2020 Medical Technologies in Developing Countries  
KPPI 673-5  
SYLLABUS

The Medical Technologies in Developing Countries course provides students the unique opportunity to inform the design and launch of medical technologies for developing countries by conducting in-country market research. The students' findings will be shared with the developers of the medical technologies, including Northwestern University and several companies and philanthropists.

Prior market research trips have taken place in India, Kenya, Mozambique, Tanzania, Uganda, Malawi and Zambia, each with a focus on medical technologies such as HIV tests, tuberculosis tests, and technologies for newborn health.

Students will spend the second five weeks of Winter Quarter in the classroom getting an introduction to global health, learning the background on medical technologies under development for the markets listed above; the essentials for conducting medical product market research in these geographies; the basic economics, culture, and politics of the country of interest; and the fundamentals of the country's healthcare system.

Following this initial coursework, students will spend two weeks on the ground focusing on the following:

**Tanzania:**

I. **Neonatal Nursing Certification Program:** Understand the process, cost structure and key stakeholders involved in developing a neonatal certification program

II. **Private and Public Distribution Systems:** Understand the role that private distributors play in healthcare systems with public sector supply chain providers

**Kenya:**

III. **Med Tech Finance:** Understand how medical technologies are financed through meeting with key stakeholders in the market, including: end-users and administrators at hospitals, lenders, and local distributors. Students will be placed in groups where they will work to research the following questions:

- What is the universe of med tech/healthcare financing firms funding projects in the country of interest and/or that have plans to fund projects in the country of interest? What have they been financing/what type of projects, devices and equipment are within their focus?
- What are the common financing terms for medical equipment/devices? What are the constraints, benefits, and major issues that would require external market interventions?

After the field work, students will then return for five weeks in the classroom in Spring Quarter where they will learn to analyze their field work, synthesize key findings and provide financial/strategic partner(s) and financing recommendations to the developers of these medical technologies.

**Admittance to this course is by application only.**
Attendance to every class session is mandatory. If you miss one or more sessions, your grade may be deducted by one letter grade.

Your accepted application for this class will also ensure that you will be enrolled in KPPI-973-5 in Spring Quarter. Students may not drop after the first week of the class.

One credit course
Meets 6:30-9:30 pm
Monday, Winter Part B begins February 10, 2020
Thursday, Spring Part A classes begin on April 2, 2020

You will need to take early exams on March 14 and 15 to accommodate the trip.
The required travel for this course will take place in between the Winter and Spring quarters.
Exact dates and locations TBD but most likely Tanzania / Kenya, March 15 – March 29

Financial aid will be available to help cover the travel expenses.

You do not need to do anything in the bidding system, unless you need to drop a course to fit this one in. Please let us know ASAP if you no longer can fit this course into your Winter and Spring schedule.

**Class 1: Introduction - What are babies living with and dying of in developing countries?**
**Monday, February 10, 2020, 6:30-9:30 PM**
Discussion about Group Assignments and Committees; Lecture on Africa, tools to assess the healthcare capacity and burden of disease in Africa

Assignments for Class 1:
- Read Excerpts from NEST Grant Proposal
- Read “The nursery of the future”

Guest Speaker:
- Introduction to Global Health (Rob Dintruff)
- Introduction to NEST (Kara Palamountain)

**Class 2: Newborn Care in Low- and Middle-income Countries**
**Monday, February 17, 2020, 6:30-9:30 PM**
Overview of newborn care in low- and middle-income countries, disease prevention, diagnosis, therapy and monitoring

Guest Speaker: Introduction to Tanzania and Kenya through NEST Market Assessments (Archit Gupta and Melissa Maggart)

Assignments for Class 2:
- Read CIA World Factbook –
• Read Tanzania and Kenya Market Assessment (decks and Business Plans)

Class 3: The Hospital Administrator and Lender Perspective  
Monday, February 24, 2020, 6:30-9:30 PM

Assignments for Class 3:
• Assignment #1: Each NEST Team will need to have some working knowledge of healthcare systems and their respective stakeholder groups prior to arriving in country.
  1. Develop an initial list of questions you have about NEST.
  2. Begin conducting secondary research (literature reviews) to see if you can answer any of these questions.
  3. Develop a list of organizations/people you want to meet with in country to further answer your questions.
• Assignment #2:
  • Read: NEST360 Newborn Technology Landscape for Technologies in Low Resource Settings 2nd Edition
  • Read: Safe Anesthesia Training Example
  • Skim: MSD Medium Term Strategic Plan II
  • Read: Guide for Investors In Private Healthcare in Emerging Markets
  • Read: High-Performing Health Financing for Universal Health Coverage
  • Read: Healthcare in Africa – An Investor’s Perspective
  • Read: Private Equity and Healthcare in Emerging Markets

Guest Speakers:
• Introduction to Finance in Emerging Countries (Varsay Sirleaf, CEO of Snapper Hill Clinic)
• Introduction to NEST Technologies and time for Q&A on NEST (Becca Kirby, Senior Market Access Manager - NEST)

An electronic copy of this assignment will be due at the beginning of class.

Class 4: The Medical Device Distributor Perspective

Monday, March 2, 2020, 6:30 - 9:30 PM

Assignments for Class 4:
• Practice your first draft of your field guide

Assignments:
• Complete First Draft of Field Guide
  An electronic copy of this assignment will be due at the beginning of class. You will present this assignment in class with your peers.
Guest Speaker: Danica Kumara, Product Manager, Medical Devices | 3rd Stone Design

Class 5: Final Preparation for Trip  
Monday, March 9, 2020, 6:30 - 9:30 PM

Assignments:
• Final draft of Field Guide due Friday
• Continue research into stakeholders and seek to secure appointments
• Interview Guide Review with Rob/Kara and between groups

Travel  
March 15-29, 2020

Class 6: Trip Reflections and Synthesis, Part 1  
Thursday, April 2, 2020, 6:30 - 9:30 PM
Assignments:
• Draft outline for Presentation and Paper
• Teams share draft outlines
• Review research objectives and data collected to find gaps that require follow-up

Class 7: Synthesis, Part II  
Thursday, April 9, 2020, 6:30 - 9:30 PM

Guest Speaker: Grant Harris, CEO Harris Africa Partners LLC

• Consolidate market research inputs from all team members, assess gaps and inconsistencies and discuss presentation format

Class 8: Draft Presentations  
Thursday, April 16, 2020, 6:30 - 9:30 PM
• Complete draft presentation for review and comments by Rob/Kara

Class 9: Prepare Final Presentations  
Thursday, April 23, 2020, 6:30 - 9:30 PM
• No Class

Class 10: Final Presentations  
Thursday, April 30, 2020, 6:30 - 9:30 PM
• We will be presenting our work to each other and a number of key stakeholders (companies, foundations, and other non-profits).

Students can find useful resources for safety and security, academic support, and mental and physical health and well-being on the NU help website and app.