Part II

ACTIVITY REPORTING FORM
FOR CDC VLP PROGRAM

(Deadline for completion: four weeks after the VLP visit)

Name of the Volunteer: Brigitte LUCQUIN
Home institution of the volunteer: Sorbonne Université, Campus Pierre et Marie Curie, Paris
Institution Visited (name, city, country): National University of Laos (NUOL), Vientiane, Laos
Travel dates: 22/11/19-14/12/19

An activity report must be provided using the format described below for each Volunteer Course that received financial support from IMU CDC. Please state how the students/ colleagues benefited from the course, and a summary of any follow-on activities that were seeded by this visit and course.

The maximum length of the report should be **4-pages**. Please note that at least four pictures of the supported visit (including a picture of the Volunteer with the students) should be included/ attached to this report and send as a pdf and email to the CDC Administrator.

After consideration by CDC, the intention is that this activity report and pictures will be made publicly available on the CDC web site.

Were any official IMU representatives or IMU adhering organizations involved (including any IMU sub-committee members) involved in the project, if so, which one:

1. General Information about the Volunteer Lecturer Course
Arrival and Departure Day in Host Country: 23/11/19-13/12/19
Who was your main contact in the host country (name, affiliation and email address):
Sackmone SIRISACK, Faculty of Natural Sciences, Dongdok Campus, National University of Laos (NUOL), Vientiane, Laos
Email : ssirisack2000@yahoo.com

Please answer the following questions:

a. Location (country, city, institution) of your lecture: NUOL, Dongdok campus, Vientiane, Laos
b. Dates of Lecture: 25/11/19-12/11/19
c. Subject and title of the course: Advanced numerical analysis and partial differential equations
d. How often did you teach a course? 3 hours every week day
e. How many students did participate in the course (s)? variable number ; around 20 in average
f. Background of Students: Undergraduate/ Master/ PhD Students? Master and undergraduate
g. Please provide (if possible) any schedule of activities/list of topics covered during your visit : from 13h to 16h every week day. Topics : introduction and general presentation of typical examples of partial differential equations of elliptic, parabolic and hyperbolic type ; full study of the “model problem”, i.e. of the Laplace equation with homogeneous Dirichlet boundary conditions in 1D and of the heat equation in 1D : modeling, mathematical analysis and numerical approximation by the finite difference method with convergence analysis and numerical simulations with Scilab software.
h. Did you develop or follow a prescribed syllabus or did you write your own? I used my own syllabus Was it available to the students before the course or when the course began? I sent the syllabus and the detailed notes (88 pages, including a bibliography) of my course before the course (on 8/11). These notes correspond to the translation in english of part of a book I wrote in french few years ago

(“Equations aux dérivées partielles et leurs approximations ”, by B. Lucquin, Ellipse, 2004). I also sent (on 23/11) a list of exercises corresponding to the course. We did also 3 practical sessions on computers with Scilab software (using 2 documents sent to the students).
Please also mention the references you used or any text books that were referred to: I also gave to the department a more recent book that I have written with a colleague from my university (“Partial diiferential equations : modeling, analysis and numerical simulations”, by H. Le Dret and B. Lucquin, International Series of Numerical Mathematics, Vol 168, Birkhaüser, 2016). These two books themselves contain a list of references.

i. Did you use any books, classroom material, AV, or other technology-based materials? Students used their computers for the practical sessions (with Scilab software) and I used a video projector for these sessions.
j. What type of assessment tools did you use? I did at least 3 tutorial sessions with exercises (seeing and helping them individually) and 3 practical sessions with Scilab (same). I also did a test, but the results were not good.
k. In which language was the course given: English
l. Was the course language, the native language of the students? No and they have very important difficulties with English (they can’t manage to speak in English, and I am not sure they understand English ; this is a real problem ; one of them sometimes translated in Lao).
m. Did you give any public lecture, discussed with local staff issues regarding curriculum? I discussed with the staff members regarding the curriculum and I did also some suggestions, in particular concerning the necessity of doing exercises.
n. Where did you live? (e.g. hotel, hostel, on campus, in city e.g.) I lived in a hotel located downtown, near the bus station (to facilitate the daily transportation to the University).

2. Major outcome / achievements (max. 1 pages)

- Including a summary statement (1-2 sentences) of major outcome

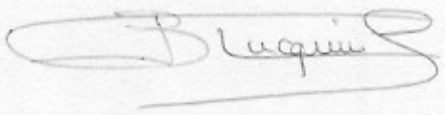
I tried to oblige the students to be active, to work by themselves, do the exercises, ask questions ... Clearly, they were not used to it. This was not easy (they were waiting passively the results and/or trying to copy someone) and it took a lot of time. But I think it is necessary to do it. As I said to them, they have to practise, do mistakes, it is the way to really learn and assimilate things. Not easy to make them understand.
I also initiated them to practical sessions with Scilab, in order to really practise the discretization of PDE, visualise the results and see the importance of the notion of stability of a scheme, for example … I think this was completely new for them.
I thought I would have the possibility to work with one or two local staff members, so that they could teach this course in the future, but, unfortunately, this was not possible (although my course was planned a long time ago). This is a pity, since I think this would be a very good way to improve the curriculum.

3. Planed follow up activities and future implications (up to 1/2 page)

This mission was a request from local people. It was prepared in particular with colleagues from France and Portugal that already did this type of mission in NUOL. We are working together and try to find how we can help them to improve the level which is very low for the moment.
Colleagues from Laos would like us to continue to come and help them.
One thing that should be developed would be probably teacher training. It would be good if it could be the case for future missions. This naturally has to be prepared in advance : find and precisely identify the staff members that would be interested and sufficiently motivated (this represents a real investment) and give them the possibility to be free during this period (which is not quite obvious, since they are teaching a lot).

Date: 6/01/2020

Signature:

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