

One Page Abstract (250 words)

One Health Approach to Course Development & Implementation

In 2013 an international partnership was established between the University of Peradeniya (UoP) Sri Lanka and the University of California Davis (UC Davis) campuses. The 2015 One Health Field Intensive Course was designed to bring faculty members from both institutions together to develop curricula and field experiences that would prepare students, both in the course and at UP, to apply a One Health approach to problems at the human-animal-environmental. Course participants consisted of a group of students and faculty in human health sciences, veterinary medicine, agriculture, nutrition and environmental science who are currently enrolled at the UoP and UC campuses.

Selected students from both countries worked closely together in collaborative team-based learning for thirty days under the guidance of faculty members from both universities. Leadership, communication, cultural awareness and problem solving were prominent themes of the program. Students were directed toward an active learning process through discussions, presentations and interviews to gain practical knowledge. Over 94% course participants said they gained one or more specific ideas they can implement in their career. More than 88% students learned a new approach to their career and indicated that the course may help them be more effective and creative in their current position. The course received very positive feedback from students and course instructors. In addition AWB-supported faculty (Smith and Bell) had opportunities to engage with UP faculty to discuss student-centered learning and One Health course development. Plans are underway to continue this engagement and offer the One Health course next year.



Figure 1. Discussion between Dr. Woutrina Smith and the curriculum development committee in Faculty of Veterinary Medicine and Animal Science

Final Report: Development and Implementation of a One Health field Course in Sri Lanka



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Background

The University of California, Davis (UC Davis) and the University of Peradeniya (UoP) in Sri Lanka have many things in common, now they have even more. The fact that both universities have faculties of medicine, veterinary medicine, and agriculture that are leading institutions in their countries, and that many UoP faculty completed graduate degrees at UC Davis, made conversations about doing joint field course training in Sri Lanka an exciting next step in building intellectual bridges for faculty and student collaborations into the future. Both universities see the importance of the One Health approach that acknowledges the many connections between humans, animals, and their shared environments, and both universities see the power of using multidisciplinary teams to identify and implement locally sustainable solutions for diverse health problems.

The One Health field course drew on experiences from UCD and UoP in conducting other field courses and workshops. The previous training experiences tended to focus on a single discipline or problem, whereas the One Health course was designed to be broader, to push the comfort zone of participants to think outside their usual training and work with others who had very different backgrounds in order to characterize and solve global health problems. The One Health field course came together quickly in part because of the trust and enthusiasm among the UoP and UCD faculty teams, and in part because of the feeling of urgency in timing, to build on One Health momentum at both universities to develop an innovative training course focused on local problems that could be ultimately transferred to other countries and health contexts for fine tuning to meet their needs.

Key activities

Field course planning – the One Health field course planning phase in the months prior to launch was conducted as a true partnership among faculty from University of California (UC Davis) and faculty from University of Peradeniya (UoP). Professor Buddhi Marambe, Dr. Eranda Rajapaksha and Dr. Saumya Wickramasinghe were leaders from the UoP faculty who were both inspirational and incredibly effective, and they were instrumental in designing the itinerary for the Sri Lanka One Health course. They motivated and organized at least 20 additional faculty members from UoP to participate in (List of faculty members are in Annexure I) and help lead sessions of the One Health course so that there was truly a multidisciplinary team approach and diverse perspectives represented in the course. Deans from the faculties of medicine, veterinary medicine and agriculture a UoP were engaged in the planning discussions and fully supportive of both the course and of promoting a One Health curriculum that would engage their 3 faculties.

On the UC Davis side, Professors Michael Wilkes and Patricia Conrad were leaders who had worked closely with the UoP faculty a year prior when they held the first Sri Lankan One Health Conference and stayed for an extra week to do planning, visits, and discussions to develop the ideas for the summer field course. Drs. Smith, Bell and Zielinska participated in the pre-summer

course planning Skype conferences. AWB Board members were invited to attend a pre-course orientation day when Drs. Rajapaksha and Wickramasinghe were visiting UC Davis in spring 2015. This pre-course orientation was critical to bring the students together from their multiple UC campuses so that they could get to know each other, start preparing themselves for an international experience, and do their first immersion in Sri Lanka scenario discussions to think about cultural sensitivities and goals for the field course in Sri Lanka. Figure 2 below shows some of the cross-cutting themes that were discussed in the orientation.



Figure 1: One Health Center of Expertise, University of California Global Health Institute logo exemplifying diverse and cross-cutting themes that are interwoven and affect the health of humans, animals, and their shared environments. The Center was a co-sponsor of the course along with the Schools of Medicine and Veterinary Medicine and College of Agriculture and Environmental Sciences (CAES) at UC Davis.

Field course implementation – The One Health field course is a source of pride at UoP as well as at UC Davis. In Sri Lanka, the UoP Deans from the medical, veterinary and agriculture faculties were involved in launching the course at the opening ceremonies. The Dean of the medical faculty also participated in the final day activities which included student presentations. The schedule of Drs. Woutrina Smith and Mark Bell is detailed in the ‘Additional Information’ section below. Dr. Woutrina Smith’s role was to be the UC Davis co-lead for the first phase of the course with Professor Michael Wilkes. During this period she traveled from California to Sri Lanka with the students who were not already in-country for pre-course travel and research. The group met in Colombo and traveled together to the UoP. She participated in classroom and field One Health sessions to provide subject matter expertise on issues relating to veterinary medicine and environmental issues, and worked closely with the students to help get them acclimated to

Sri Lanka, work through initial group dynamics issues, and start developing their individual project ideas to explore longitudinally during the course.

Dr. Mark Bell arrived shortly after Dr. Smith departed and took over leadership of the course with Dr. Patricia Conrad. With his extensive experience as a trainer in tropical agriculture, Dr. Bell was able to highlight the agricultural elements of One Health, and work with the UoP agricultural faculty to most effectively engage students in identifying and solving problems relating to tea plantations in the highland crop production. In participatory exercises, the group was challenged to analyze agriculture and its potential human, environment and animal health interactions. In one of the exercises lead by Dr. Bell the students were asked to break-down a specific cropping system (rice farming) and look at the individual elements in producing a rice crop; combining the crop analysis with home gardening and home poultry raising. Each group looked at specific elements in growing rice and the home garden system. They then presented and discussed their findings to broaden the collective understanding of the potential health issues.

Results

The Sri Lanka One Health field course (SLOH) was a definite success. The faculty is committed to on-going quality improvement, but overall the field course provided an incredible immersion experience in an international setting where students and faculty could push the envelope of learning and innovation within a safe intellectual space. Dr. Smith had many synergistic interactions with Sri Lankan faculty outside of the regular field course activities that were rewarding and important to pave the way for future work. She had meetings with the UoP faculty committee leading revision of the veterinary school curriculum to share ideas about what has worked well in revising the veterinary curriculum at UCD, and that has led to ongoing follow-up discussions to share teaching ideas and resources to best effect. Dr. Smith also had meetings with faculty from medicine and from agriculture about developing new collaborative research projects across the two universities, and that is resulting in new grant-writing to continue research and student exchanges for next summer. Dr. Smith was a plenary speaker on One Health curriculum development at the annual Sri Lanka Veterinary Association Conference that immediately followed her engagement in field course activities. Participating in the national conference allowed her to have interactions with Sri Lankan leaders in veterinary medicine as well as other international speakers from leading institutions in the United Kingdom and in New Zealand, so that we can coordinate working together to foster collaborations focused around UP in Sri Lanka.

While there, Dr. Mark Bell was also asked to present to Dr. Buddhi's graduate agricultural class. The agricultural students meet on Saturday mornings and he was able to talk with them about California and Sri Lanka university systems and then how we can better connect research and

extension for impact. As a result of the visit, Mark Bell was asked to be a keynote speaker at their Postgraduate Institute of Agriculture (PGIA) annual conference in November this year.

One of the major outcomes of the AWB faculty support for Drs. Smith and Bell was the development of even stronger linkages between UC Davis and UoP. There was growth in the establishing collegial bonds. Such linkages are critical to building trust and establishing a global network of scientists working collectively to address issues.

Beneficiaries and statements of impact

The beneficiaries of the One Health field course include participating faculty (see annexure 1), students (15) and stakeholder groups (NGO's, Ministry of Health, Ministry of Wild life) in Sri Lanka. Our discussions during and after the course with students and faculty have been very positive and reflected that participants were very grateful for the perspective-broadening experiences the course and interactions with the faculty provided. Below is a summary statement that can be shared:

“To truly understand a global health problem, there is no substitute for immersing in it by living amongst it and working with those who are affected by it. Whether we were dealing with problems of human health, animal health, or environmental health during the One Health field course, I was repeatedly impressed by the warmth and openness during field visits as people talked about local problems and finding innovative solutions. I think for myself and many others, a field course like this is both challenging and invigorating, and I've heard many people say it is life-changing.”

Lessons learned, sustainability, and next steps

The goal, now that we have proof of concept in Sri Lanka for this One Health field course, is that UoP and UC Davis will work together to develop a model so that the course can be offered on an ongoing basis and collaborations can result in long term education and research projects that benefit both nations. Both institutions have said they are supportive of finding ways to support future activities. In addition to the field course as a training activity, collaborative research is being pursued among faculty and students from UoP and UC Davis, which is involving joint grant writing and manuscript writing. As a follow up to the course Dr. Rajapaksha was invited to be a guest speaker at a One Health Symposium that was held at UC Davis two weeks ago, and it was a great forum for him to get credit for his leadership in Sri Lankan One Health issues and share his ideas.

When thinking about lessons learned and what went well, a key to success was the well-coordinated and enthusiastic Sri Lankan faculty, staff, and students. Without their adept knack for anticipating needs and adapting to changing circumstances, there would have been more delays and day-t-day frustrations that are associated with spending time in a developing country such as Sri Lanka. Having months of communications prior to the course, involving both UoP

and UC Davis faculty, was a big reason why we were all generally ‘on the same page’ about offerings and priorities during the field course implementation phase.

In reflecting on what improvement would strengthen the course, we have identified several changes, and discussions are ongoing:

- We will plan to have a longer pre-course orientation
- Provide students with clearer information on academic expectations;
- Decompress some of the travel to allow for more rest and reflection;
- Improve opportunities to access the internet
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Problems and risk assessment

The field course was implemented very smoothly using the joint UC Davis-UoP team leadership and supporting staff who dealt with minor logistical challenges as they arose. Overall the group was healthy with no major illness or accidents. During the course UoP team were careful to take appropriate precautions and if a problem arose, to respond accordingly to meet the health and safety needs of the group. Dr. Wilkes was available to provide medical counsel as needed.

Additional information.

Schedule for Dr. Woutrina Smith:

12/13 June (Friday/Saturday)

- Depart Davis, travel via Dubai to Sri Lanka with University of California students for One Health field course

14 June (Sunday)

- Arrived Colombo, Sri Lanka
- Traveled to University of Peradeniya near Kandy
- Afternoon group session with students for course orientation
- Group dinner and introductions at Gal Bungalow
- Overnight in Peradeniya

15 June (Monday)

- Opening ceremony at University of Peradeniya with Deans of Medicine, Veterinary Medicine, and Agriculture
- Morning sessions on One Health in Sri Lanka' and Sri Lankan history, followed by interactive discussions and lunch on campus
- Afternoon campus walking tour
- Evening welcome reception with field course participants as well as Sri Lankan students and faculty representing Medicine, Veterinary Medicine, and Agriculture schools
- Overnight in Peradeniya

16 June (Tuesday)

- Morning group sessions on agriculture in Sri Lanka and the kidney disease epidemic of unknown origin that is focused in rice growing agriculture areas
- Afternoon group sessions on cultural sensitivity and Sri Lanka contexts
- Visits with laboratory faculty to discuss collaborative research
- Group dinner at Gal Bungalow
- Overnight in Peradeniya

17 June (Wednesday)

- Morning group travel to the North Central Province to start rice and kidney disease field visits
- Afternoon group visit to Ayukana Cultural Heritage site
- Meals and overnight lodging at Rajarata University of Sri Lanka

18 June (Thursday)

- Full day group visit to kidney disease affected rice growing community Medawachhiya for stakeholder meetings and tours with experts, families and local officials
- Meals and overnight lodging at Rajarata University of Sri Lanka

19 June (Friday)

- Group travel to aquaculture center of expertise for morning introductory sessions on One Health and aquaculture in Sri Lanka
- Afternoon group field session on aquaculture methods, fish identification, and breeding lab
- Woutrina traveled back to Peradeniya with Professor Athauda for continued discussions and conference prep
- Overnight University of Peradeniya

20 June (Saturday)

- Woutrina give plenary One Health curriculum talk at Sri Lankan Veterinary Association Conference in Kandy
- Overnight University of Peradeniya

21 June (Sunday)

- Faculty discussions and meals at University of Peradeniya to plan collaborative curriculum and research next steps; closing meeting with deans
- Overnight University of Peradeniya

22 June (Monday)

- Woutrina departs Colombo, Sri Lanka

General Schedule for Mark Bell***25 June (Thursday)***

- Arrived Colombo
- Traveled to University of Peradeniya
- Afternoon class session with students on tropical plantations
- Mark facilitated framing discussion on health factors related to Agriculture
- Overnight in Peradeniya

26 June (Friday)

- Visit to 2 Elephant sanctuaries (including the elephant Orphanage at Pinnawela)
- Return to Gal Bungalow
- Dinner at Gal Bungalow

27 June (Saturday)

- Gave class to Dr Buddhi's graduate students.
- Joined Michael Wilkes for interview of Ranjit Mulleriyawa (former International Rice Research Institute)
- Toured Kandy.

28 June (Sunday)

- Visit to Tea Research Institute (with a visit to Labookelle estate, lunch break and city tour at Nuwara Eliya)
- Introduction to Tea Plantations in Sri Lanka
- Life of Tea Plantation families
- Lifestyle of Tea Plantation families
- Night at TRI Guest House

29 June (Monday)

- Work Session in Tea fields and Tea Factory
- Night at TRI Guest House

30 June (Tuesday)

- Interactive session at Government Hospital and MOH at Nuwara Eliya
- Interactive session: At Dilmah health Centre for Plantation workers
- Night at TRI Guest House

July 1 (Wednesday)

- Morning - Traveled to fair trade tea plantation interviewed management and staff
- Afternoon – traveled to Peradeniya
- Overnight in Peradeniya

Thursday July 2

- Closing discussions with Dr Buddhi to discuss One Health and invitation to speak at the PGIA November conference
- Met with Sri Lankan student to discuss the role of ICT in Extension
- Departed Colombo

Annexure 1:

Resource Persons from UoP and UC Davis (in alphabetical order)

Dr. Anil Pushpakumara, Faculty of Vet. Medicine and Animal Science, University of Peradeniya
 Dr. S Athauda, Faculty of Agriculture, University of Peradeniya
 Prof. Buddhi Marambe, Faculty of Agriculture, University of Peradeniya
 Dr. Chalinda Beneragama, Faculty of Agriculture, University of Peradeniya
 Dr. Ashoka Dangolla, Faculty of Vet. Medicine and Animal Science, University of Peradeniya
 Dr. Eranda Rajapaksha, Faculty of Vet. Medicine and Animal Science, University of Peradeniya
 Prof. HDMT Herath, Faculty of Arts, University of Peradeniya
 Dr. G Hitinayake, Faculty of Agriculture, University of Peradeniya
 Prof. Indika gawarammana, Faculty of Medicine, University of Peradeniya
 Dr. Keerthi Mohotti, Tea Research Institute, Talawakelle
 Prof. S.A.M. Kularathne, Faculty of Medicine, University of Peradeniya
 Dr. Jayath Kirthisinghe, Faculty of Agriculture, University of Peradeniya
 Dr. Janaki Mohotti, Faculty of Agriculture, University of Peradeniya
 Jean Holsten, Director, Dialogue and Networking for Bread of Life. USA
 Dr. Mark Bell, Director, International Learning Center, UC Davis, USA
 Prof. Michael S Wilkes, School of Medicine, UC Davis, USA
 Dr. Mojith Ariyaratne, Faculty of Agriculture, University of Peradeniya
 Prof. Patricia A. Conrad, School of Veterinary Medicine, UC Davis, USA
 Dr. Paulina Zielinska, Director, Office for Global Programs, UC Davis, USA
 Dr. DMH Peramunugama, Department of National Botanic Gardens, Peradeniya
 Prof. Gamini Pushpakumra, Faculty of Agriculture, University of Peradeniya
 Dr. Ranil Rajapaksha, Faculty of Agriculture, University of Peradeniya
 Prof. R.P.V.J. Rajapaksha, Faculty of Vet. Medicine and Animal Science, University of Peradeniya
 Dr. Saman Hettiarachchi, Tea Research Institute, Talawakelle
 Dr. Saumya Wickremasinghe, Faculty of Vet. Medicine and Animal Science, University of Peradeniya
 Dr. Suranga Kodithuwakku, Faculty of Agriculture, University of Peradeniya
 Dr. Thilak Abeysekara, Faculty of Medicine, University of Peradeniya
 Prof. Woutrina Smith, School of Veterinary Medicine, UC Davis, USA