both collectively and individually in order to ensure satisfactory job placement for the program. These services will include:

- Building and maintaining broad relationship with government, NGO, corporate employers, and search firms to drive career opportunities accessible to the students
- Organizing campus recruiting events including employer presentation, networking events, on-campus interviews, etc.
- Providing career management workshops and training sessions
- Helping students identify personal strengths and interests through free assessment tools
- Offering one-on-one counseling to students to work out personalized short-term job search and long-term career development strategies

These services would help students find employment in government agencies, international NGOs, and private companies. We expect some of the students to pursue PhDs after graduation.

CONCLUSION

Duke University is an international leader in global health research and education. Since its establishment in 2006, DGHI has been rapidly expanding the global health resources, initiatives, and opportunities at Duke. Offering a MSc-GH program at DKU will enable Duke to contribute to the preparation of China's next generation of global health leaders. Graduates will be prepared to engage in interdisciplinary research that informs global health policy decisions, and they will understand the implications of their research from multiple perspectives.